TTAB

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FILE: 11357.0076.00US00

January 5, 2005

CERTIFICATE OF MAILING
37 C.F.R. §1.8

DATE OF DEPOSIT: January 5, 2005

I hereby certify that this paper or fee is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Commissioner for Trademarks, Box TTAB NO FEE, P.O. Box 1451, Alexandria, Virginia 22313-1451.

Maida E. Ramos

Via U.S. Mail

BOX TTAB – NO FEE
Commissioner for Trademarks
P. O. Box 1451
Alexandria, VA 22313-1451

RE: *Opposition No. 123,312*
Mark: IDEAS INSIDE
Applicant: Steven Emeny
Opposer: Intel Corporation

Dear Madam:

Enclosed for filing in connection with the above-referenced matter are the following documents:

1. Supplemental Notice of Reliance;

2. Affidavit of Leslie K. Skinner, together with Exhibits A through P; and

3. A return postcard to acknowledge receipt of these documents. Please date stamp and return the postcard to us by mail.

Please forward any reply to this communication directly to our Falls Church, Virginia office for docketing purposes. The mailing address is 2941 Fairview Park Drive, Suites 200 & 300, Falls Church, VA 22042 and the Falls Church fax number is 703-336-6950.

Very truly yours,

Bobby A. Ghajar

Enclosure
cc: Leslie Skinner, Esq. (w/encls.)
Katy Basile, Esq. (w/encls.)

01-10-2005
U.S. Patent & TMOfc/TM Mail Rcpt Dt. #64

THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Intel Corporation,	§	Opposition No. 123,312
	§	
Opposer,	§	Application Serial No. 75/825,218
	§	
v.	§	International Classes: 35, 38 & 42
	§	
Steven Emeny.	§	Published: April 24, 2001
	§	
Applicant.	§	

SUPPLEMENTAL NOTICE OF RELIANCE

Opposer, Intel Corporation, through its undersigned attorneys, hereby serves notice that it intends to rely on the following testimony and documents under Trademark Rules 2.120(j) and 2.123(b)

A. Testimonial Affidavit

Pursuant to Trademark Rules 2.120(j) and 2.123(b), the parties have stipulated to the introduction into evidence of the testimonial affidavit. Accordingly, Opposer hereby introduces the supplemental testimonial affidavit of Leslie Skinner (see attached, with accompanying exhibits).

The Supplemental Skinner affidavit is relevant to further prove the fame and prevalence of the Opposer's INTEL INSIDE mark and establish its recent sales and marketing figures.

Respectfully submitted,

Intel Corporation

Date: January 5, 2005

By: _____

Bobby A. Ghajar
Katherine M. Basile
Mike Yaghmai
Howrey Simon Arnold & White
301 Ravenswood Avenue
Menlo Park, CA 94025
(213) 892-1800

ATTORNEYS FOR OPPOSER

Of counsel:

Leslie Skinner, Esq.
Intel Corporation
2200 Mission College Boulevard
P. O. Box 58119, #SC4-203
Santa Clara, California 95052-8119

CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing Supplemental Notice of Reliance was served on Mr. Steven Emeny, 93 Day Avenue, Toronto, Ontario M6E 3Wa, Canada, by First Class mail, postage prepaid, this 5th day of January, 2005.

Maida E. Ramos

THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Intel Corporation,	§	Opposition No. 123,312
	§	
Opposer,	§	Application Serial No. 75/825,218
	§	
v.	§	International Classes: 35, 38 & 42
	§	
Steven Emeny.	§	Published: April 24, 2001
	§	
Applicant.	§	

AFFIDAVIT OF LESLIE K. SKINNER

I, Leslie K. Skinner, declare and state as follows:

1. I am an attorney at Intel Corporation in the Trademark & Brands Group. I work within a team responsible for the INTEL INSIDE and INTEL INSIDE & Design trademarks on a worldwide basis. I have been with Intel in Santa Clara, California since October 1992. I confirm that I am authorized to testify on behalf of Intel Corporation ("Intel"). I have access to Intel's records and confirm that the facts and information given below are taken from those records or from my own personal knowledge.

2. Attached as Exhibit A is a true and correct copy of Intel's 2002 Annual Report.

3. Attached as Exhibit B is a true and correct copy of Intel's 2003 Annual Report.

4. Attached as Exhibit C is a true and correct copy of "A Revolution in Progress ... A History of Intel to Date.

5. Attached as Exhibit D is a true and correct copy of a press release dated May 23, 2003: *Borders Group and Intel Promote High-Speed Wireless Internet Access at Borders Books & Music® Stores Nationwide.*

6. Attached as Exhibit E are true and correct copies of the INTEL INSIDE CENTRINO ads.

7. Attached as Exhibit F are true and correct copies of articles printed from LEXIS relating to Intel for the year 2003.

8. Attached as Exhibit G is a true and correct copy of an article published January 9, 2003 in the San Jose Mercury News, *Intel will wage Centrino campaign.*

9. Attached as Exhibit H is a true and correct copy of an article published in the San Jose Mercury News, *INTEL CENTRINO campaign announced.*

10. Attached as Exhibit I are true and correct copies of press releases in 2003 relating to the INTEL CENTRINO launching.

11. Attached as Exhibit J are true and correct copies of pages of The New Yorker dated September 22, 2003 relating to INTEL CENTRINO.

12. Attached as Exhibit K are true and correct copies of PC Magazine from Fall 2003 showing INTEL INSIDE CENTRINO ads.

13. Attached as Exhibit L are true and correct copies of Unwired showing INTEL INSIDE CENTRINO ads.

14. Attached as Exhibit M is a true and correct copy of The Wall Street Journal published June 9, 2003 showing INTEL INSIDE CENTRINO ads.

15. Attached as Exhibit N is a true and correct copy of The Wall Street Journal published June 2, 2003 showing INTEL INSIDE CENTRINO ads.

16. Attached as Exhibit O is a true and correct copy of Business Week published April 26, 2004 showing INTEL INSIDE CENTRINO ads.

17. Attached as Exhibit P is a true and correct copy of Fortune Magazine published March 15, 2004 showing INTEL INSIDE CENTRINO ads.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 5th day of January, 2005, at Los Altos, California.

/Leslie Skinner/
Leslie Skinner

CERTIFICATE OF SERVICE

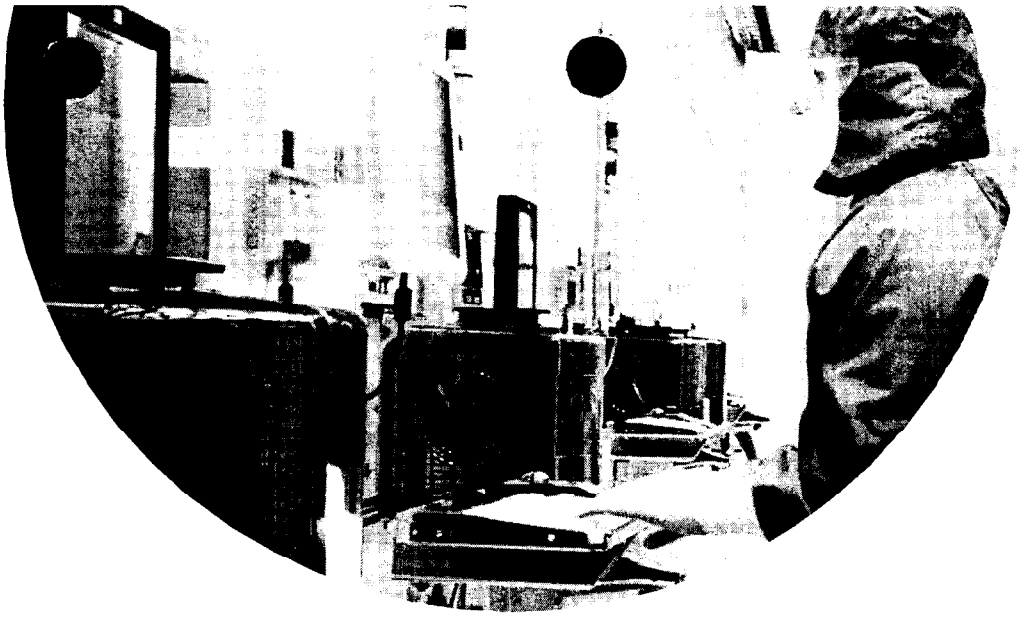
This is to certify that a copy of the foregoing Affidavit of Leslie K. Skinner and the exhibits thereto were served on Mr. Steven Emeny, 93 Day Avenue, Toronto, Ontario M6E 3Wa, Canada, by First Class mail, postage prepaid, this 5th day of January, 2005.

Maida E. Ramos

Maida E. Ramos

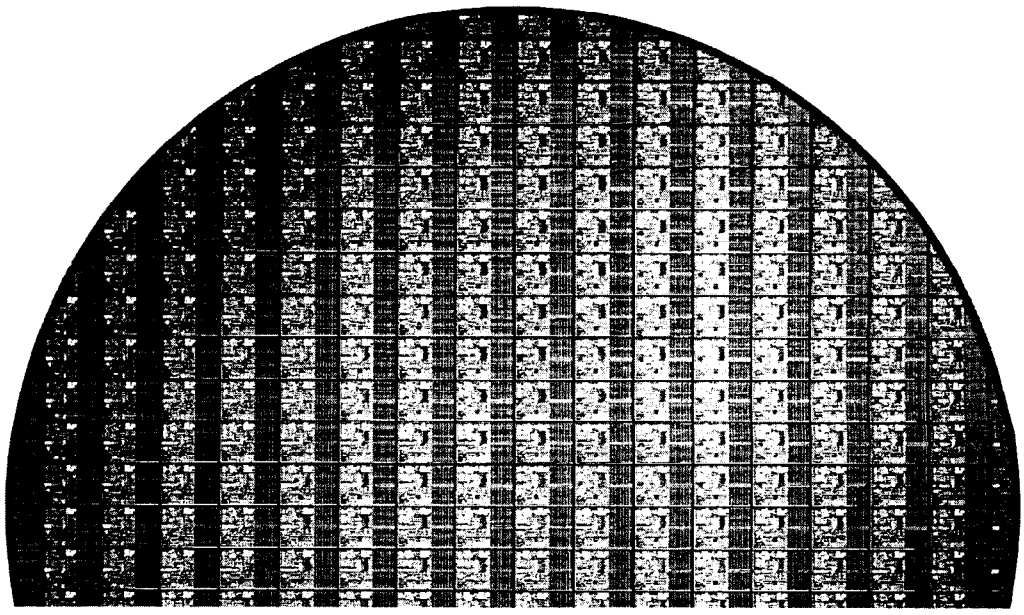
EXHIBIT A

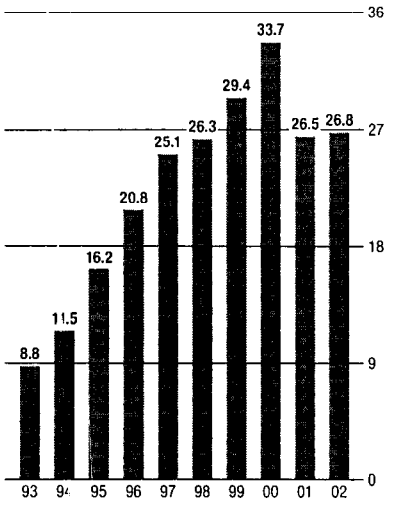
intel®



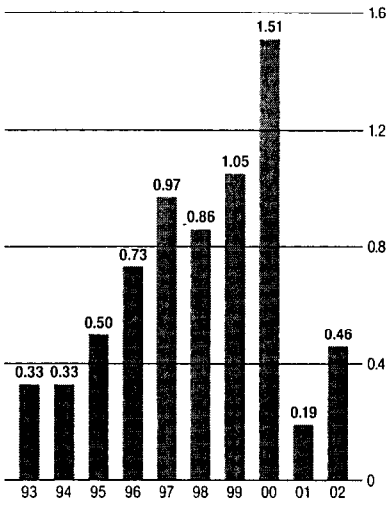
Does advanced technology really matter?

2002 Annual Report
intel.com intc.com



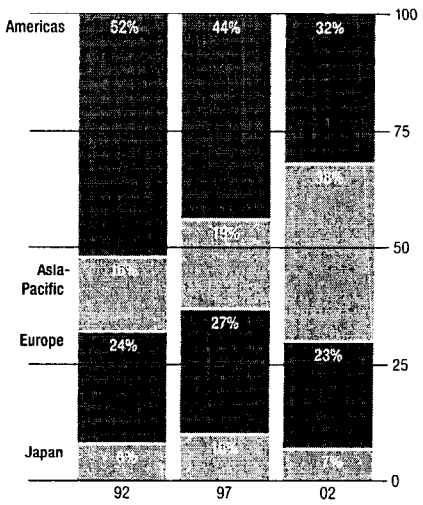


Net revenue
Dollars in billions



Diluted earnings per share†
Dollars, adjusted for stock splits

†Amortization of goodwill reduced earnings per share in 2001 by $0.22 ($0.18 in 2000 and $0.05 in 1999). Goodwill is no longer amortized, beginning in 2002.

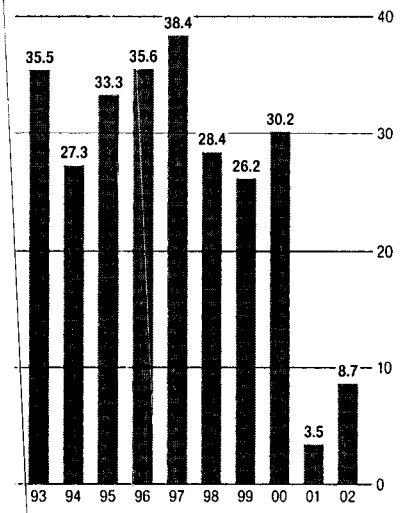


Geographic breakdown of revenue
Percent

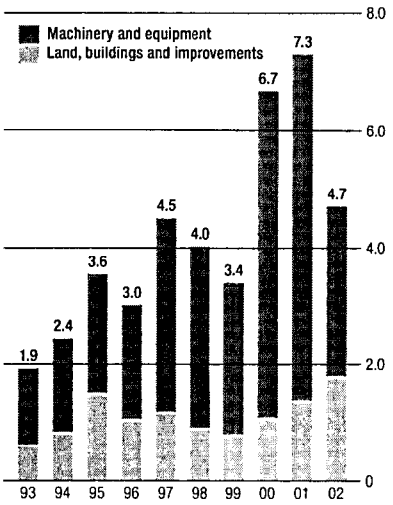
New Intel® technologies deliver wireless capability for people on the go.

Our "Yes" consumer ad campaign highlights the benefits of Intel technology.

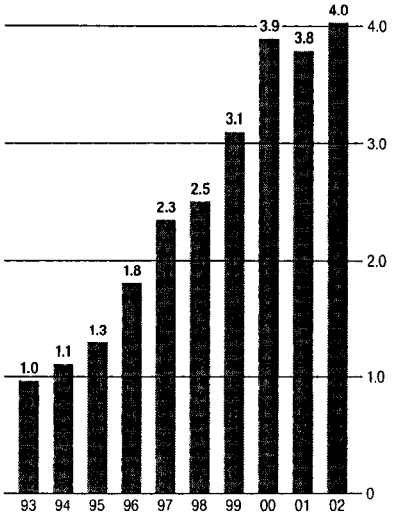
intel®



Return on average stockholders' equity
Percent



Capital additions to property, plant and equipment
Dollars in billions



Research and development†
Dollars in billions

†Excluding purchased in-process research and development

Past performance does not guarantee future results.

Cover: (Top) In 2002, we continued to invest in leading-edge manufacturing facilities, such as this cleanroom in New Mexico, where our new 300mm manufacturing process dramatically increases the number of chips per wafer. (Bottom) A wafer of Intel® Pentium® M processors, which are part of Intel® Centrino™ mobile technology.

Letter from your management

Yes, advanced technology matters more now than ever. In a slow economy, progress depends on the ability to work and communicate faster and more effectively.

Craig R. Barrett

Paul S. Otellini

When does technology matter? When a business traveler can connect wirelessly to her company's network while waiting to board a plane. When a manager can electronically deliver training to employees at their desks. When a salesman can access his contact database and track sales on his cell phone. At Intel, we provide the building blocks, including wireless networking and next-generation computing and communications architectures, for products that make people more productive virtually anytime, anywhere. Our advanced manufacturing technologies let us deliver leading-edge performance products at lower costs, and help put us one generation ahead of the competition.

In 2002, difficult business conditions for Intel and other technology companies limited our opportunities for financial growth, and we ended the year with revenue of $26.8 billion, relatively flat compared to 2001. Nevertheless, we feel renewed optimism: we shipped a record number of microprocessors in the fourth quarter of 2002, we are gaining ground in key product market segments, and we are investing for long-term success. In 2002, we spent $4.7 billion or new factories and other construction projects, and we invested $4.0 billion in research and development (R&D), primarily focused on silicon products and processes. We ended 2002 with considerable accomplishments in key technology arenas:

Manufacturing: Our advanced manufacturing technology is the heart of our operations, enabling us to put increasing numbers of circuits on a single silicon chip and allowing for products that have higher performance as well as added features. In 2003, we are beginning the ramp to our groundbreaking 90-nanometer silicon technology, which will bring new communications capabilities into our manufacturing process, enabling faster, more integrated and less costly communications chips. In 2002, we continued our manufacturing conversion to 300mm (12-inch) wafers, from our older 200mm (8-inch) wafers, ultimately reducing our costs. The conversion to 300mm wafers allows for more efficient use of our capital investment in equipment by providing more than twice as many equivalent chips per wafer as 200mm wafers.

Wireless and mobile computing: Despite the overall technology slowdown, the wireless digital world is showing remarkable progress. According to industry analyst Gartner, Inc., mobile PC sales are projected to grow at a compound annual rate of 13% from 2002 through 2006, and the penetration of wireless LAN technology into the professional mobile PC installed base is projected to grow from 20% in late 2001 to more than 90% by the end of 2007.

We have exciting technologies in this area. In September 2002, we announced our upcoming mobile PC technology, which features a new processor specifically designed for the mobile market segment. The forthcoming products, known as Intel® Centrino™ mobile technology, are designed to provide outstanding performance, extended battery life, new thin and light form factors, and seamless wireless connectivity We introduced the first products as part of Intel Centrino mobile technology in March 2003. In February 2003, we announced our first "wireless-Internet-on-a-chip" cellular processor, designed to facilitate smaller handheld PDAs and cell phones by combining baseband communications features with memory and applications processing functionality

Desktop PCs: Our 2002 product advances helped us gain significant market segment share in microprocessors for the PC It was a very strong year for the Intel® Pentium® 4 processor, with almost 70% of all the Pentium 4 processors shipped in the fourth quarter of 2002 running at 2 gigahertz or faster. In November 2002 we introduced the Pentium 4 Processor with HT Technology, which increases performance in systems with supporting components by allowing a single processor to handle two streams of data instructions simultaneously. The Pentium 4 processor is also the world's first commercial desktop microprocessor to operate at 3 gigahertz, or 3 billion cycles per second. This speed results in real user benefits, improving the performance of the increasingly complex software that is so much a part of people's daily work and play

Servers: Servers are powerful systems—often with multiple microprocessors working together—that run enterprise applications, mine large amounts of data, and control central functions in networks and on the Internet. 2002 was a great year for our server platform products. We introduced the Intel® Xeon™ processor featuring HT Technology, enabling higher performance in two-way servers and workstations, and the Intel Xeon processor MP, aimed at servers based on four or more processors. Both processors are based on the Intel® NetBurst™ microarchitecture.

Also in 2002, we introduced our advanced Intel® Itanium® 2 microprocessor, designed for the most demanding applications that servers run and enabling our customers to offer competitive systems at lower prices. In 2002, server manufacturers introduced a variety of powerful systems incorporating as many as 32 Itanium 2 processors each.

Strong foundation: We believe these accomplishments lay the foundation for the future of Intel's advanced technology. Our charter is to be one generation ahead of the competition in R&D, manufacturing technology and key products, thereby exceeding customer expectations, capturing design wins and increasing profitability

The business environment continues to be tough for technology but we feel that our successes in 2002 position us well for future growth. We are confident in our long-term plans to grow both revenue and profitability through our leadership in technology products, manufacturing and the power of the Intel® brand.

CR Barrett

Craig R. Barrett
Chief Executive Officer

Paul S. Otellini

Paul S. Otellini
President and Chief Operating Officer

Letter from your chairman

"We take corporate governance seriously, expecting to achieve the same continuous improvement as in all of our business operations."

Andrew S. Grove

For corporate America, 2002 was the year of corporate governance, accounting-industry discipline and overhaul, and housecleaning of Wall Street practices—in Congress, in the courts and in the press. Corporate scandals, bankruptcies and investigations culminated in the Sarbanes-Oxley Act, the most significant expansion of the federal securities and corporate law since World War II. We have followed all of this activity very closely, and we are actively participating in the national debate, making our views known to legislators, regulatory bodies and the general public.

Corporate governance is typically defined as the system that allocates duties and authority among a company's stockholders, board of directors and management. The stockholders elect the board and vote on extraordinary matters; the board is the company's governing body, responsible for hiring, overseeing and evaluating management, particularly the chief executive officer (CEO); and management runs the company's day-to-day operations. The end result is intended to be a well-run, efficient company that identifies and deals with its problems in a timely manner, creates value for its stockholders, and meets its legal and ethical responsibilities.

We take corporate governance seriously, expecting to achieve the same continuous improvement as in all of our business operations. Eight of our 11 directors are "independent" from the company except for their service on the board. They are not employees and do not have other business or consulting engagements with the company. We rely on our independent directors to bring us a diverse portfolio of knowledge and personal perspectives as well as business judgment.

We expect that our directors will be engaged with us both inside and outside of board and committee meetings. Our directors meet with senior management on an individual basis, and attend and participate in employee forums. Unaccompanied by senior management, individual directors visit Intel sites around the world—an excellent opportunity for them to assess local site issues directly. These activities help to keep the board better informed, and make the board's oversight and input more valuable.

Our independent directors regularly meet as a group, led by an elected lead independent director who conducts and reports on the meetings The lead independent director also chairs the board's Executive Committee and Corporate Governance Committee. The board's Audit Compensation, Corporate Governance, Finance and Nominating committees consist solely of independent directors, with the expectation that this independence will assist them in objectively overseeing the company's management.

Business and society must re-establish the balance of power between the CEO and the board of directors. Separating the roles of chairman and CEO is an important step toward better corporate governance. As CEO, Craig Barrett is the highest ranking member of management, and is accountable for the corporation's management and performance. My job as chairman is to help ensure that the board is organized to fulfill its responsibilities I preside at board meetings, make sure that the board receives the right information, set board meeting agendas and ensure that the directors have sufficient time for discussion.

As chairman, I am also responsible, in conjunction with our lead independent director, for managing our board and CEO evaluation processes. In an annual self-assessment process, I meet with each director individually, and we discuss how each director performs his or her tasks, how they can improve, and what we should do to help them and the board be more effective. Our CEO is subject to the same "360" evaluation by which all Intel employees are evaluated: the independent directors and employees who work for and with the CEO all provide feedback on his performance

I feel very comfortable that the board personifies our key Intel values. They have a results orientation and constructively confront and solve problems. They work as a team with respect and trust for each other. They embrace change and challenge the status quo in a business environment where technology and external conditions constantly change. They are quality oriented. They continuously learn develop and improve their own performance, and look for the same in management. Most importantly, the board demonstrates through its operations and values the key Intel value to conduct our business with uncompromising integrity and professionalism.

In closing, I want to mention an issue that gained prominence in 2002: accounting for stock options. For years, the U.S. economy has increasingly been driven by the contributions of knowledge workers. Broad-based stock option plans offer the opportunity of ownership and provide owner-like motivation to knowledge workers After 40 years in a knowledge-based industry, I do not know a better way to achieve this sense of ownership—not even a close second

Today's arguments over stock option accounting are a red herring The real issue highlighted in the events of 2002 is excessive compensation for executives, no matter what currency is used—cash loans, apartments, options, whatever. At Intel, we routinely grant more than 97% of our stock options to employees other than the top five members of management; by doing so, we are using a powerful incentive and retention tool for the benefit of all of our stockholders

People who focus on accounting for stock options risk harming investor interests. Current proposals to change the accounting would tinker with financial statements to the detriment of meaningful disclosure. The result would be distorted financial information and new opportunities for abuse. We do not need to follow an era of "virtual profits" with one of "virtual expenses," and we do not want to undercut the ability and willingness of companies to use broad-based option plans when we should be trying to appropriately solve the actual problems in executive compensation.

For more information on Intel's corporate governance and social responsibility activities, visit www.intc.com.

Andrew S. Grove

Andrew S. Grove
Chairman

Letter from your chief financial officer

"Our financial strategy reflects Intel's long-held belief that profits finance growth."

Andy D. Bryant

For the last two years, as major economies around the world have struggled, Intel has vigorously pursued the same financial strategy: attack non-essential spending to protect profits and preserve cash while proceeding with investments that make us more competitive. As a measure of our progress in 2002, we note these financial accomplishments:

- Net income of $3.1 billion.
- 16 consecutive years and 64 consecutive quarters of profitability.
- Operating income of $4.4 billion, or 16% of revenue.
- Another year of progress in containing discretionary spending, which declined in dollars and as a percentage of sales. In absolute dollars, discretionary spending has declined nearly 50% from its peak in 2000.
- A 6% reduction in our workforce, accomplished without major layoffs, reducing the workforce by 13% since peak employment in March 2001.
- Savings of hundreds of millions of dollars as we re-deploy resources to areas of higher productivity and strategic importance. In 2001, these efforts took an estimated $1 billion out of our cost structure, followed by additional savings in 2002 of more than $300 million.
- Outstanding credit controls. The quarterly DSO (days' sales outstanding) ranged from 34 to 37 days. A lower DSO is an indicator that the company will be able to turn receivables into cash faster.
- Capital spending of $4.7 billion and research and development investments of $4 billion, primarily directed to advanced technologies and processes.
- 41 consecutive quarters of dividend payments, a cumulative distribution of $2.8 billion.
- $4 billion in stock repurchases, bringing the cumulative number of shares repurchased to 1.7 billion.
- An increase of just over $1 billion in cash, short-term investments and fixed-income trading assets, bringing the total to $12.2 billion.
- A strong balance sheet, with debt that is only 4% of equity.
- Seven consecutive years in which cash from operations has exceeded $8 billion.
- Return on invested capital that is among the highest in the semiconductor industry.

It is difficult to create shareholder value in the current economic environment—even more difficult to do so two years in a row. The challenge, also an opportunity, is to make sure the company is in the best practicable financial health during poor economic conditions while making the investments we believe will position us to take advantage of the inevitable recovery. Our financial strategy reflects Intel's long-held belief that *profits* finance growth. Although the accomplishments listed above deliver measurable financial progress now, we are planning for their full value to be realized in the months and years ahead. We are grateful to our employees for their extraordinary effort and to our stockholders for remaining with us.

New environment, new legislation, new processes

While tackling the business challenges of the last two years, we have also worked to stay ahead of larger changes in business and society. Always a company with a healthy dose of paranoia, Intel has strengthened its efforts to preserve the safety of our employees, the accuracy of our financial information and the integrity of our business practices.

A special task force on safety and security worked throughout 2002 to test and improve Intel's ability to respond to a crisis. Led by senior management, the team has focused on the safety of people, protection of assets and business continuity.

New corporate and securities laws seek to avert a different crisis, to restore public confidence in the financial information companies provide to stockholders. The practical implications of the new regulations have been enormous. To comply with these regulations, Intel has implemented a host of new processes involving thousands of hours of work.

Executive management meets regularly to review the adequacy of the company's internal and disclosure controls. We rely on our internal controls for the accuracy of our financial information and on our disclosure controls to report information to the public in a timely manner. These controls are designed to give reasonable assurance that public filings contain no material inaccuracies or omissions. Following these reviews, the chief executive officer (CEO) and I, as chief financial officer (CFO), certify the company's financial statements, and publish a report on our controls evaluation in our filings with the U.S. Securities and Exchange Commission.

Intel believes that the events of the last year have created an environment that demands more than compliance with the law to maintain public confidence. Company culture must be based on an ethic of uncompromising integrity, one of Intel's key values since its founding. The example set by a company's leadership is essential to defining such a culture. In my 21 years at Intel, I have worked for three CEOs: Gordon Moore, Andy Grove and Craig Barrett. Without exception, each of them has always expected me to do the right thing for our stockholders.

While necessary, leadership alone is not sufficient. Every employee must be able to be a role model. Last year, Intel expanded its education program to provide a strong base of tools that can help people deal with increasingly complex business ethics situations. In January 2003, we launched an Ethics at Intel web site. Hundreds of managers participate in special classes on ethics and business practices. Before the end of the year, essentially all Intel employees will be required to take a new course in business ethics in addition to their current training. Integrity is not a steady state but a constant effort.

Stock options: accounting matters

A critical measure of a company's integrity is the quality of its reported financial information. Investors have a right to receive information that is accurate and transparent, providing the basis for making informed investment decisions. This principle is the foundation for U.S. capital markets, which remain the strongest in the world. Accounting matters.

Proposals to change the accounting treatment for stock options will impair rather than improve the usefulness of our financial reports. The pros and cons of stock options have been the subject of much public debate, but the practical issues regarding the quality of the information investors receive have been overlooked. Forcing companies to "create" a non-cash expense would guarantee that investors would routinely receive unreliable financial information that is highly subjective and easily manipulated.

Intel, along with many companies, as well as finance and accounting professionals, believes that stock options do not constitute an expense, as they do not involve a cash payment or result in an outflow of corporate assets. To treat options as an expense, companies would have to estimate their value by relying on valuation models that were not intended for this purpose and therefore result in inherently inaccurate calculations. The result would be a significant non-cash item based on arbitrary assumptions and therefore ripe for abuse. This takes us back down a path that the country is trying to leave behind: the use of complex formulas to justify the value of items for which markets do not exist.

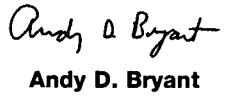
Since 1995, companies have been required to use one of these formulas to value their employee stock option grants and to include the information in a footnote to their financial statements. During that time, various empirical studies have testified to the variability and subjectivity of this exercise. The irrelevance of this calculation is also borne out in my personal experience. During my nine-year tenure as CFO of Intel, only a handful of investors have asked me about the valuation of this would-be expense.

Investors have, however, more frequently asked us about other information provided in the same footnote: the potential *dilution* from stock option grants. Dilution, which can result from issuing additional shares, is the real cost of a stock option program. Options do not alter the overall financial performance of a company. They do not reduce earnings, but they do increase the potential number of shares that could have a claim to those earnings. The change is not in the overall size of the pie but in the way the pie is sliced. The cost of dilution is borne by existing stockholders, and its impact is accurately and transparently reflected in our financial reports.

Intel is a big believer in the power of full disclosure. We support proposals that would require companies to provide additional information so that investors can assess the potential dilution and effectiveness of stock option programs. In 2002, we expanded our disclosure to provide quarterly information about the impact of grants, the distribution of grants between top executives and other employees, and data about grant amounts and exercise prices.

Intel's goal is to keep potential new dilution attributable to stock options below an annual average of 2% of the total shares outstanding. In fact, our actual dilution has been significantly less than 2%. We also limit the percentage of options issued to the top five officers, with more than 97% of options routinely granted to a broad base of employees. Substantially all Intel employees participate in one of our stock option plans.

The evidence is compelling that broadly based option plans add value for all stockholders. Unnecessary accounting changes adding unreliable information to the income statement would be counter-productive for your company and to the goal of continuous improvement in financial reporting.



Andy D. Bryant
Chief Financial Officer

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**
For the fiscal year ended December 28, 2002.

☐ **Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**
For the transition period from _____ to _____.

Commission File Number 0-6217

INTEL CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**94-1672743**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

2200 Mission College Boulevard, Santa Clara, California, 95052-8119
(Address of principal executive offices, Zip Code)

Registrant's telephone number, including area code **(408) 765-8080**

Securities registered pursuant to Section 12(b) of the Act:

None

Securities registered pursuant to Section 12(g) of the Act:
Common stock, $0.001 par value

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K ☐

Indicate by check mark whether the registrant is an accelerated filer (as defined in Exchange Act Rule 12b-2). Yes ☒ No ☐

Aggregate market value of voting stock held
by non-affiliates of the registrant as of June 29, 2002
$117.6 billion
6,544 million shares of common stock outstanding as of February 21, 2003

DOCUMENTS INCORPORATED BY REFERENCE

(1) Portions of the registrant's proxy statement relating to its 2003 Annual Stockholder's Meeting, to be filed subsequently—Part III.

INTEL CORPORATION

FORM 10-K

FOR THE FISCAL YEAR ENDED DECEMBER 28, 2002

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PART I

ITEM 1. BUSINESS

Industry

We are the world's largest semiconductor chip maker, supplying advanced technology solutions for the computing and communications industries. Our goal is to be the preeminent building block supplier to the worldwide Internet economy. Our products include chips, boards and other semiconductor components that are the building blocks integral to computers, servers, and networking and communications products. We offer products at various levels of integration, allowing our customers flexibility to create advanced computing and communications systems.

Our component-level products consist of integrated circuits used to process information. Integrated circuits are silicon chips, known as semiconductors, etched with interconnected electronic switches. Our developments in semiconductor design and manufacturing have made it possible to decrease the size of circuits etched into silicon, permitting more transistors to be used on each individual chip. This decrease in circuit size generally allows us to add additional features to our products and/or to make more chips from each silicon wafer, resulting in smaller and faster microprocessors and other semiconductor products that consume less power and cost less to manufacture.

We were incorporated in California in 1968 and reincorporated in Delaware in 1989. Our Internet address is *www.intel.com*. On our Investor Relations web site, located at *www.intc.com*, we post the following filings as soon as reasonably practicable after they are electronically filed with or furnished to the Securities and Exchange Commission: our annual report on Form 10-K, our quarterly reports on Form 10-Q, our current reports on Form 8-K and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934. All such filings on our Investor Relations web site are available free of charge.

Products

Our major products include microprocessors; chipsets; boards; flash memory; application processors used in cellular handsets and handheld computing devices; cellular baseband chipsets; networking and communications products such as Ethernet connectivity products, optical components and network processing components; and embedded control chips (microcontrollers).

Our major customers are:

- original equipment manufacturers (OEMs) who make computer systems, cellular handsets and handheld computing devices, telecommunications and networking communications equipment, and peripherals;
- PC and network communications products users (including individuals, large and small businesses, and service providers) who buy PC components and board-level products, as well as Intel's networking and communications products through distributor, reseller, retail, e-Business and OEM channels throughout the world; and
- other manufacturers, including makers of a wide range of industrial and communications equipment.

Focusing on our core competencies in the design and manufacture of integrated circuits, as well as our expertise in digital computing and communications, we believe we are well positioned to drive the convergence of computing and communications through silicon integration. We focus on developing advanced technology solutions tailored to meet user requirements in specific settings, providing the features people want in their homes, at work and at play. We also provide key components for the networking and communications infrastructure needed to connect technology users.

Each of our operating segments uses its core competencies, as well as key silicon architectures, to provide building blocks for technology solutions. The Intel Architecture business provides the advanced technologies to support the desktop, mobile and enterprise platforms. The Wireless Communications and Computing Group focuses on component-level products and solutions for the wireless handheld communications market. Finally,

the Intel Communications Group focuses on wired and wireless connectivity products, and provides key components for networking and communications infrastructure devices.

Intel Architecture Business

The Intel Architecture business develops platform solutions around our microprocessors and chipsets for end products in the desktop, mobile and server market segments.

- Desktop and mobile platforms incorporate our microprocessor and chipset products in desktop computers, notebooks, entry-level servers and workstations, and Internet appliances. Our strategy for the desktop platform is to introduce ever-higher performance microprocessors and chipsets, tailored for the different market segments of the worldwide computing market, using a tiered branding approach. For the mobile platform, our strategy is to deliver products optimized for the four mobility vectors: performance, battery life, form factor and wireless capability.

- Enterprise platform products are targeted at mid-range to high-end servers and workstations, as well as high-performance enterprise-class servers. Servers are powerful systems, often with multiple microprocessors working together, that house large amounts of data, direct traffic, perform complex transactions and control central functions in local and wide area networks and on the Internet. Workstations offer higher performance than standard desktop PCs, especially in graphics processing and in the ability to perform several tasks at the same time. Our strategy for the enterprise platform is to provide high-performance processors and the best price for performance across the entire range of server and workstation market segments.

The Intel Architecture business's products include processors and board-level products based on our 32-bit Intel® architecture. This IA-32 architecture encompasses both the Intel® NetBurst™ microarchitecture (used in the Intel® Pentium® 4 and related microprocessors) and the previous P6 microarchitecture (used in Intel® Pentium® III and related microprocessors). We also offer the 64-bit Intel® Itanium® processor family for enterprise-class servers. In addition, we offer chipsets compatible with our microprocessor products. These chipsets improve ease of use for our OEM customers, provide new capabilities and enable overall system performance to scale as processor performance increases.

Net revenue for the Intel Architecture operating segment made up approximately 83% of our consolidated net revenue in 2002.

Microprocessors

A microprocessor is the central processing unit (CPU) of a computer system. It processes system data and controls other devices in the system, acting as the "brains" of the computer. One indicator of microprocessor performance is its clock speed, the rate at which its internal logic operates, which is measured in units of hertz, or cycles processed per second. One megahertz (MHz) equals one million cycles processed per second, and one gigahertz (GHz) equals one billion cycles processed per second. Other factors affecting chip performance include the amount of memory storage, the speed of memory access, and the speed of communication between the CPU and the chipset. The memory stored on a chip is measured in bytes, with 1,024 bytes equaling a kilobyte (KB), 1.049 million bytes equaling a megabyte (MB) and 1.074 billion bytes equaling a gigabyte (GB). Cache is a memory subsystem in which frequently used data is duplicated for quick access. Second (L2) and third (L3) levels of cache, located directly on the microprocessor for faster access or between the CPU and main memory, can also be used to further increase overall system performance.

As of year-end 2002, we manufactured a majority of our microprocessors and chipsets using our 0.13-micron process technology. The width of individual transistors on a chip is measured in microns and nanometers: one micron equals one millionth of a meter; one nanometer is one thousandth of a micron, or one billionth of a meter. Decreasing the width of the transistors helps us make smaller and faster microprocessors at a lower cost. See the discussion of manufacturing process technologies under the heading "Manufacturing, Assembly and Test" in Part I, Item 1 of this Form 10-K.

In 2002, we announced a number of new microprocessor products tailored to meet performance, price and form factor needs for computing market segments ranging from consumer desktops to high-performance servers.

Desktop Platform. In 2002, [redacted]ntel Pentium 4 processor was our highe[redacted]lume desktop processor. The Pentium 4 processor, based on the Intel NetBurst microarchitecture, is optimized to deliver high performance across a broad range of business and consumer applications, especially the latest technologies in web, interactive 3D, and streaming video and audio environments. These processors also enhance the user's experience in many applications, such as e-Learning, Internet browsing and computer gaming.

In January 2002, we introduced the first Pentium 4 processors running at up to 2.2 GHz built on our 0.13-micron manufacturing process technology. This technology allowed us to reduce the die size by 30% and double the size of the on-chip L2 cache memory, which enhances the processor's performance. Throughout the year, we introduced eight additional Pentium 4 processors running at speeds of up to 2.8 GHz.

In November 2002, we introduced the Intel Pentium 4 Processor with HT Technology. This chip is the first commercial desktop microprocessor to operate at 3 billion cycles per second, or 3 GHz. This chip is also our first desktop processor to incorporate Hyper-Threading Technology (HT Technology), which increases system-level performance by allowing a single processor to handle two streams of data instructions simultaneously. This capability provides system-level performance benefits in two ways: through multithreaded software (software designed to execute different parts of a program simultaneously) or through using software in a multitasking environment. To take advantage of the HT Technology capability, a computer system must have a processor that supports the technology, a chipset and BIOS (basic input/output system) that use the technology, and an operating system that includes optimizations for the technology. Performance will vary depending on the system hardware and software used.

In February 2002, we unveiled plans for our next-generation desktop microprocessor, code-named "Prescott," which is slated for introduction in 2003. Prescott will be manufactured on our 90-nanometer process technology and will include HT Technology.

In the value PC market segment, the Intel® Celeron® processor is designed to meet the core computing needs and affordability requirements of some value-conscious PC users. During 2002, we introduced seven new versions of the desktop Celeron processor running at speeds ranging from 1.3 GHz to 2.2 GHz.

In March 2002, we announced the shipment of our 100 millionth boxed microprocessor through our worldwide reseller sales channel. We launched our boxed processor program in 1994 to make our products and technical information available to smaller systems builders that cater to small business customers and emerging markets around the world.

Mobile Platform. We design our mobile products to provide notebook and laptop PC users with the performance they need while providing wireless capability and meeting the power consumption and size constraints of mobile PCs. As with our desktop processors, we offer mobile processors at a variety of price/performance points, allowing our OEM customers to meet the demands of a wide range of notebook PC designs. These notebook designs include full size, thin and light, and ultra-portable. Within the ultra-portable design category, we provide specialized low-voltage processors, which consume as little as one watt of power on average, and Ultra Low Voltage processors, which consume as little as half a watt of power on average. Low-voltage processors are targeted for the mini-notebook market segment while Ultra Low Voltage processors are targeted for the sub-notebook and tablet market segments of mobile PCs weighing less than three pounds and measuring one inch in height.

During 2002, we introduced 33 new mobile processors, providing solutions across a wide range of market segments. In January 2002, we introduced seven new versions of the Mobile Intel® Pentium® III Processor-M and the Celeron processor based on 0.13-micron technology. With this introduction, we transitioned our entire mobile processor product line to the 0.13-micron process, delivering the benefits of smaller die size and higher performance to all of our mobile processors.

In March 2002, we introduced the first Pentium 4 microprocessors for mobile PCs: the Mobile Intel® Pentium® 4 Processor-M, which ran at speeds of up to 1.7 GHz. Aimed at both the full-size and thin-and-light notebook market segments, this processor is designed to enable both consumer and business users to take full advantage of processing-intensive applications such as audio and video encoding, digital imaging, speech recognition, 3D content creation, computer games, and multimedia and multitasking environments. In January 2003, the Mobile Intel Pentium 4 Processor-M was available at speeds of up to 2.4 GHz.

Throughout 2002 and through January 2003, we introduced the Mobile Intel Pentium III Processor-M at speeds ranging from 1.26 GHz to 1.33 GHz, as well as low-voltage versions ranging from 866 MHz to 1 GHz, and Ultra Low Voltage versions ranging from 750 MHz to 933 MHz.

Throughout 2002 and through January 2003, we introduced mobile Celeron processors at speeds ranging from 1 GHz to 2 GHz, as well as low-voltage versions ranging from 733 MHz to 866 MHz, and Ultra Low Voltage mobile Celeron processors at speeds ranging from 650 MHz to 800 MHz, all aimed at the mobile value PC market segment.

In January 2003, we announced our intention to introduce products based on the Intel® Centrino™ mobile technology in March 2003. This is our first computing technology designed and optimized specifically to maximize the wireless computing experience for mobile PC users. Intel Centrino mobile technology is a combination of a new Intel® Pentium® M processor with the related Intel chipset and 802.11-based wireless networking technology.

Enterprise Platform. The Enterprise Platforms Group provides microprocessors and chipsets for server and workstation systems. In 2002, we provided building blocks for solutions across a wide range of server market segments. In February 2002, we introduced the first Intel® Xeon™ processor for servers, based on the Intel NetBurst microarchitecture, featuring HT Technology. Server platforms using these Intel Xeon processors, with the supporting components and operating system necessary to use HT Technology, can significantly boost system performance for two-way systems compared to server platforms running on Pentium III processors. Aimed at two-way servers and workstations, these Intel Xeon processors were introduced at speeds of up to 2.2 GHz. We introduced several additional versions throughout 2002, leading up to the November introduction of Intel Xeon processors running at speeds of up to 2.8 GHz with 512 KB integrated cache. To make it easier for server and workstation makers to build systems based on the Intel Xeon processor, we also introduced server building block products, including new boards, chassis and RAID (redundant array of independent disk) controllers (which help to protect data by writing data across several disks).

In March 2002, we introduced the Intel Xeon processor MP at speeds of up to 1.6 GHz, bringing our Intel NetBurst microarchitecture to servers based on four or more processors. These processors are designed to boost performance of mid-tier and back-end servers by up to 30% or more compared to multiprocessor systems based on the Pentium III Xeon processor.

In November 2002, we introduced the Intel Xeon processor MP with an enhanced 2 MB integrated level three cache, running at speeds of up to 2 GHz. Designed for mid-tier and back-end servers based on four or more processors, this processor delivers up to 38% better performance for typical server applications, compared to previous generations of the Intel Xeon processor MP.

In July 2002, we began commercial shipments of our new Itanium® 2 processors, the second in the 64-bit Itanium processor family, a line of enterprise-class processors designed for the most data-intensive business-critical and technical computing applications. Systems based on the Itanium 2 processor deliver up to twice the performance of first-generation Itanium-based systems.

In March 2002, we introduced the industry's first dual-processor capabilities for "ultra-dense" blade servers. Ultra-dense blade servers are used in enterprise data centers and by Internet service providers to offer web serving, firewall protection and web caching. The Low Voltage Pentium® III processors used in dual-processing systems offer the small size, low power consumption and low heat that blade servers require.

Chipsets

If the microprocessor is considered the "brains" of the PC, the chipset operates as the PC's "nervous system"—sending data from the processor to all the input, display and storage devices, such as the keyboard, mouse, monitor, hard drive, and CD or DVD drive. Chipsets perform essential logic functions supporting the CPU, such as balancing the performance of the system and removing bottlenecks; they also extend the graphics, audio, video and other capabilities of many systems based on our processors. Our chipsets are compatible with one or more of a variety of industry-accepted bus specifications, such as the Peripheral Components Interconnect (PCI) local bus specification and the Accelerated Graphics Port (AGP) specification. A bus is a circuit that carries data between parts of the system, for example, between the processor and main memory. Our customers demand memory architecture alternatives, and as a result, we currently offer chipsets supporting Double Data Rate (DDR) Dynamic Random Access Memory (DRAM), Synchronous DRAM (SDRAM) and Rambus* DRAM (RDRAM).

To help computer makers reduce the time-to-market for their products, we design, manufacture and sell chipsets for each computing market segment. In May 2002, we introduced the Intel® 845G, 845E and 845GL chipsets. These chipsets include integrated Hi-Speed Universal Serial Bus (USB) 2.0, which increases USB bandwidth up to 40 times compared to the previous USB 1.1 interface. The Intel 845G chipset is designed for PCs based on the Intel Pentium 4 microprocessor and incorporates both a new generation of integrated graphics capabilities and software drivers. The Intel 845E chipset works with specific graphics components to provide flexibility for makers of Pentium 4 microprocessor-based systems, while the Intel 845GL chipset is designed for PCs based on the Intel Celeron microprocessor.

In May 2002, we introduced the Intel® 850E chipset, complementing the Pentium 4 processor's 533-MHz system bus for higher performance desktop PCs. In October 2002, we introduced an enhanced Intel 850E chipset and three new chipsets—the Intel® 845GE, 845PE and 845GV chipsets—all supporting our HT Technology and utilizing high-speed system buses to maximize the performance of the Pentium 4 processor.

In March 2002, we introduced the Intel® 845MP chipset for the Mobile Pentium 4 Processor-M. The new chipset supports the enhanced Intel SpeedStep® technology (which improves power management in mobile computers), and supports external AGP 4X graphics, a 400-MHz processor system bus and DDR 266-MHz SDRAM. In addition, in January 2003, we introduced the Intel® 852GM integrated graphics chipset, also supporting enhanced Intel SpeedStep technology. The Intel 852GM chipset includes six integrated Hi-Speed USB 2.0 ports.

For workstation and server makers, in February 2002 we introduced the Intel® E7500 chipset, which is optimized for the Intel Xeon processor and supports DDR memory technology. The E7500 chipset enables twice the memory bandwidth of legacy SDRAM platforms. In November 2002, we introduced the Intel® E7501 chipset for two-way servers and the embedded computing market segment; the Intel® E7505 chipset for two-way workstations using Intel Xeon processors; and the Intel® E7205 chipset for single processor, entry-level workstations based on the Intel Pentium 4 processor.

Board-Level Products

To help proliferate our microarchitectures through all of our computing market segments, we offer board-level products based on our microprocessors. While many of our OEM customers use our microprocessors as components in designing their own computer products, some also use board-level products that we design and build. OEMs may purchase products from us at this level of integration to reduce their time-to-market and to direct their investments to other areas of their product lines. We provide board-level products to give our OEM customers flexibility by enabling them to choose whether to buy at the component or board level.

Sales and Gross Margin

For 2002, the majority of our consolidated net revenue and gross margin came from sales of the Intel Pentium 4 microprocessor and related microprocessors based on the Intel NetBurst microarchitecture, as well as related chipsets and boards. Sales of the Pentium III microprocessor and related microprocessors based on the P6 microarchitecture, as well as related products, made up a significant but steadily decreasing portion of our consolidated net revenue and gross margin. During 2001, sales of microprocessors based on the P6 microarchitecture and related board-level products and chipsets made up the majority of our consolidated net revenue and a substantial majority of our gross margin. For the same period, sales of products based on the Intel NetBurst microarchitecture and related products were a significant and rapidly increasing portion of our consolidated net revenue and gross margin. For 2000, sales of microprocessors based on the P6 microarchitecture and related products made up a substantial majority of our consolidated net revenue and gross margin.

Wireless Communications and Computing Group

The Wireless Communications and Computing Group provides component-level building blocks for digital cellular communications and other applications requiring both low-power processing and high performance. Our strategy is to deliver complete solutions that enable quick deployment of applications and services for wireless Internet and handheld computing devices such as cell phones, personal digital assistants (PDAs) and smart displays. Our current products for the handheld platform include flash memory, processors based on the Intel® XScale™ microarchitecture, and cellular baseband chipsets.

In the market segment for [redacted]held computing devices, we sell flash me[redacted], baseband chipsets and processors to OEMs of cellular handsets. For OEMs of PDAs, we offer flash memory and processors. Growth in this market segment is dependent on the increased use of handsets with more features and data-intensive applications.

At the heart of our wireless product strategy is the Intel® Personal Internet Client Architecture (Intel® PCA), an open architecture platform that describes the separation of communication and application building blocks for data-enabled cellular phones and portable handheld devices. By separating the communication and application elements within a device, Intel PCA allows for faster time-to-market for our customers and a standard, scalable platform for application development.

Net revenue for the Wireless Communications and Computing Group operating segment made up approximately 8% of our consolidated net revenue for 2002.

Flash Memory

Flash memory is a specialized type of memory component used to store user data and program code; it retains this information even when the power is off. Although flash memory is currently used predominantly in mobile phones and PDAs, it is also found in common consumer products, including MP3 music players, handheld voice recorders and digital answering machines, as well as industrial products. In the first quarter of 2002, we began shipping the industry's first flash memory built on the 0.13-micron manufacturing process technology. This new flash chip, the 32-Mb Advanced+ Boot Block flash chip, is nearly 50% smaller and consumes less power than its 0.18-micron predecessor, making it ideal for cell phones and other electronics equipment for which small form factor and low power consumption are critical.

In April 2002, we introduced the Intel® Wireless Flash memory at 1.8 volts, running up to four times faster than previous flash solutions. These flash memory products increase the performance of data-intensive Internet phone applications such as browsing, streaming multimedia and text messaging.

Our Intel StrataFlash® memory technology provides a cost-effective, single-chip solution for code execution and data storage. In October 2002, we introduced the Intel StrataFlash® Wireless memory, the world's first 1.8-volt multi-level cell flash memory on industry-leading 0.13-micron process technology. The new product is the first to combine wireless performance features with Intel StrataFlash technology, doubling the number of bits in a single memory cell (multi-level cell) for higher performance and greater data storage for wireless devices. It is the first multi-level cell memory to run at 1.8 volts, the lowest in the industry.

Processors for Handheld Computing Devices

The Intel XScale microarchitecture, offering low power consumption and fast clock speeds, enables a new generation of handheld and cellular devices, as well as wireless smart displays. Smart displays are wireless flat-panel displays that are used as monitors when docked to a base desktop PC, but when detached become a mobile monitor using 802.11 industry standard wireless technology. In February 2002, we introduced the Intel® PXA250 and PXA210 chips, designed to enable mobile phones and handheld computing devices to deliver music, video and computer games. In March 2002, we introduced extended temperature versions of the Intel PXA250 and Intel PXA210 application processors for use in telematics terminals in cars, to provide services such as roadside emergency assistance, navigation systems, integrated hands-free cellular phones, and multimedia entertainment and information systems.

In September 2002, we introduced Intel® Wireless MMX™ technology for the Intel PCA architecture, designed to bring desktop-like multimedia capabilities to wireless and handheld products based on Intel PCA.

In October 2002, we introduced "system-in-a-package" technology in the form of the Intel® PXA261 and PXA262 microprocessors, designed for data-enabled wireless handsets based on Intel PCA. These processors place an Intel XScale technology-based processor directly on top of Intel StrataFlash memory chips in a single package.

Cellular Baseband Chipsets

We offer baseband chipsets for designing multi-mode, multi-band wireless handsets. Our chipsets support multiple wireless standards and deliver enhanced voice quality and high integration, while reducing power consumption and costs. We offer the Intel® D5205 TDMA Baseband Chipset, a compact two-chip solution, and

the Intel® 5206 TDMA Baseban[redacted]ip, a compact single-chip solution, both [redacted]ual-mode cellular and Personal Communication Services (PCS) band applications. We also offer the Intel® D5314 PDCharm2 Single-Chip Baseband, a compact single-chip solution for dual rate (full and half rate) baseband processing for personal digital cellular handheld phones.

We are working toward the convergence of computing and communications in this market segment by developing technology for mobile handheld clients that combines baseband communications features with memory and applications processing functionality. In February 2003, we announced our first "wireless-Internet-on-a-chip" cellular processor, which will integrate these three functions.

Intel Communications Group

The Intel Communications Group provides silicon and integrated networking and communications building blocks based on three focus areas that we believe to be defining trends for the Internet: Ethernet connectivity products, optical components and network processing components that provide programmable building blocks for modular networking infrastructure. We also offer embedded control chips for use in imaging products, automotive systems and other applications.

Net revenue for the Intel Communications Group operating segment made up approximately 8% of our consolidated net revenue for 2002.

Ethernet Connectivity Products

Ethernet is an industry-standard technology used to translate and transmit data in packets across networks. As Ethernet expands from the traditional local area network (LAN) environment into the wireless LAN (WLAN) market segment, the metropolitan area network (MAN) and the networked storage market segment, we are expanding our Ethernet product portfolio to address these emerging market segments. In storage, we are developing products that enable storage resources to be added to any location on an Ethernet network. For the MAN market segment, we offer Ethernet products at multiple levels of integration to provide a low-cost solution with increased speed and signal transmission distance (commonly referred to as "reach").

Our LAN strategy is to maintain leadership in client Ethernet connections as the market segment transitions from Fast Ethernet to Gigabit Ethernet. Gigabit Ethernet networks allow the transmission of one billion individual bits of information per second. By contrast, Fast Ethernet networks transmit 100 million bits of information per second (Mbps, or megabits per second).

In February 2002, we introduced three new single-chip Gigabit Ethernet products for desktop PCs, workstations and servers that are significantly smaller and use less power than previous products. The products include a new single-port, single-chip Gigabit Ethernet controller for workstations and a dual-port, single-chip controller, enabling server manufacturers to add two Gigabit Ethernet network connections in the same amount of space previously required for a single connection. In addition, we introduced a new Gigabit Ethernet adapter, the Intel® PRO/1000 T IP Storage Adapter, designed to make networked storage easier and less expensive by enabling block storage data to travel over copper-based Ethernet networks.

Our strategy in wireless Ethernet is to significantly accelerate deployment of WLAN capability by developing WLAN products and fostering the adoption of integrated WLAN into the mobile and notebook computer segments. The Intel® PRO/Wireless 5000 LAN Dual Band Access Point allows for simultaneous connections of 802.11b and 802.11a networks to the same device. The 802.11 specification is a networking standard set by the Institute of Electrical and Electronic Engineers (IEEE). Compared to 802.11b, products based on the 802.11a specification can provide a faster exchange of data between computing devices and networks.

Optical Components

Opto-electronic components are electrical components used in optical networking equipment, and Synchronous Optical Network (SONET), Synchronous Digital Hierarchy (SDH) and Ethernet are the primary optical data transport standards in the telecommunications industry. For the MAN and wide area network (WAN) market segments, we provide a variety of multi-protocol and multi-rate components that support SONET/SDH and Ethernet standards.

In March 2002, we introduced five new optical networking components to give telecommunications equipment manufacturers increased flexibility when building 10-Gigabit-per-second optical networking systems. These products span the range of optical networking applications, from enterprise to metro and long-haul market segments.

Also in March 2002, we announced that we are expanding our optical networking business to include photonics design and manufacturing. Photonics is a specialized field that involves manipulating light pulses over optical fiber for the transmission and processing of information over networks. We also introduced the single-chip Intel® 82597EX 10 Gigabit Ethernet controller running at 10 Gigabits per second. This controller brings high-performance 10-Gigabit Ethernet connections to the enterprise market segment.

In August 2002, we introduced optical transceiver products designed to accelerate 10-Gigabit communications in enterprise data centers. In November 2002, we expanded this product line with a suite of five optical components aimed at meeting the reduced size, cost and power consumption requirements for 10-Gigabit optical transceivers used in enterprise applications.

Network Processing Components

The Intel® Internet Exchange Architecture (Intel® IXA) provides a flexible platform for the networking and communications industry to build faster, more intelligent networks using reprogrammable silicon. Our network processor products consist of advanced, programmable devices that are used in networking equipment to rapidly manage and direct data moving across the Internet and corporate networks. Our strategy in network processing is to develop an industry-leading product roadmap, invest in modular communications standards and enable activities to accelerate silicon deployment.

In February 2002, we unveiled a family of network processors based on the Intel XScale core microarchitecture. These network processors are designed for applications extending from the home and office to service providers' central switching offices and include the Intel® IXP2800 network processor for network core applications, such as ultra-high-speed switch/routers; the Intel® IXP2400 network processor for multi-service switches and similar equipment at the network edge; and the Intel® IXP425 network processor for equipment that brings digital subscriber line (DSL) service, cable Internet service and wireless networking to homes and offices. In February 2003, we introduced the Intel® IXP 420, IXP 421 and IXP 422 network processors for equipment aimed at home, small office/home office (SOHO) and small- to medium-enterprise market segments.

In September 2002, we expanded our communications processing product portfolio with two new processors for communications equipment manufacturers: the Intel® IXC1100 control-plane processor, our first control-plane processor based on the Intel XScale technology, and the low-voltage Intel Xeon applications and services processor. These chips combine integrated technologies with low power consumption for communications and wireless infrastructure equipment.

In October 2002, we introduced the Intel® IXP2850 network processor, which builds on the Intel IXP2800 network processor architecture to provide added encryption and data integrity standards, allowing for more secure content processing for applications such as virtual private networks and web services.

Embedded Control Chips

Our embedded control chips are used in a broad range of applications, including imaging products, storage media, point-of-sale systems, industrial automation equipment and automotive systems. Product families include the Intel 186, Intel386™, Intel486™, Intel® Pentium® II, and Intel® Pentium® III processors; the Intel® i960® processor; and 8-bit and 16-bit microcontrollers. In June 2002, Intel added the Mobile Intel Pentium 4 Processor-M and the Intel Pentium 4 processor to its line-up of embedded processors, for use in high-performance embedded computing solutions such as virtual private networks, firewalls, point-of-sale terminals and kiosk applications.

Manufacturing, Assembly and Test

As of year-end 2002, more than 70% of our wafer manufacturing, including microprocessor, flash memory and networking silicon fabrication, was conducted within the United States at our facilities in Arizona, Oregon, New Mexico, Massachusetts, Colorado and California. Outside the United States, almost 30% of our total wafer fabrication, primarily microprocessor and chipset fabrication, was conducted at our facilities in Israel and Ireland.

As of year-end 2002, the ma[redacted]y of our microprocessors and chipsets w[redacted]anufactured using our 0.13-micron process technology, on 200mm (8-inch) wafers, in Oregon, Arizona, Massachusetts and California. The latest Pentium 4 processors are manufactured using our 0.13-micron process technology. The 0.13-micron process technology is our most advanced high-volume production process featuring structures smaller than 1/1000th the thickness of a human hair (0.18 micron is 1/500th the thickness of a human hair). We also continue to manufacture microprocessors and chipsets using our 0.18-micron process technology in Israel, Ireland, Arizona and New Mexico.

In 2002, we brought on line our second 300mm (12-inch) wafer fabrication facility in New Mexico. Both our New Mexico and Oregon 300mm facilities currently manufacture processors based on 0.13-micron process technology. In the third quarter of 2002, we announced plans to begin manufacturing processors on 300mm wafers using our next-generation 90-nanometer (a nanometer is one-billionth of a meter) process technology in the second half of 2003. We expect to have three 300mm wafer facilities using the 90-nanometer process by the end of 2004, with the third facility under construction in Ireland. We believe we are the first company to complete development of 90-nanometer process technology and to demonstrate manufacturing readiness with complex integrated circuits. We also announced plans for two additional 300mm facilities in Oregon and Arizona that will start production after 2004.

During 2002, we ramped our flash memory production using 0.13-micron process technology in New Mexico and California. In the first half of 2003, we intend to ramp flash memory production using 0.13-micron process technology in Ireland. We also manufacture flash memory in Colorado and New Mexico using our 0.18-micron technology.

We perform a substantial majority of our components assembly and test, including assembly and test for microprocessors, at facilities in Malaysia, the Philippines and Costa Rica. We also perform components assembly and test for chipsets and flash memory at a facility in China. In the third quarter of 2002, we announced an additional investment in our facilities in China with plans to add microprocessor assembly and test capabilities in 2003. We plan to continue to invest in new assembly and test technologies and facilities to keep pace with our microprocessor, chipset and flash technology improvements.

We also manufacture microprocessor- and networking-related board-level products in Malaysia and California. During the first half of 2002, for cost-competitive reasons, we phased out our systems manufacturing operations in Washington that produced microprocessor- and networking-related system-level products.

To augment capacity in the United States as well as internationally, we use subcontractors to perform assembly of certain products, primarily flash memory, chipsets, and networking and communications products, as well as third-party manufacturing services (foundries) to manufacture wafers for certain components, including networking and communications products. We also use subcontractors to manufacture some board-level products and systems, and we purchase certain communications networking products from external vendors primarily in the Asia-Pacific region.

We have thousands of suppliers, including subcontractors, providing our various materials and service needs. We seek, where possible, to have several sources of supply for all of these materials and resources, but on limited occasions we may rely on a single or limited number of suppliers, or upon suppliers in a single country. In those cases, we develop and implement plans and actions to minimize the exposure that would result from a disruption at that supplier. We also typically have multiple factories at multiple sites around the world producing our products. However, some products are produced in only one factory, and again we seek, through other actions and plans, to minimize the exposure that would result from a disruption at that factory.

Manufacturing of integrated circuits is a complex process. Normal manufacturing risks include errors and interruptions in the production process, defects in raw materials and disruptions at suppliers, as well as other risks, all of which can affect yields. A substantial decrease in yields would result in higher manufacturing costs and the possibility of not being able to produce sufficient volume to meet specific product demand.

We operate globally—with sales offices; research and development; and manufacturing, assembly and test in many countries—and so we are subject to risks and factors associated with doing business outside the United States. Global operations involve inherent risks that include currency controls and fluctuations; tariff, import and other related restrictions and regulations. If terrorist activity, armed conflict, civil or military unrest or political instability occurs in the United States, Israel or other locations, such events may disrupt manufacturing, assembly and test, logistics, security and communications, and could also result in reduced demand for Intel's products. We could also be affected if labor issues disrupt our transportation arrangements or those of our

customers or suppliers. On a wo[redacted]de basis, we regularly review our key in[redacted]ucture, systems, services and suppliers both internally and externally, to seek to identify significant vulnerabilities as well as areas of potential business impact if a disruptive event were to occur. Once identified, we assess the risks, and as we consider it to be appropriate, we initiate actions intended to minimize the risks and their potential impact. However, there can be no assurance that we have identified all significant risks or that we can mitigate all identified risks with reasonable effort.

We maintain a program of insurance coverage for various types of property, casualty and other risks. We place our insurance coverage with various carriers in numerous jurisdictions. The policies are subject to deductibles and exclusions that result in our retention of a level of risk on a self-insurance basis. The types and amounts of insurance obtained vary from time to time depending upon availability, cost and our decisions with respect to risk retention. The deletion of insurance coverage for terrorist acts following the attacks on the World Trade Center in New York City served as the impetus for the recently enacted Terrorism Risk Insurance Act of 2002 requiring insurers to offer terrorism coverage within the United States. As with any new legislation, there are limitations and restrictions that are not yet fully understood, and pricing of such coverage may be prohibitive. We will continue to evaluate the purchase of terrorism coverage should pricing and terms become more favorable.

For information regarding environmental proceedings related to certain facilities, see the information under the heading "Legal Proceedings" in Part I, Item 3 of this Form 10-K.

Employees

In July 2002, we announced that we expected to reduce our workforce by approximately 4,000 employees over the remainder of 2002, primarily through attrition, voluntary separation programs and some targeted business disinvestments. We had exceeded this goal by the end of 2002. As of December 28, 2002, we employed approximately 78,700 people worldwide, with a little over 35% of these employees located outside the United States.

Sales

Most of our products are sold or licensed through sales offices located near major concentrations of users, primarily throughout the Americas, Europe, Asia-Pacific and Japan. Sales agreements often contain standard terms and conditions covering matters such as pricing, payment terms, and warranties as well as indemnities for issues specific to our products, such as patent and copyright indemnities. From time to time we may enter into additional agreements with customers covering, for example, new product development and marketing, private-label branding and other matters. Sales of particular products are generally done with purchase orders issued under the sales agreements. Most of Intel's sales are done using electronic and web-based processes that allow the customer to review inventory availability and to track the progress of specific goods under order. Pricing on particular products may vary based on volumes ordered and other factors. Purchases by customers often allow them to participate in cooperative advertising and marketing programs such as the Intel Inside® program.

We also use industrial and retail distributors and sales representatives to distribute our products worldwide. Typically, distributors handle a wide variety of products, including those that compete with our products, and fill orders for many customers. Most of our sales to distributors are made under agreements allowing for price protection on unsold merchandise and right of return on stipulated quantities of unsold merchandise. Sales representatives generally do not offer directly competitive products but may carry complementary items manufactured by others. Representatives do not maintain a product inventory; instead, their customers place orders directly with us or through distributors.

We have a worldwide reseller sales channel with thousands of indirect customers who are systems builders. These systems builders purchase Intel microprocessors and other products from distributors and receive various levels of technical and marketing services and support directly from Intel. We have a "boxed processor program" that allows distributors to sell Intel microprocessors in small quantities to these systems builder customers; boxed processors are also made available in direct retail outlets. Since 1994, our worldwide reseller sales channel has grown substantially and has become an increasingly important part of our business. Through our various programs supporting the reseller sales channel, we seek to maintain positive customer relations with these numerous systems builders around the world.

Our products are typically s[redacted]ed under terms that transfer title to the [redacted]omer, even in arrangements where the customer may have a later right to return or to exchange the products and the recognition of revenue on the sale is deferred. The sales agreements typically provide that payment is due at a later date, such as 30 days after shipment or delivery. Our credit department sets accounts receivable and shipping limits for individual customers, for the purpose of controlling credit risk to Intel regarding outstanding account balances. We assess credit risk through quantitative and qualitative analysis, and from this analysis, we establish credit limits and determine whether we will seek to use one or more credit support devices, such as retention of a security interest in the product or the receipt of some form of third-party guarantee or other credit enhancement. We may seek credit enhancement devices such as stand-by letters of credit or credit insurance where the credit lines required to support the level of business with specific customers exceed what we consider to be normally acceptable risk levels. Credit losses may still be incurred due to bankruptcy, fraud or other failure of the customer to pay. See "Schedule II—Valuation and Qualifying Accounts" on page 83 in this Form 10-K for information on our allowance for doubtful receivables.

In 2002, we conducted business with more than 2,000 customers worldwide. Dell Computer Corporation contributed approximately 16% to our total sales. Hewlett-Packard Company contributed approximately 15% to our total sales (including sales to Compaq Computer Corporation before the merger with Hewlett-Packard). A substantial majority of the sales to these customers consisted of Intel Architecture business products. No other customer accounted for more than 10% of our total revenue. Sales to our three largest customers accounted for approximately 38% of total revenue. For the information regarding revenue and operating profit by reportable segments and revenue from unaffiliated customers by geographic region/country, see "Note 21: Operating Segment and Geographic Information" in Part II, Item 8 of this Form 10-K and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of this Form 10-K.

Backlog

Our sales are made primarily pursuant to standard purchase orders for delivery of standard products. We have some agreements that give a customer the right to purchase a specific number of products during a specified time period. Although not generally obligating the customer to purchase any particular number of such products, some of these agreements do contain billback clauses. Under these clauses, customers who do not purchase the full volume agreed to are liable for billback on previous shipments up to the price appropriate for the quantity actually purchased. As a matter of industry practice, billback clauses are difficult to enforce. The quantity actually purchased by the customer, as well as the shipment schedules, are frequently revised during the agreement term to reflect changes in the customer's needs. In light of industry practice and experience, we do not believe that such agreements are meaningful for determining backlog amounts. We believe that only a small portion of our order backlog is noncancellable and that the dollar amount associated with the noncancellable portion is not material. Therefore, we do not believe that backlog as of any particular date is indicative of future results.

Competition

Our goal is to be the preeminent building block supplier to the worldwide Internet economy. Focusing on our core competencies in silicon design and manufacture of integrated circuits as well as our expertise in digital computing and communications, we believe we are well positioned to drive the convergence of computing and communications through silicon integration. In each of our market segments, our products compete, to various degrees, on the basis of functionality, performance, quality, price and availability. Our ability to compete also depends upon our ability to provide worldwide support for our customers. Rapid advances characterize the semiconductor industry, and our ability to continue to compete depends on our ability to improve our products and processes faster than our competitors, anticipate changing customer requirements, and develop and launch new products to meet them, and at the same time reduce our costs. Our competitors also routinely add features to their products, seek to increase their products' performance and/or sell their products at lower prices over time. We cannot predict whether our products will continue to compete successfully with existing rival architectures and/or whether new architectures will establish or gain market acceptance or increase competition with our products.

In the semiconductor industry, prices decline rapidly as unit volumes grow, further competition develops and production experience is accumulated. The life cycle of our products is very short, often less than a year. Many companies compete with us in the various computing, networking and communications market segments, and are engaged in the same basic fields of activity, including research and development. Worldwide, these

competitors range in size from l[redacted]multinational companies with multiple p[redacted]ct lines to smaller companies that compete in specialized market segments. In some cases our competitors are also customers and/or suppliers. Some competitors have integrated operations, including their own manufacturing facilities, while other competitors perform certain functions themselves and outsource design, manufacturing and/or other functions. Competitors who outsource their manufacturing can significantly reduce their capital expenditures.

Most of our products, including all of our Intel architecture microprocessors, are built in our own manufacturing facilities, although a substantial portion of Intel Communications Group's manufacturing is performed by third-party manufacturers. We believe that our network of manufacturing facilities and assembly/test facilities is a competitive advantage. This network allows us more direct control of our processes, quality control, product cost, volume and timing of production and other factors. These types of facilities are very expensive, and many of our competitors do not own such facilities because they cannot afford to do so or because their business models involve the use of third-party facilities for manufacturing and assembly/test. These "fabless semiconductor companies" include, e.g., Broadcom Corporation, NVIDIA Corporation, QUALCOMM Incorporated, and VIA Technologies, Inc. Some of our competitors own portions of such facilities through investment or joint-venture arrangements with other companies. There is a group of third-party manufacturing and assembly/test companies (foundries) that offer their services to companies without owned facilities or companies needing additional capacity. These foundries may also offer intellectual property, design services, and other goods and services to our competitors.

Many of our competitors are licensed to use our patents, and we are licensed to use their patents, through various cross-licensing agreements. Some competitors have broad licenses with us, and under current case law, such licenses permit these competitors to pass our patent rights on to others. If one of these licensees becomes a foundry, our competitors might be able to avoid our patent rights in manufacturing competing products.

We plan to continue to cultivate new businesses and work with other hardware and software companies and industry groups to expand product offerings and Internet capabilities, including the infrastructure for wireless access, and develop compelling software applications and operating systems designed to take advantage of our higher performance microprocessors and chipsets as well as our next-generation semiconductor components. We frequently participate in industry initiatives designed to discuss and agree upon technical specifications and other aspects of technologies that could be adopted as standards by standard-setting organizations. Our participation does not ensure that any standards or specifications adopted by these organizations will be consistent with our product planning. Participation in such initiatives may require us to license our patents to other companies that adopt the standards or specifications, even when such organizations do not adopt standards or specifications proposed by Intel. Any Intel patents implicated by our participation in such initiatives might not be available for us to enforce against others who might be infringing those patents.

When we believe it is appropriate, we will take various steps, including introducing new products and discontinuing older products, reducing prices, and offering rebates and other incentives in order to increase acceptance of our latest products and to be competitive within each relevant market segment. From time to time, we may terminate product development before completion or decide not to manufacture and sell a developed product, so we do not expect that all of our product development projects will result in products that ultimately are released for sale. For example, we may decide that the product might not be sufficiently competitive in the relevant market segment, or, for technological or marketing reasons, we may decide to offer a different product instead. Our products often incorporate features that will only increase the product's performance or otherwise be useful to the end user if other companies have developed operating systems, other software applications or other hardware that take advantage of these features.

Intel Architecture Business

The Intel Architecture business supports the desktop and mobile platforms with the IA-32 architecture. The Intel Architecture business also supports the enterprise platform with the Intel Xeon processor family for workstations and mid-range to high-end servers, and the Intel Itanium processor family for enterprise-class servers. For desktop platforms, our strategy is to introduce ever-higher performance microprocessors and chipsets, developed for different market segments of the worldwide computing market, using a tiered branding approach. For the mobile platform, our strategy is to deliver products optimized for the four mobility vectors: performance, battery life, form factor and wireless capability. For the enterprise platform, our strategy is to provide high-performance processors and the best price for performance across the entire range of server and workstation market segments.

Our financial results are substantially dependent on microprocessor sales in the Intel Architecture operating segment. Many of our competitors, including Advanced Micro Devices, Inc. (AMD), our primary microprocessor competitor, market software-compatible products intended to compete with Intel architecture-based processors. We also face significant competition from companies offering rival microprocessor designs, such as International Business Machines Corporation (IBM) and Motorola, Inc., which supply microprocessors to Apple Computer, Inc. Competitive product offerings continue to increase in the market segments where we have product offerings. Our desktop processors compete with products offered by AMD, IBM, Motorola and VIA, among others. Our mobile microprocessor products compete with products offered by AMD, IBM, Motorola, Transmeta Corporation and VIA, among others. Our server processors compete with software-compatible products offered by AMD and with established products based on rival architectures, including those offered by Hewlett-Packard Company, IBM and Sun Microsystems, Inc. Our chipsets compete in the various market segments against various types of chipsets that either support our microprocessor products or rival microprocessor products. Competing chipsets are produced by companies such as ATI Technologies, Inc., Broadcom Corporation, Silicon Integrated Systems Corporation (SIS) and VIA. We also compete with other companies offering special-purpose products used in the desktop, mobile and server segments, such as NVIDIA Corporation, which offers graphics components.

Wireless Communications and Computing Group

Within the Wireless Communications and Computing Group, our strategy is to deliver complete solutions that enable quick deployment of applications and services for wireless Internet and personal information devices. For the handheld platform, we currently offer Intel Flash memory, processors based on the Intel XScale microarchitecture, and cellular baseband chipsets. In our various market segments, our products currently compete with the products of other companies, such as AMD, QUALCOMM, Samsung Semiconductor Inc., ST Microelectronics Group and Texas Instruments Incorporated.

Intel Communications Group

Within the Intel Communications Group, our strategy is to be the leading supplier of silicon and integrated networking and communications building blocks for OEMs. We are developing products that focus on technologies that we believe are essential to build out the Internet: Ethernet connectivity products, including products designed for wireless applications, optical products and network processing components. In these areas, we face competition from both established and emerging companies. Our products currently compete against offerings from companies such as Applied Micro Circuits Corporation, Broadcom, IBM, Intersil Corporation, Marvell Technology Co. Ltd. and PMC-Sierra, Inc. Many of our competitors use acquisitions to obtain alternative technologies and products in an effort to achieve leading-edge market positions. The Intel Communications Group market segments have been substantially adversely affected by the economic downturn of the past two years, resulting in no growth or reduced total available market in those segments. These market conditions have resulted in increased competition for the remaining available business opportunities. We cannot predict whether our networking and communications products will continue to compete successfully with those of our existing competitors or new market entrants.

Research and Development

We have maintained our competitive position to a large extent because of our emphasis on research and development, and our goal is to be one generation ahead of the competition in our product offerings and process technologies. Investing in research and development has enabled us to deliver leading-edge technology and has permitted our customers to commit to the use of these new products in the development of their own products. Our research and development activities are directed toward developing new products; hardware technologies; and manufacturing, packaging and testing processes; as well as improving existing products and lowering costs. In addition, we plan to continue to invest in the development of products and process technologies that combine, through silicon integration or complementary product offerings, our strengths in computing and communications.

We perform a substantial majority of the design and development of components and other products in the United States at our facilities in California, Oregon, Arizona, Washington and Massachusetts. Outside the United States, we have been increasing our product development facilities at various locations, including Israel, Malaysia, India, China and Russia. We also maintain research and development facilities in Oregon and

California that are focused on improving manufacturing processes, as well as facilities in Arizona and Malaysia that are dedicated to improvements in assembly and test processes.

We believe that a key trend in the advancement of technology will be the convergence of computing and communications. Users of mobile devices in particular will benefit from the increased functionality of their portable computing devices as computing and communications converge. Throughout 2002, we had key development initiatives around this convergence theme. In March 2003, we plan to introduce products based on the Intel Centrino mobile technology, our first computing technology designed and optimized specifically to maximize the wireless computing experience for mobile PC users. Intel Centrino mobile technology is a combination of a new Intel Pentium M processor with the related Intel chipset and 802.11-based wireless networking technology, designed to enable extended battery life, reliable wireless connectivity, thin and light form factors, and optimized processor performance. In addition, in February 2003 we announced our first "wireless-Internet-on-a-chip" cellular processor for mobile handheld clients, combining baseband communications features with memory and applications processing functionality.

As the technology industry develops operating systems and software with capabilities to address growing data traffic management, storage, computing and communications needs, we believe that there will be increased demand for higher performance enterprise platform products. In line with this belief, we continued our development initiatives around enterprise platform products. As a result, in February 2002, we were able to introduce the first Intel Xeon processor, based on the Intel NetBurst microarchitecture, featuring Hyper-Threading Technology (HT Technology). Server platforms running on these Intel Xeon processors, with the supporting components and operating system necessary to use HT Technology, significantly boost system performance for two-way systems compared to server platforms running on our previous Pentium III processors. Shipping of the Intel Itanium 2 processor during third quarter of 2002 was also a significant achievement. The Intel Itanium 2 processor is the second member of our Itanium processor family, designed for high-end enterprise and high-performance applications, which need the capability of handling high transaction volumes, complex transactions and other data-intensive computing.

We also announced technology advancements that are integrated into Intel's new 90-nanometer manufacturing process technology. We combined the use of strained silicon and copper interconnects that have integrated advanced materials (carbon-doped oxide dielectric material) into our 90-nanometer process. By using strained silicon, electrical current is able to flow more smoothly, increasing the speed of transistors. The copper interconnects integrated with these advanced materials allow for increased signal speed and reduced power consumption. We expect to begin manufacturing processors built using this combined technology in 2003.

Separately, we also announced plans to incorporate communications capabilities in the 90-nanometer manufacturing process. These capabilities include the use of high-speed transistors and "mixed-signal" circuitry, aimed at producing faster, more integrated, less costly communications chips. These integrated silicon technologies will help drive the convergence of computing and communications.

We also have research and development initiatives in other wireless, networking and communications product areas. For wireless devices, we have development projects surrounding the Intel PCA architecture. The Intel PCA architecture is our development blueprint for designing wireless handheld communications devices that combine voice communications and Internet access capabilities. Development initiatives around Intel PCA include processor design based on the Intel XScale technology, digital signal processing core development, improved packaging formats and other communications intellectual property. For networking and communications products, we have focused our development efforts on wireless technologies based on the 802.11 industry standards, higher performance Ethernet connectivity products, network processors based on the Intel XScale technology, modular communications building blocks that reduce development costs and time for network systems developers, and standardized optical components and modules for reduced power and cost.

Our research and development on both processes and products may involve current-generation activities as well as development of process and product roadmaps extending into the future for successive generations. Our manufacturing process work, particularly for future process technology generations, typically involves substantial experimentation, invention and evaluation relating to numerous aspects of manufacturing capability. To varying degrees, these efforts rely on the work of third parties such as university researchers and manufacturers of semiconductor factory equipment. Our process development work may involve alternative and competing technologies, and, for technological or other business reasons, not all of our efforts will result in technology that we deploy in our manufacturing operations.

Products under development involve various types of input/output capabilities and instruction-set architectures. From time to time, we may terminate product development before completion or decide not to manufacture and sell a developed product, so we do not expect that all of our product development projects will result in products that are ultimately released for sale. For a variety of reasons, we may decide not to move forward with a particular product. For example, we may decide that the product might not be sufficiently competitive in the relevant market, or, for technological or marketing reasons, we may decide to offer a different product instead. Our products often incorporate features that will only increase the product's performance or be otherwise useful to the end user if other companies have developed operating systems, other software applications or other hardware that take advantage of these features. We continue to work with other hardware and software companies and industry groups to encourage the development of product offerings designed to take advantage of our products' features.

Despite weak economic conditions, we have continued our commitment to invest in leading-edge technology development. Our expenditures for research and development were $4,034 million in fiscal 2002, $3,796 million in fiscal 2001 and $3,897 million in fiscal 2000. In addition, we incurred charges for purchased in-process research and development related to acquisitions of $20 million for fiscal 2002, $198 million for fiscal 2001 and $109 million for fiscal 2000. Despite an overall decrease in our total number of employees, we held the number of our employees engaged in research and development flat at approximately 21,000 at December 2002 compared to December 2001.

Acquisitions and Strategic Investments

The level of new acquisition and strategic investment activity for 2002 was substantially lower compared to prior years. During 2002, we acquired three development-stage operations in exchange for total consideration of approximately $57 million, augmenting our capabilities in strategic areas within the Intel Communications Group and certain other businesses.

Under our Intel Capital program, we make equity investments in other companies to further our strategic objectives and to support our key business initiatives for the desktop, mobile and enterprise platforms, as well as networking and communications. In 2002, the Intel Capital program also assumed responsibility for overseeing the development and growth of new businesses internally. The Intel Capital program focuses on investing in companies and initiatives to stimulate growth in computing, communications and the Internet, and to grow the information infrastructure, in order to create new business opportunities and expand markets for our products. This strategic investment program helps advance our overall mission to be the preeminent supplier of building blocks to the worldwide Internet economy. The program seeks to invest in companies and businesses that can succeed and have an impact on their market segment. When the strategic objectives of an investment have been achieved, or if the investment or business diverges from our strategic objectives, we may decide to dispose of the investment or wind down the business operation.

Intellectual Property and Licensing

Intellectual property rights that apply to our various products and services include patents, copyrights, trade secrets, trademarks and mask-work rights. We maintain an active program to protect our investment in technology by enforcing our intellectual property rights. We do not intend to license our intellectual property rights broadly unless we can obtain adequate consideration. See also the information under the heading "Competition" in Part I, Item 1 of this Form 10-K.

We have filed and obtained a number of patents in the United States and abroad. While our patents are an important element of our success, our business as a whole is not materially dependent on any one patent. We and other companies in the computing, telecommunications and related high-technology fields typically apply for and receive, in the aggregate, thousands of patents annually in the United States and other countries. In addition, because of the fast pace of innovation and product development, our products are often obsolete before the patents related to them expire. As a result, we believe that the duration of the applicable patents is adequate relative to the expected lives of our products.

The software embedded in our component and system-level products is entitled to copyright protection. Under some circumstances, we may require our customers to obtain a software license before we provide them with that software.

To distinguish genuine Intel products from our competitors' products, we have obtained certain trademarks and trade names for our products, and we maintain cooperative advertising programs with OEMs to promote our brands and identify products containing genuine Intel components.

We also protect certain details about our processes, products and strategies as trade secrets, keeping confidential the information that we believe provides us with a competitive advantage. We have ongoing programs designed to maintain the confidentiality of such information.

Our ability to enforce our patents, copyrights, software licenses and other intellectual property is subject to general litigation risks. When we seek to enforce our rights, we are often subject to claims that the intellectual property right is invalid, or is licensed to the party against whom we are asserting a claim. In addition, our assertion of intellectual property rights often results in the other party seeking to assert alleged intellectual property rights of its own against us. Like many companies in the semiconductor and other high-technology industries, we receive claims that we may be infringing others' intellectual property rights. When we receive such claims, we refer them to our counsel, and current claims are in various stages of evaluation and negotiation. If we determine that it is necessary or desirable, we may seek licenses for certain intellectual property rights. However, we can give no assurance that we will be able to obtain licenses from any claimant, or that we can accept the terms of any offered licenses. Further, we are not able to resolve every dispute without litigation, which is typically time-consuming and expensive. If we are not ultimately successful in defending ourselves against these claims in litigation, we may not be able to sell a particular product or family of products due to an injunction, or we may have to pay material amounts of damages. See also the information under the heading "Legal Proceedings" in Part I, Item 3 of this Form 10-K.

Compliance with Environmental Regulations

To our present knowledge, compliance with federal, state and local provisions enacted or adopted for protection of the environment has had no material effect upon our operations. We also refer to the information under the heading "Legal Proceedings" in Part I, Item 3 of this Form 10-K.

Executive Officers

The following sets forth certain information with regard to executive officers of Intel (ages are as of December 28, 2002):

Craig R. Barrett (age 63) has been a director of Intel since 1992 and Chief Executive Officer since 1998. Prior to that, Dr. Barrett was President from 1997 to 2002, Chief Operating Officer from 1993 to 1997 and Executive Vice President from 1990 to 1997.

Andrew S. Grove (age 66) has been a director of Intel since 1974 and Chairman of the Board since 1997. Dr. Grove was Chief Executive Officer from 1987 to 1998, President from 1979 to 1997 and Chief Operating Officer from 1976 to 1987.

Paul S. Otellini (age 52) has been a director of Intel since May 2002, and President and Chief Operating Officer since January 2002. Prior to that, Mr. Otellini was Executive Vice President and General Manager, Intel Architecture Group, from 1998 to January 2002; Executive Vice President and General Manager, Sales and Marketing Group, from 1996 to 1998; and Senior Vice President and General Manager, Sales and Marketing Group, from 1993 to 1996.

Leslie L. Vadasz (age 66) was a director of Intel from 1988 to May 2002, has been a Director Emeritus of Intel since May 2002 and has been Executive Vice President and President, Intel Capital, since 2000. Prior to that, Mr. Vadasz was Senior Vice President and Director of Corporate Business Development from 1991 to 2000.

Andy D. Bryant (age 52) has been Executive Vice President and Chief Financial and Enterprise Services Officer since 2001, and Senior Vice President and Chief Financial and Enterprise Services Officer from 1999 to 2001. Prior to that, Mr. Bryant was Senior Vice President and Chief Financial Officer in 1999, and Vice President and Chief Financial Officer from 1994 to 1999.

Sean M. Maloney (age 46) has been Executive Vice President and General Manager, Intel Communications Group, since 2001. Prior to that, Mr. Maloney was Executive Vice President and Director, Sales and Marketing Group, in 2001; Senior Vice President and Director, Sales and Marketing Group, from 1999 to 2001; Vice President and Director, Sales and Marketing Group, from 1998 to 1999; and Vice President, Sales, and General Manager, Asia-Pacific Operations, from 1995 to 1998.

Michael R. Splinter (age 52) has been Executive Vice President and Director, Sales and Marketing Group, since 2001. Prior to that, Mr. Splinter was Executive Vice President and General Manager, Technology and Manufacturing Group, in 2001; Senior Vice President and General Manager, Technology and Manufacturing Group, from 1999 to 2001; Vice President and General Manager, Technology and Manufacturing Group, from 1998 to 1999; and Vice President and Assistant General Manager, Technology and Manufacturing Group, from 1996 to 1998.

F. Thomas Dunlap, Jr. (age 51) has been Senior Vice President and General Counsel since 2001, and Vice President and General Counsel from 1987 to 2001. Mr. Dunlap served as Secretary from 1983 to December 2002.

Arvind Sodhani (age 48) has been Vice President and Treasurer since 1990.

Robert J. Baker (age 47) has been Senior Vice President and General Manager, Technology and Manufacturing Group, since 2001, and Vice President and General Manager of Components Manufacturing from 2000 to 2001. Prior to that, Mr. Baker managed Fab Sort Manufacturing from 1999 to 2000 and Microprocessor Components Manufacturing from 1996 to 1999.

Sunlin Chou (age 56) has been Senior Vice President and General Manager, Technology and Manufacturing Group, since 1998. Mr. Chou was Vice President, Technology and Manufacturing Group, from 1988 to 1998.

Ronald J. Smith (age 56) has been Senior Vice President and General Manager, Wireless Communications and Computing Group, since 2001, and Vice President, Wireless Communications and Computing Group, from 1999 to 2001. Prior to that, Mr. Smith was Vice President and General Manager, Computing and Enhancement Group, from 1996 to 1999.

Corporate Governance

Corporate governance is typically defined as the system that allocates duties and authority among a company's stockholders, board of directors and management. The stockholders elect the board and vote on extraordinary matters; the board is the company's governing body, responsible for hiring, overseeing and evaluating management, particularly the Chief Executive Officer (CEO); and management runs the company's day-to-day operations. The primary responsibilities of Intel's Board of Directors are oversight, counseling and direction to Intel's management in the long-term interests of Intel and its stockholders. The Board's detailed responsibilities include: (a) selecting, regularly evaluating the performance of, and approving the compensation of the Chief Executive Officer and other senior executives; (b) planning for succession with respect to the position of Chief Executive Officer and monitoring management's succession planning for other senior executives; (c) reviewing and, where appropriate, approving Intel's major financial objectives, strategic and operating plans and actions; (d) overseeing the conduct of Intel's business to evaluate whether the business is being properly managed; and (e) overseeing the processes for maintaining Intel's integrity with regard to its financial statements and other public disclosures and compliance with law and ethics. The Board of Directors has delegated to the Chief Executive Officer, working with Intel's other executive officers, the authority and responsibility for managing Intel's business in a manner consistent with Intel's standards and practices, and in accordance with any specific plans, instructions or directions of the Board. The Chief Executive Officer and management are responsible to seek the advice and, in appropriate situations, the approval of the Board with respect to extraordinary actions to be undertaken by Intel.

The current Board members include eight independent directors and three members of Intel's senior management: Craig Barrett, Intel's Chief Executive Officer; John Browne, Group Chief Executive of BP plc.; Winston Chen, Chairman of Paramitas Foundation; Andrew Grove, Intel's Chairman of the Board; D. James Guzy, Chairman of Arbor Company; Reed Hundt, Senior Advisor to McKinsey & Company, Inc. and Venture Partner of Benchmark Capital; Paul Otellini, Intel's President and Chief Operating Officer; David Pottruck, President and Co-Chief Executive Officer of The Charles Schwab Corporation (The Charles Schwab Corporation has appointed Mr. Pottruck as its sole Chief Executive Officer effective May 9, 2003); Jane Shaw, Chairman and Chief Executive Officer of Aerogen, Inc.; David Yoffie, Professor of International Business Administration, Harvard Business School; and Charles Young, President of the University of Florida. The Board also has two Directors Emeriti who may participate in Board meetings but do not vote.

The Board and its committees meet throughout the year on a set schedule, and also hold special meetings and act by written consent from time to time as appropriate. Board agendas include regularly scheduled sessions for the independent directors to meet without management present, and the Board's Lead Independent Director leads those sessions. Board members have access to all Intel employees outside of Board meetings, and the Board has a director program that encourages each director to visit different Intel sites worldwide on a regular basis and meet with local management at those sites.

The Board has delegated various responsibilities and authority to different Board committees. The Board currently has, and appoints the members of, standing Audit, Compensation, Corporate Governance, Executive, Finance and Nominating Committees. Each of these committees has a written charter approved by the Board.

The Audit Committee assists the Board in its general oversight of Intel's financial reporting, internal controls and audit functions, and is directly responsible for the appointment, compensation, and oversight of the work of the company's independent auditors.

The Compensation Committee reviews and approves salaries and other matters relating to executive compensation, and administers Intel's stock option plans, including reviewing and granting stock options to officers and other employees. The Compensation Committee also reviews and approves various other company compensation policies and matters.

The Corporate Governance Committee reviews and reports to the Board on a periodic basis with regard to matters of corporate governance. The Corporate Governance Committee also reviews and assesses the effectiveness of the Board's Guidelines on Significant Corporate Governance Issues and recommends to the Board proposed revisions to the Guidelines. In addition, the Corporate Governance Committee makes recommendations to the Board regarding the agenda for Intel's annual stockholders' meetings, and reviews stockholder proposals and makes recommendations to the Board for action on such proposals.

The Executive Committee may exercise the authority of the Board between Board meetings, except to the extent that the Board has delegated authority to another committee or to other persons, and except as limited by Delaware law.

The Finance Committee reviews and recommends matters related to Intel's capital structure, including issuing and restructuring debt and equity securities; Intel's dividend policy and dividend declarations; banking arrangements, including investments of corporate cash; and management of the corporate debt structure. In addition, the Finance Committee reviews and approves structured finance and other cash management transactions whose authorization is not otherwise approved by the Board or delegated to Intel's management.

The Nominating Committee makes recommendations to the Board regarding the size and composition of the Board. The Nominating Committee is responsible for reviewing with the Board from time to time the appropriate skills and characteristics required of Board members in the context of the current make-up of the Board. This assessment includes issues of diversity in numerous factors such as age; understanding of and experience in manufacturing, technology, finance and marketing; and international experience and culture. These factors, and others as considered useful by the Committee, are reviewed in the context of an assessment of the perceived needs of the Board at a particular point in time. The Nominating Committee establishes procedures for the nomination process, recommends candidates for election to the Board and nominates officers for election by the Board.

Board members also sit on the Investment Policy Committee for Intel's employee retirement plans. This committee also includes Intel management, and is responsible for adopting and amending investment policies as well as selecting and monitoring service providers for the plans. The committee also selects the investment alternatives offered under Intel's 401(k) Savings Plan.

Each director is expected to attend each meeting of the Board and the committees on which he or she serves. In addition to meetings, the Board and its committees review and act upon matters through written consent procedures.

The Board has adopted a set of Guidelines on Significant Corporate Governance Issues, and the Board's Corporate Governance Committee is responsible for overseeing the Guidelines and reporting and making recommendations to the Board concerning corporate governance matters. The Guidelines are published on the Internet at *www.intel.com/intel/finance/corp_gov.htm.* Among other matters, the Guidelines include the following:

- A substantial majority of the members of the Board are independent directors, as defined in the applicable rules for NASDAQ*-traded issuers. Independent directors do not receive consulting, legal or other fees from Intel other than Board compensation. Because it is not possible to anticipate or explicitly categorize all potential conflicts of interest that may affect independence, the Board is also responsible to affirmatively determine that each independent director has no other material relationship with Intel or its affiliates or any executive officer of Intel or his or her affiliates. A relationship will be considered "material" if in the judgment of the Board it would interfere with the director's independent judgment.
- Members of the Board must act at all times in accordance with the requirements of Intel's Corporate Business Principles, which are applicable to each director in connection with his or her activities relating to Intel. This obligation includes adherence to Intel's policies with respect to conflicts of interest, confidentiality, protection of Intel's assets, ethical conduct in business dealings, and respect for and compliance with applicable law. Any waiver of the requirements of the Corporate Business Principles with respect to any individual director is reported to, and subject to the approval of, the Board of Directors.
- Directors stand for reelection every year. Independent directors may not stand for reelection after age 72, and employee directors, other than former Chief Executive Officers, may not stand for reelection after age 65.
- The Board's general policy, based on experience, is that the positions of Chairman of the Board and Chief Executive Officer should be held by separate persons as an aid in the Board's oversight of management.
- The Board appoints members of Board committees.
- The Audit, Compensation, Corporate Governance and Nominating Committees consist entirely of independent directors.
- At least annually, the Board reviews Intel's strategic long-range plan, business unit initiatives, capital projects and budget matters.
- The Board has established the position of Lead Independent Director, which is currently held by Dr. Yoffie. Independent directors meet on a regular basis apart from other Board members and

management representati[redacted]nd the Lead Independent Director is re[redacted]sible for setting the agenda and running the meetings.

- At least annually, the Board evaluates the performance of the Chief Executive Officer and other senior management personnel.
- The Chief Executive Officer periodically reports to the Board on succession planning and management development.
- The Board has a process whereby the Board and its members are subject to periodic self-evaluation and self-assessment.
- Incentive compensation plans for executives link pay directly and objectively to measured financial goals set in advance by the Compensation Committee.

ITEM 2. PROPERTIES

At December 28, 2002, we owned the major facilities described below:

No. of Bldgs.	Location	Total Sq. Ft.	Use
121	United States	27,130,000	Executive and administrative offices, wafer fabrication, research and development, sales and marketing, computer and service functions, e-Commerce data center services, boards and systems manufacturing, and warehousing.
8	Ireland	2,919,000	Wafer fabrication, warehousing and administrative offices.
15	Israel *(A)*	1,909,000	Wafer fabrication, research and development, warehousing and administrative offices.
12	Malaysia *(B)*	1,824,000	Components assembly and testing, boards and systems manufacturing, research and development, warehousing and administrative offices.
5	Philippines *(C)*	1,518,000	Components assembly and testing, warehousing and administrative offices.
4	Costa Rica	863,000	Components assembly and testing, warehousing and administrative offices.
4	People's Republic of China *(D)*	685,000	Components assembly and testing, research and development and administrative offices.
1	India	200,000	Sales and marketing, research and development and administrative offices.
1	United Kingdom	175,000	Sales and marketing and administrative offices.
3	Japan	158,000	Sales and marketing and administrative offices.
1	Germany	80,000	Sales and marketing and administrative offices.

(A) A lease on a portion of the land used for these facilities expires in 2039.

(B) Leases on portions of the land used for these facilities expire in 2003 through 2057.

(C) Leases on portions of the land used for these facilities expire in 2008 through 2046.

(D) A lease on a portion of the land used for these facilities expires in 2046.

As of December 28, 2002, we also leased 70 major facilities in the United States totaling approximately 2,956,000 square feet and 49 facilities in other countries totaling approximately 1,912,000 square feet. These leases expire at varying dates through 2021 and include renewals at our option. Leased facilities decreased in 2002, primarily due to the expiration or termination of leases on facilities no longer needed. We are seeking to sublease approximately 1 million square feet of building space and to dispose of our former manufacturing facility in Puerto Rico. We believe that our existing facilities are suitable and adequate for our present purposes, and that, except as we have discussed above, the productive capacity in such facilities is substantially being utilized or we have plans to utilize it. We also have approximately 433,000 square feet of building space in the United States and approximately 1,688,000 square feet of building space in various international sites under various stages of construction for manufacturing, assembly and test, and administrative purposes. For information regarding environmental proceedings related to certain facilities, see the information under the heading "Legal Proceedings" in Part I, Item 3 of this Form 10-K.

We do not identify or allocate assets or depreciation by operating segment. Information on net property, plant and equipment by country is included under the heading "Note 21: Operating Segment and Geographic Information" in Part II, Item 8 of this Form 10-K.

ITEM 3. LEGAL PROCEEDINGS

A. Litigation

We currently are a party to various legal proceedings, including those noted below. While management currently believes that the ultimate outcome of these proceedings, individually and in the aggregate, will not have a material adverse effect on our financial position or overall trends in results of operations, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. An unfavorable ruling could include money damages or an injunction prohibiting Intel from selling one or more products. Were an unfavorable ruling to occur, there exists the possibility of a material adverse impact on the net income of the period in which the ruling occurs, or future periods.

Intergraph Corporation v. Intel
U.S. District Court, Northern District of Alabama, Northeastern Division
U.S. District Court, Eastern District of Texas

In November 1997, Intergraph Corporation filed suit in Federal District Court in Alabama, generally alleging that Intel attempted to coerce Intergraph into relinquishing certain patent rights and that Intel infringed five Intergraph microprocessor-related patents. This suit included alleged violations of antitrust laws and various state law claims.

In August 2001, Intergraph filed a second suit in the U.S. District Court for the Eastern District of Texas, alleging that the Intel® Itanium® processor infringes two Intergraph microprocessor-related patents, and seeking an injunction and unspecified damages.

In April 2002, Intel and Intergraph announced that they entered into a settlement agreement, pursuant to which they agreed to settle the Alabama lawsuit and dismiss it with prejudice. Pursuant to the settlement agreement, Intel made a cash payment of $300 million to Intergraph and in return received a license under all Intergraph patents and patent applications filed before April 4, 2012, excluding the patents at issue in the Texas case. Intel has also obtained ownership of 15 Intergraph patents and a general release covering all matters in controversy in the Alabama case.

In October 2002, the Texas court ruled that Intel infringed both patents at issue in that case, and the Texas court has declined to reconsider its decision. Pursuant to the settlement agreement, Intel paid Intergraph a further $150 million. Intel plans to appeal the trial court's decision, and if Intel prevails on appeal, no further payments will be due to Intergraph under the settlement agreement. However, if Intergraph prevails on either patent, the settlement agreement provides that Intel must pay Intergraph an additional $100 million and will receive a license for the patents at issue in the case.

Edward Harris, et al v. Intel Corporation, et al
U.S. District Court, Northern California

In May 2000, various plaintiffs filed a class-action lawsuit in the United States District Court for the Northern District of California, alleging violations of the Securities Exchange Act of 1934 and SEC Rule 14d-10 in connection with Intel's acquisition of DSP Communications, Inc. The complaint alleges that Intel and CWC (Intel's wholly owned subsidiary at the time) agreed to pay certain DSP executives additional consideration of $15.6 million not offered or paid to other stockholders. The alleged purpose of this payment to the insiders was to obtain DSP executives' endorsement of Intel's tender offer in violation of the anti-discrimination provision of Section 14(d)(7) and Rule 14d-10. The plaintiffs seek unspecified damages for the class, and unspecified costs and expenses. In July 2002, the District Court granted Intel's motion for summary judgment, but in October 2002, the District Court vacated the summary judgment. In February 2003, the parties reached a tentative settlement agreement pending court review and approval. The settlement is not expected to have a material impact on the company's results of operations or financial condition.

VIA [redacted]ologies, Inc. and Centaur Technology, Inc[redacted]ntel
U.S. District Court, Western District of Texas

In September 2001, VIA Technologies, Inc. and Centaur Technology, Inc. sued Intel in the United States District Court for the Western District of Texas, alleging that the Intel® Pentium® 4 processor infringes a VIA microprocessor-related patent. In October 2001, Intel filed counterclaims against VIA, asserting that VIA's C3* microprocessors infringe Intel patents. In January 2002, VIA amended its complaint to allege that Intel's Pentium® II, Pentium® III, Celeron® and Pentium® 4 processors infringe another patent. In August 2002, Intel added an additional claim that VIA's C3 microprocessors infringe an additional Intel patent, and VIA added an additional claim that Intel's Pentium III and Pentium 4 processors infringe another VIA patent. The trial is set for April 7, 2003. VIA seeks an injunction to prohibit Intel from selling the above-mentioned Intel microprocessors, as well as damages in an unspecified amount covering past sales of such Intel products. Intel seeks an injunction against VIA to prohibit VIA from selling the above-mentioned VIA microprocessors, as well as damages in an unspecified amount covering past sales of such VIA products. Intel disputes the plaintiffs' claims and intends to defend the lawsuit vigorously.

In re Intel Corporation Securities Litigation (Consolidated), U.S. Dist. Ct., Northern Calif.
Dr. Jayant S. Patel, et al. v. Gordon Moore, et al., Calif. Superior Ct., Santa Clara County
Howard Lasker, et al. v. Gordon Moore, et al., Del. Chancery Ct., New Castle County

In September, October and November 2001, various plaintiffs filed five class-action lawsuits against Intel alleging violations of the Securities Exchange Act of 1934. The five complaints were consolidated in an amended complaint filed in the U.S. District Court for the Northern District of California. The amended complaint alleges that purchasers of Intel stock between July 19, 2000 and September 29, 2000 were misled by false and misleading statements by Intel and certain of its officers and directors concerning the company's business and financial condition. In October 2002, the U.S. District Court granted Intel's motion to dismiss the amended complaint without prejudice, and the plaintiffs filed a second amended complaint in November 2002.

In addition, various plaintiffs filed stockholder derivative complaints in California Superior Court and Delaware Chancery Court against the company's directors and certain officers, alleging that they mismanaged the company and otherwise breached their fiduciary obligations to the company. In May 2002, the California Superior Court sustained Intel's demurrer to the California complaint and granted plaintiffs leave to file an amended complaint, which they then filed. The company filed a demurrer to the amended complaint, which the court sustained without prejudice to the plaintiffs filing a third amended complaint, which the plaintiffs have filed. All complaints seek unspecified damages. The company disputes the plaintiffs' claims and intends to defend the lawsuits vigorously.

Deanna Neubauer et al. v. Intel Corporation, Gateway Inc., Hewlett-Packard Co. and HPDirect, Inc.,
Third Judicial Circuit Court, Madison County, Illinois

In June 2002, various plaintiffs filed a lawsuit in the Third Judicial Circuit Court, Madison County, Illinois against Intel, Hewlett-Packard Co., HPDirect, Inc. and Gateway Inc., alleging that defendants' advertisements and statements misled the public by suppressing and concealing the alleged material fact that systems that use the Intel Pentium 4 processor are less powerful and slower than systems using the Intel Pentium III processor and a competitor's processors. The plaintiffs claim that their lawsuit should be treated as a nationwide class action. The plaintiffs seek unspecified damages and attorneys' fees and costs. The company disputes the plaintiffs' claims and intends to defend the lawsuit vigorously.

B. Environmental Proceedings

Intel has been named to the California and U.S. Superfund lists for three of our sites and has completed, along with two other companies, a Remedial Investigation/Feasibility study with the U.S. Environmental Protection Agency (EPA) to evaluate the groundwater in areas adjacent to one of our former sites. The EPA has issued a Record of Decision with respect to a groundwater cleanup plan at that site, including expected costs to complete. Under the California and U.S. Superfund statutes, liability for cleanup of this site and the adjacent area is joint and several. The company, however, has reached agreement with those same two

companies that significantly limit the company's liabilities under the proposed cleanup plan. Also, the company has completed extensive studies at our other sites and is engaged in cleanup at several of these sites. In the opinion of management, the potential losses to the company in excess of amounts already accrued arising out of these matters would not have a material adverse effect on the company's financial position or overall trends in results of operations, even if joint and several liability were to be assessed.

The estimate of the potential impact on the financial position or overall results of operations for the above legal and environmental proceedings could change in the future.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

None.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

The information regarding market, market price range and dividend information may be found in "Financial Information by Quarter (Unaudited)" in Item 8 on page 78 of this Form 10-K. Additional information concerning dividends may be found in the following sections of this Form 10-K: "Selected Financial Data" in Item 6 and "Consolidated Statements of Cash Flows" and "Consolidated Statements of Stockholders' Equity" in Item 8.

As of February 21, 2003, there were approximately 240,000 registered holders of record of Intel's common stock.

ITEM 6. SELECTED FINANCIAL DATA

Ten Years Ended December 28, 2002

(In Millions)	Net Revenue	Gross Margin	Research & Development	Purchased In-Process Research & Development	Amortization of Goodwill	Amortization and Impairment of Acquisition-Related Intangibles and Costs	Operating Income
2002	$26,764	$13,318	$4,034	$ 20	—	$548	$ 4,382
2001	$26,539	$13,052	$3,796	$198	$1,710	$628	$ 2,256
2000	$33,726	$21,076	$3,897	$109	$1,310	$276	$10,395
1999	$29,389	$17,553	$3,111	$392	$ 307	$104	$ 9,767
1998	$26,273	$14,185	$2,509	$165	$ 17	$ 39	$ 8,379
1997	$25,070	$15,125	$2,347	—	—	—	$ 9,887
1996	$20,847	$11,683	$1,808	—	—	—	$ 7,553
1995	$16,202	$ 8,391	$1,296	—	—	—	$ 5,252
1994	$11,521	$ 5,945	$1,111	—	—	—	$ 3,387
1993	$ 8,782	$ 5,530	$ 970	—	—	—	$ 3,392

(In Millions—Except Per Share Amounts)	Net Income	Basic Earnings Per Share[1]	Diluted Earnings Per Share[2]	Weighted Average Diluted Shares Outstanding	Dividends Declared Per Share	Dividends Paid Per Share
2002	$ 3,117	$ .47	$ .46	6,759	$.080	$.080
2001	$ 1,291	$ .19	$ .19	6,879	$.080	$.080
2000	$10,535	$1.57	$1.51	6,986	$.070	$.070
1999	$ 7,314	$1.10	$1.05	6,940	$.055	$.055
1998	$ 6,068	$ .91	$ .86	7,035	$.025	$.033
1997	$ 6,945	$1.06	$ .97	7,179	$.029	$.028
1996	$ 5,157	$ .78	$ .73	7,101	$.024	$.023
1995	$ 3,566	$ .54	$ .50	7,072	$.019	$.018
1994	$ 2,288	$ .34	$ .33	6,992	$.014	$.014
1993	$ 2,295	$ .34	$ .33	7,056	$.013	$.013

(In Millions—Except Employees)	Net Investment In Property, Plant & Equipment	Total Assets	Long-Term Debt & Put Warrants	Stock-holders' Equity	Additions to Property, Plant & Equipment	Employees At Year-End (In Thousands)
2002	$17,847	$44,224	$ 929	$35,468	$4,703	78.7
2001	$18,121	$44,395	$1,050	$35,830	$7,309	83.4
2000	$15,013	$47,945	$ 707	$37,322	$6,674	86.1
1999	$11,715	$43,849	$1,085	$32,535	$3,403	70.2
1998	$11,609	$31,471	$ 903	$23,377	$4,032	64.5
1997	$10,666	$28,880	$2,489	$19,295	$4,501	63.7
1996	$ 8,487	$23,735	$1,003	$16,872	$3,024	48.5
1995	$ 7,471	$17,504	$1,125	$12,140	$3,550	41.6
1994	$ 5,367	$13,816	$1,136	$ 9,267	$2,441	32.6
1993	$ 3,996	$11,344	$1,114	$ 7,500	$1,933	29.5

[1] *Amortization of goodwill reduced basic earnings per share in 2001 by $0.23 ($0.19 in 2000 and $0.05 in 1999). Goodwill is no longer amortized, beginning in 2002.*

[2] *Amortization of goodwill reduced diluted earnings per share in 2001 by $0.22 ($0.18 in 2000 and $0.05 in 1999).*

In addition, the ratio of earnings to fixed charges for each of the five years in the period ended December 28, 2002 were as follows:

Fiscal Year				
1998	1999	2000	2001	2002
167x	166x	171x	18x	32x

Fixed charges consist of interest expense and the estimated interest component of rent expense.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following section should be read in conjunction with Item 1: Business; Item 6: Selected Financial Data; and Item 8: Financial Statements and Supplementary Data.

The "Strategy," "Critical Accounting Estimates" and "Outlook" sections all contain a number of forward-looking statements, all of which are based on our current expectations. Our actual results may differ materially, and these forward-looking statements do not reflect the potential impact of any divestitures, mergers, acquisitions or other business combinations that had not closed as of March 5, 2003.

Strategy

Our goal is to be the preeminent building block supplier to the worldwide Internet economy. Focusing on our core competencies in the design and manufacture of integrated circuits, as well as our expertise in digital computing and communications, we believe we are well positioned to drive the convergence of computing and communications through silicon integration. We focus on developing advanced technology solutions tailored to meet user requirements in specific settings, providing the features people want in their homes, at work and at play. We also provide key components for the networking and communications infrastructure needed to connect technology users. Each of our operating segments uses its core competencies, as well as key silicon architectures, to provide building blocks for technology solutions. The Intel Architecture business provides the advanced technologies to support the desktop, mobile and enterprise platforms. Our Wireless Communications and Computing Group (WCCG) focuses on component-level products and solutions for the wireless handheld communications market. Finally, our Intel Communications Group (ICG) focuses on wired and wireless connectivity products and provides key components for networking and communications infrastructure devices.

All of our businesses operate in highly innovative environments characterized by continuing and rapid introduction of new products offering improved performance at lower prices. As part of our overall strategy, we use our core competencies, financial strength and global presence to compete vigorously in each relevant market segment. Our competition comes from established businesses as well as new entrants to the marketplace. With the trend toward convergence in computing and communications products, product offerings will likely cross over into multiple categories, offering us new opportunities, but also resulting in more businesses that compete with us. Competition tends to increase pricing pressure on our products, which may mean that we must offer our products at lower prices than we had anticipated, resulting in lower profits. Because some of our competitors already have established products and product designs, it is inherently difficult for us to compete against them. In addition, certain market segments in which we compete, such as networking and telecommunications products, have experienced an overall economic decline, increasing the degree of competition within these market segments. When we believe it is appropriate, we will take various steps, including introducing new products and discontinuing older products, reducing prices, and offering rebates and other incentives in order to increase acceptance of our latest products and to be competitive within each relevant market segment.

We plan to continue to cultivate new businesses and work with the computing and communications industry to expand product offerings and Internet capabilities, including the infrastructure for wireless access, and develop compelling software applications and operating systems designed to take advantage of our higher performance microprocessors and chipsets as well as our other next-generation semiconductor components.

Intel Architecture Business

The Intel Architecture business supports the desktop, mobile and enterprise platforms. For the desktop platform, our strategy is to introduce ever-higher performance microprocessors and chipsets, tailored for the different market segments of the worldwide computing market, using a tiered branding approach. For the mobile platform, our strategy is to deliver products optimized for the four mobility vectors: performance, battery life, form factor and wireless capability. The desktop and mobile platforms are based on the IA-32 architecture, which currently includes both the Intel® NetBurst™ and the P6 microarchitectures. Our strategy for the enterprise platform is to provide high-performance processors and the best price for performance across the entire range of server and workstation market segments.

For the desktop performance market segment, we offer the Intel® Pentium® 4 processor, based on the Intel NetBurst microarchitecture, focused on both home and business applications. These processors are optimized to deliver high performance across a broad range of business and consumer applications, especially the latest technologies in web, interactive 3D, and streaming video and audio environments. These processors also enhance the user's experience in many applications, such as e-Learning, Internet browsing and computer gaming. Also for the performance desktop, we offer the Pentium 4 Processor with HT Technology. Hyper-Threading Technology, when used in a computer system with the other features required to take advantage of this technology, allows a multithreaded software program to run as though it uses two processors, even though it uses only one processor. For the desktop value market segment, we offer the Intel® Celeron® processor, designed to meet the core computing needs and affordability requirements of some value-conscious PC users.

For the mobile market segment, we offer processors optimized for full size, thin and light, and ultra-portable notebook PCs. In March 2003, we plan to introduce products based on the Intel® Centrino™ mobile technology, our first computing technology designed and optimized specifically to maximize the wireless computing experience for mobile PC users. Intel Centrino mobile technology is a combination of a new Intel® Pentium® M processor with the related Intel® chipset and 802.11-based wireless networking technology. We also offer the Mobile Intel® Pentium® 4 Processor-M, enabling users to take full advantage of processing-intensive applications on a laptop PC, as well as the Intel Celeron processor for the mobile value market segment.

To increase acceptance and deployment of our mobile products, we are focused on initiatives designed to support technologies addressing wireless solutions, software enabling, security and extended battery life for mobile PCs. We also work with standards bodies, trade associations, original equipment manufacturers (OEMs) and independent software vendors to align the industry, our customers and end users, thereby increasing acceptance of both our desktop and mobile platforms.

The Intel Architecture business also supports the enterprise platform with the Intel® Xeon™ processor family, based on the Intel NetBurst microarchitecture, for workstations and mid-range to high-end servers, and the Intel® Itanium® processor family for enterprise-class servers. The Intel Xeon processor is offered with HT Technology and is aimed at two-way servers and workstations, and we also offer the Intel Xeon processor MP for servers based on four or more processors. In 2002 we began shipping the Intel® Itanium® 2 processor, designed for handling high transaction volumes, complex transactions and other data-intensive computing applications. As the technology industry develops operating systems and software with capabilities to address growing data traffic management, storage, computing and communications needs, and as traditional computing and telecommunications converge, we believe that there will be increased demand for our higher performance enterprise platform products. We also anticipate that the convergence of computing and communications will create new opportunities for server components (such as components for blade servers used in data centers) in new and existing communications market segments.

Wireless Communications and Computing Group

Within WCCG, our strategy is to deliver complete solutions that enable quick deployment of applications and services for wireless Internet and handheld computing devices. The Intel® Personal Internet Client Architecture (Intel® PCA), an open architecture platform that describes the communication and application subsystems for data-enabled cellular phones and portable handheld devices, is a very important part of our

WCCG strategy. We expect that the Intel PCA scalable platform will speed application development and allow faster time-to-market for our customers. For the handheld platform, our current products include Intel® Flash memory, processors based on the Intel® XScale™ microarchitecture, and cellular baseband chipsets. The Intel XScale technology provides the processing capability in Personal Digital Assistants as well as other types of handheld devices such as Personal Video Players and Smart Displays. We are working toward the convergence of computing and communications in this market segment by developing technology for mobile handheld clients that combines baseband communication features with memory and applications processing functionality. In February 2003, we announced our first "wireless-Internet-on-a-chip" cellular processor, which will integrate these three functions.

Intel Communications Group

Within ICG, our strategy is to be the leading supplier of silicon and integrated networking and communications building blocks for OEMs. We are developing products that focus on technologies that we believe are essential to build out the Internet: Ethernet connectivity products, including products designed for wireless applications, optical products and network processing components. Our strategy for Ethernet connectivity is to expand our product portfolio in the local area network (LAN) market segment and to address the emerging metropolitan area network (MAN) and networked storage market segments. Within the LAN market segment, we are investing in Gigabit Ethernet and 10-Gigabit Ethernet technologies, and wireless technologies based on the 802.11 industry standards. In the networked storage market segment, we are developing products designed to allow storage resources to be added to any location on either of the two most prevalent types of storage networks: Ethernet or Fibre Channel. For the optical market segment, our strategy is to deliver products based on industry standards, including Ethernet and data transport standards in the telecommunications industry (SONET/SDH). We are providing 10-Gigabit optical products at multiple levels of integration with decreased power consumption and increased signal transmission capability. In network processing, we deliver products that are basic building blocks for modular networking infrastructure. These products include advanced, programmable processors used to manage and direct data moving across the Internet and corporate networks. The transition to our 90-nanometer manufacturing process is a key factor in our execution of these strategies. The 90-nanometer manufacturing process is expected to enable many of our communications products to feature "mixed-signal" circuitry and high-speed transistors, aimed at creating a new generation of faster, more integrated, less costly communications chips. As we transition to this new process, we expect to build more of our communications products internally. Currently, a substantial portion of ICG's manufacturing is performed by third-party foundry manufacturers.

Critical Accounting Estimates

The methods, estimates and judgments we use in applying our accounting policies have a significant impact on the results we report in our financial statements. Some of our accounting policies require us to make difficult and subjective judgments, often as a result of the need to make estimates of matters that are inherently uncertain. Our most critical accounting estimates include the assessment of recoverability of goodwill, which impacts write-offs of goodwill; valuation of non-marketable equity securities, which impacts gains (losses) on equity securities when we record impairments; valuation of inventory, which impacts gross margin; assessment of recoverability of long-lived assets, which primarily impacts gross margin when we impair assets or accelerate their depreciation; and recognition and measurement of current and deferred income tax assets and liabilities, which impacts our tax provision. Below, we discuss these policies further, as well as the estimates and judgments involved. We also have other policies that we consider to be key accounting policies, such as our policies for revenue recognition, including the deferral of revenues on sales to distributors; however, these policies do not meet the definition of critical accounting estimates because they do not generally require us to make estimates or judgments that are difficult or subjective.

Goodwill. In conjunction with the implementation of the new accounting rules for goodwill as of the beginning of 2002, we completed a goodwill impairment review for the reporting units that have substantially all of our recognized goodwill: ICG and WCCG. According to our accounting policy, we also performed an annual review during the fourth quarter of 2002, and in both reviews we found no impairment. We will perform a

similar review in the fourth quarter of each year, or more frequently if indicators of potential impairment exist. Our impairment review process is based on a discounted future cash flow approach that uses our estimates of revenue for the reporting units, driven by assumed market growth rates and assumed market segment share, and estimated costs as well as appropriate discount rates. These estimates are consistent with the plans and estimates that we use to manage the underlying businesses. The estimates we used assume that we will gain market segment share in the future and that the communications businesses will experience a gradual recovery and a return to growth from the current trends. We may incur charges for impairment of goodwill in the future if the communications sector does not recover as we expect, if we fail to deliver new products for these groups, if the products fail to gain expected market acceptance, if we fail to achieve our assumed revenue growth rates or assumed gross margin, or if interest rates increase significantly.

Non-Marketable Equity Securities. At December 28, 2002, the carrying value of our portfolio of strategic investments in non-marketable equity securities, excluding equity derivatives, totaled $730 million. Our ability to recover our investments in private, non-marketable equity securities and to earn a return on these investments is primarily dependent on how successfully these companies are able to execute to their business plans and how well their products are accepted, as well as their ability to obtain venture capital funding to continue operations and to grow. In the current equity market environment, their ability to obtain additional funding as well as to take advantage of liquidity events, such as initial public offerings, mergers and private sales, is significantly constrained.

Under our accounting policy, the carrying value of a non-marketable investment is the amount paid for the investment unless it has been determined to be other than temporarily impaired, in which case we write the investment down to its impaired value. We review all of our investments periodically for impairment; however, for non-marketable equity securities, the impairment analysis requires significant judgment. This analysis includes assessment of each investee's financial condition, the business outlook for its products and technology, its projected results and cash flows, the likelihood of obtaining subsequent rounds of financing and the impact of any relevant contractual equity preferences held by Intel or others. If an investee obtains additional funding at a valuation lower than our carrying amount, we presume that the investment is other than temporarily impaired, unless specific facts and circumstances indicate otherwise, for example if we hold contractual rights that give us a preference over the rights of other investors. As the equity markets have declined significantly over the past two years, we have experienced substantial impairments in our portfolio of non-marketable equity securities. If equity market conditions do not improve, as companies within our portfolio attempt to raise additional funds, the funds may not be available to them, or they may receive lower valuations, with more onerous investment terms than in previous financings, and the investments will likely become impaired. However, we are not able to determine at the present time which specific investments are likely to be impaired in the future, or the extent or timing of individual impairments. During 2002, we recorded impairments of non-marketable equity investments of $510 million ($448 million in 2001).

Inventory. Our policy for valuation of inventory, including the determination of obsolete or excess inventory, requires us to estimate the future demand for our products within specific time horizons, generally six months or less. The estimates of future demand that we use in the valuation of inventory are the basis for our published revenue forecast, which is also consistent with our short-term manufacturing plan. If our demand forecast for specific products is greater than actual demand and we fail to reduce manufacturing output accordingly, we could be required to record additional inventory reserves, which would have a negative impact on our gross margin.

Long-Lived Assets. We assess the impairment of long-lived assets when events or changes in circumstances indicate that the carrying value of the assets or the asset grouping may not be recoverable. Factors we consider in deciding when to perform an impairment review include significant under-performance of a business or product line in relation to expectations, significant negative industry or economic trends, and significant changes or planned changes in our use of the assets. Recoverability of assets that will continue to be used in our operations is measured by comparing the carrying amount of the asset grouping to the related total future net cash flows. If an asset grouping's carrying value is not recoverable through those cash flows, the asset grouping is considered to be impaired. The impairment is measured by the difference between the assets' carrying

amount and their fair value, based on the best information available, including market prices or discounted cash flow analysis.

Due to our asset usage model and the fungible nature of our semiconductor manufacturing capacity, we must make subjective judgments in determining the asset groupings and the related independent cash flows for the asset recoverability test. In addition, as we make manufacturing process conversions and other factory planning decisions, we must make subjective judgments regarding the remaining useful lives of assets, primarily process-specific semiconductor manufacturing tools and building improvements. When we determine that the useful lives of assets are shorter than we had originally estimated, and there are sufficient cash flows to support the carrying value of the assets, we accelerate the rate of depreciation charges in order to fully depreciate the assets over their new, shorter, useful lives.

Income Taxes. In determining income for financial statement purposes, we must make certain estimates and judgments. These estimates and judgments occur in the calculation of certain tax liabilities and in the determination of the recoverability of certain of the deferred tax assets, which arise from temporary differences between the tax and financial statement recognition of revenue and expense.

We must assess the likelihood that we will be able to recover our deferred tax assets. If recovery is not likely, we must increase our provision for taxes by recording a reserve, in the form of a valuation allowance, for the deferred tax assets that we estimate will not ultimately be recoverable. As of December 28, 2002, we believe that all of our recorded deferred tax assets will ultimately be recovered. However, should there be a change in our ability to recover our deferred tax assets, our tax provision would increase in the period in which we determine that the recovery is not probable.

In addition, the calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize potential liabilities for anticipated tax audit issues in the U.S. and other tax jurisdictions based on our estimate of whether, and the extent to which, additional taxes will be due. If payment of these amounts ultimately proves to be unnecessary, the reversal of the liabilities would result in tax benefits being recognized in the period when we determine the liabilities are no longer necessary. If our estimate of tax liabilities proves to be less than the ultimate assessment, a further charge to expense would result.

Results of Operations

The following table sets forth certain consolidated statements of income data as a percentage of net revenue for the periods indicated:

	2002	2001	2000
Net revenue	**100.0%**	**100.0%**	**100.0%**
Cost of sales	50.2%	50.8%	37.5%
Gross margin	**49.8%**	**49.2%**	**62.5%**
Research and development	15.1%	14.3%	11.6%
Marketing, general and administrative	16.2%	16.8%	15.1%
Amortization of goodwill	—	6.5%	3.9%
Amortization and impairment of acquisition-related intangibles and costs	2.0%	2.4%	0.8%
Purchased in-process research and development	0.1%	0.7%	0.3%
Operating income	**16.4%**	**8.5%**	**30.8%**

Consolidated Revenue and Gross Margin

For 2002, our net revenue of $26.8 billion was approximately flat compared to 2001, as we still have not seen a significant recovery in the overall technology industry. Increased net revenue in the Intel Architecture business was offset by significantly lower net revenue for ICG. Net revenue for WCCG was flat with 2001. On a geographic basis, significant revenue growth in the Asia-Pacific region offset revenue declines in other regions.

Our gross margin percentage in 2002 was approximately flat at 49.8% compared to 49.2% in 2001. The Intel Architecture business's gross margin percentage was also relatively flat in 2002 compared to 2001. WCCG experienced a slightly lower gross margin percentage while ICG experienced a slightly higher gross margin percentage. Our gross margin percentage was also negatively impacted by the $106 million charge related to the decision to wind down the web hosting business. See the "Outlook" section below for a discussion of gross margin expectations.

Our 2001 net revenue was 21% below 2000 net revenue, also reflecting a difficult year for the technology industry. Revenue declined across all of our geographies and major product lines as we felt the impact of the worldwide economic slowdown. Our decrease in net revenue came primarily from the Intel Architecture business in the form of significantly lower unit volumes and significantly lower average selling prices of microprocessors. Lower revenue in both WCCG and ICG also contributed to the decline as demand for these products decreased significantly.

Our gross margin percentage decreased significantly to 49.2% in 2001 from 62.5% in 2000, primarily due to lower revenue from sales of microprocessors, including the effect of lower average selling prices and the impact of spreading fixed factory costs over a lower volume. Higher factory start-up costs for the Intel Architecture business also contributed to the decline in the gross margin percentage. The impact of lower sales volume and charges for under-utilized factory capacity in 2001 in WCCG, as well as lower sales in ICG, also lowered the gross margin percentage in 2001 compared to 2000.

Intel Architecture Business

The revenue and operating income for the Intel Architecture operating segment for the three years ended December 28, 2002 were as follows:

(In Millions)	2002	2001	2000
Revenue	$22,316	$21,446	$27,301
Operating income	$ 6,562	$ 6,252	$12,511

The Intel Architecture operating segment consists of the Desktop Platforms Group, the Mobile Platforms Group and the Enterprise Platforms Group. Net revenue for this business increased by $870 million, or 4%, in 2002 compared to 2001. The increase in net revenue was due to significantly higher unit volumes of microprocessors, including microprocessors for the Microsoft Xbox*, as well as higher unit volumes of chipsets and motherboards. The impact of these higher volumes was partially offset by lower average selling prices for microprocessors.

For 2002, the majority of our consolidated net revenue and gross margin came from sales of the Intel Pentium 4 microprocessor and related microprocessors based on the Intel NetBurst microarchitecture, as well as related chipsets and motherboards. Sales of the Intel® Pentium® III microprocessor and related microprocessors based on the P6 microarchitecture, as well as related products, made up a significant but steadily decreasing portion of our consolidated net revenue and gross margin.

Net operating income for the Intel Architecture business increased by $310 million, or 5%, in 2002 compared to 2001. The impacts of significantly higher unit sales of microprocessors and lower start-up costs relating to the 0.13-micron technology manufacturing ramp were partially offset by lower average selling prices and higher unit costs for microprocessors. Results also improved due to higher unit volumes of chipsets and motherboards. Net operating income for 2002 was reduced by a $155 million charge related to the Intergraph

Corporation litigation settlement agreement (see "Note 20: Contingencies" in the Notes to Consolidated Financial Statements).

For 2001, net revenue decreased by $5.9 billion, or 21%, compared to 2000. The decrease in net revenue was primarily due to significantly lower unit volumes and significantly lower average selling prices of microprocessors. The lower selling prices reflected the impact of competitive pricing pressures and our strategy to accelerate the transition from the Pentium III processor to the Pentium 4 processor. For 2001, sales of microprocessors based on the P6 microarchitecture and related products made up the majority of our consolidated net revenue and a substantial majority of our gross margin. For the same period, sales of products based on the Intel NetBurst microarchitecture and related products were a significant and rapidly increasing portion of our consolidated net revenue and gross margin.

Net operating income for the Intel Architecture business decreased by $6.3 billion, or 50%, in 2001 compared to 2000, primarily due to lower average selling prices, lower unit volumes and higher unit costs for microprocessors. Increased start-up costs related to the 0.13-micron manufacturing process technology, which ramped in four factories during 2001, and start-up costs on 300-millimeter wafer manufacturing also contributed to the decline. Lower revenue-dependent expenses and reduced spending due to company-wide cost reduction programs partially offset the decline in net operating results.

Wireless Communications and Computing Group

The revenue and operating income (loss) for the WCCG operating segment for the three years ended December 28, 2002 were as follows:

(In Millions)	2002	2001	2000
Revenue	$2,239	$2,232	$2,669
Operating income (loss)	$ (294)	$ (256)	$ 608

Net revenue was flat from 2001 to 2002. Revenue for flash memory products was slightly lower due to a decrease in average selling prices stemming from competitive pricing pressures, mostly offset by an increase in unit volumes. Revenue on higher volumes of application processors and baseband chipsets partially offset the lower revenue from flash memory products.

The net operating loss increased by $38 million to a loss of $294 million in 2002 compared to a loss of $256 million in 2001. For flash memory products, the impact of lower average selling prices in 2002 was partially offset by the impact of reduced charges for under-utilized factory capacity, lower inventory write-offs and higher volumes compared to 2001. Higher revenue and lower costs for application processors and baseband chipsets offset a portion of the impact of the flash memory products.

For 2001, net revenue decreased by $437 million compared to 2000. The decline was primarily due to significantly lower unit sales of flash memory as the cellular market worked through inventories built up in the latter part of 2000 and lower volumes of flash memory units brought on by the worldwide economic slowdown.

Net operating income decreased by $864 million to a loss of $256 million in 2001 from a profit of $608 million in 2000, primarily due to lower flash memory volume and the impact of charges for under-utilized factory capacity in 2001, as well as higher inventory writedowns in 2001. Higher research and development spending also contributed to the decline.

Intel Communications Group

The revenue and operating income (loss) for the ICG operating segment for the three years ended December 28, 2002 were as follows:

(In Millions)	2002	2001	2000
Revenue	$2,080	$2,580	$3,483
Operating income (loss)	$ (622)	$ (735)	$ 319

Net revenue decreased by $500 million, or 19%, in 2002 compared to 2001, primarily due to lower overall unit volumes for telecommunications-related products, consistent with the decline in industry-wide demand for these products. In addition, net revenue for Ethernet connection products decreased, even as units increased, due to the shift in product mix from adapter cards to LAN on motherboard products. Net revenue also decreased for optical products and microcontrollers.

Despite the decline in net revenue for ICG, net operating results improved, with a loss of $622 million in 2002 compared to a loss of $735 million in 2001. The impact of lower revenue was more than offset by the impact of reduced inventory writedowns in 2002 compared to 2001, as well as lower operating expenses and a shift to higher margin products, including network processing components and Ethernet connection products.

For 2001, net revenue decreased by $903 million, or 26%, compared to 2000, primarily due to significantly lower unit volumes of microcontrollers, network processing components, enterprise infrastructure and telecommunications products, including telecommunications boards, consistent with an industry-wide reduction in demand for these products. The overall revenue decline was partially offset by incremental revenue related to acquisitions completed in 2001.

Net operating results decreased by $1.1 billion to a loss of $735 million in 2001 from a profit of $319 million in 2000, primarily due to the lower unit volumes of microcontrollers, network processing components and telecommunications-related products. Higher research and development spending in 2001 also contributed to the decline, primarily due to the expenses of businesses acquired in 2001 and a full year of expenses for acquisitions made in 2000.

Operating Expenses

Operating expenses for the three years ended December 28, 2002 were as follows:

(In Millions)	2002	2001	2000
Research and development	$4,034	$3,796	$3,897
Marketing, general and administrative	$4,334	$4,464	$5,089
Amortization of goodwill	$ —	$1,710	$1,310
Amortization and impairment of acquisition-related intangibles and costs	$ 548	$ 628	$ 276
Purchased in-process research and development	$ 20	$ 198	$ 109

Research and development spending, which excludes purchased in-process research and development (IPR&D), increased $238 million, or 6%, in 2002 compared to 2001 and decreased $101 million, or 3%, in 2001 compared to 2000. The increase in 2002 compared to 2001 was primarily due to higher spending on development of manufacturing process technologies, including the 90-nanometer process on 300-millimeter wafers. The decrease in 2001 compared to 2000 was primarily due to cost containment efforts, including reductions in discretionary spending on research and development-related travel expenses.

Marketing, general and administrative expenses decreased $130 million, or 3%, in 2002 compared to 2001, primarily due to the impact of lower spending within ICG and for certain new business initiatives as we reduced headcount or exited certain businesses, as well as lower overall discretionary spending related to cost containment programs. The spending decreases were partially offset by higher expenses for the Intel Inside® cooperative advertising program due to higher microprocessor revenue and the impact of our customers using a slightly higher percentage of their available program funds. Marketing, general and administrative expenses decreased $625 million, or 12%, in 2001 compared to 2000, primarily due to decreased cooperative advertising program expenses and profit-dependent bonus expenses, as well as lower discretionary spending as a result of cost reduction programs, partially offset by marketing, general and administrative expenses from companies acquired

Amortization and impairment of acquisition-related intangibles and costs was $548 million in 2002, including impairments of $127 million. Amortization was $628 million in 2001, with $26 million of impairments, and $276 million in 2000. The decrease from 2001 to 2002 was due to certain of the intangibles becoming fully amortized. The increase from 2000 to 2001 was primarily due to the impact of additional acquisitions. Amortization of goodwill was $1.7 billion in 2001, including $98 million of impairments, and $1.3 billion in 2000, with the increase reflecting the impact of additional acquisitions. Goodwill is no longer amortized, beginning in 2002. Amortization of acquisition-related costs for all periods is included in the calculation of the operating loss for the "all other" category for segment reporting purposes.

Gains (Losses) on Equity Securities, Interest and Other, and Taxes

Gains (losses) on equity securities, net, interest and other, net and taxes for the three years ended December 28, 2002 were as follows:

(In Millions)	2002	2001	2000
Gains (losses) on equity securities, net	$ (372)	$(466)	$3,759
Interest and other, net	$ 194	$ 393	$ 987
Provision for taxes	$1,087	$ 892	$4,606

For 2002, net losses on equity securities and certain equity derivatives were $372 million compared to $466 million for 2001. The net loss for 2002 consisted of impairment charges, primarily of non-marketable equity securities, of approximately $524 million, partially offset by net gains of approximately $57 million related to equity trading assets and $110 million of net gains on related equity derivatives. The $57 million net gains included a gain of $120 million, resulting from the designation of formerly restricted equity investments as trading assets as they became marketable. The cumulative difference between their cost and fair market value at the time they became marketable was recorded as a gain in 2002. For 2001, the net loss included impairments of $1.1 billion, partially offset by net gains on transactions of $517 million and mark-to-market gains on trading assets and derivatives of $122 million. The decrease to a net loss of $466 million in 2001 from a net gain of $3.8 billion in 2000 was primarily due to impairments in 2001 compared to gains on sales of appreciated securities in 2000, including a significant gain on the sale of our holdings of Micron Technology, Inc.

Interest and other, net decreased to $194 million in 2002 compared to $393 million in 2001. Interest income was significantly lower in 2002, primarily as a result of lower average interest rates. The difference in interest income between 2002 and 2001 was partially offset by the impact of an impairment charge in 2001 on the company's equity-method investment in Convera Corporation. For 2001 compared to 2000, interest and other, net decreased $594 million due to lower average investment balances and lower interest rates in 2001 compared to 2000, as well as the impact of the Convera impairment charge in 2001.

Our effective income tax rate was 25.9% in 2002, 40.9% in 2001 and 30.4% in 2000. The decrease in the effective rate in 2002 is primarily attributed to a decrease in non-deductible acquisition-related costs, including amortization of goodwill, and tax benefits related to divestitures during 2002, partially offset by a greater portion of our profits being generated in higher tax jurisdictions. The increase in the effective rate in 2001 compared to 2000 is attributed to an increase in non-deductible acquisition-related costs during 2001, partially offset by a $100 million tax benefit related to export sales and a greater portion of our profits generated in lower tax jurisdictions. The effective rate in 2000 benefited from a reversal of previously accrued taxes of $600 million due to resolution of various tax issues. See "Outlook" for a discussion of our income tax rate expectations.

Purchased In-Process Research and Development

During 2002, there were no acquisitions with significant IPR&D. IPR&D increased $89 million to $198 million in 2001 from $109 million in 2000. The following table summarizes the significant assumptions underlying the valuations related to IPR&D from major companies acquired at the time of acquisition in fiscal

2001 and 2000. We believe that the amounts determined for IPR&D represented fair value and did not exceed the amounts an independent party would have paid for these projects at the time of acquisition.

(Dollars in Millions)	IPR&D	Estimated Cost to Complete Technology	Discount Rate Applied to IPR&D	Weighted Average Cost of Capital
2001				
Xircom, Inc.	$53	$ 7	25–55%	22%
VxTel Inc.	$68	$14	25–35%	22%
LightLogic, Inc.	$46	$ 7	25–35%	23%
2000				
GIGA A/S	$52	$12	20%	15%

Included below are further details regarding the technology acquired in these transactions.

2001 Acquisitions. In March, we acquired Xircom, which specialized in PC cards and other products used to connect mobile computing devices to corporate networks and the Internet. Xircom had 20 IPR&D projects, each contributing from 1% to 24% of the total IPR&D value. The in-process projects included the development of next-generation PC card devices for portable computing connectivity that support various computing standards. These projects ranged from 5% to 86% complete. All projects had expected completion dates in 2001 at the time of acquisition. Expected completion dates for three projects representing 30% of the total IPR&D value were revised to 2002 with one being completed in 2002. The remaining two projects representing 29% of the total IPR&D value have revised completion dates in early 2003. Nine additional projects representing 33% of the total IPR&D value were cancelled in 2001 in order to focus on strategic projects, including the next generation of current products. Xircom's remaining projects were completed as scheduled.

In April, we acquired VxTel, which designed signal and packet processing silicon and system-level solutions that form the foundation for next-generation optical networks. VxTel had two IPR&D projects, with its digital signal processor project accounting for 89% of the total IPR&D value. The project was 84% complete at the time of acquisition and was completed in 2001.

In May, we acquired LightLogic, which designed advanced opto-electronic modules for next-generation optical communications systems. LightLogic had four IPR&D projects, each contributing from 8% to 52% of the total IPR&D value. These projects ranged from 40% to 80% complete and had expected completion dates in 2001 at the time of acquisition. Two projects were completed in 2001, and the remaining projects were completed in 2002.

2000 Acquisition. In March, we acquired GIGA. GIGA specialized in the design of advanced, high-speed communications chips used in optical networking and communications products that direct traffic across the Internet and corporate networks. One project accounted for 73% of the IPR&D value and was approximately 61% complete at the time of acquisition. This project was completed on schedule in 2000.

Financial Condition

Our financial condition remains strong. At December 28, 2002, cash, short-term investments and debt instruments included in trading assets totaled $12.2 billion, up from $11.2 billion at December 29, 2001. At December 28, 2002, total short-term and long-term debt was $1.4 billion and represented 4% of stockholders' equity. At December 29, 2001, total debt was $1.5 billion and also represented 4% of stockholders' equity. At the end of 2002, we had future operating lease obligations not included on our balance sheet totaling $504 million, primarily related to facilities. In addition, at the end of 2002, we had contractual obligations not included on our balance sheet of $2.0 billion for the purchase or construction of property, plant and equipment and $75 million for acquisition-related deferred cash compensation. See "Outlook" for a discussion of capital expenditure expectations for 2003.

For 2002, cash provided by operating activities was $9.1 billion, compared to $8.8 billion in 2001 and $12.8 billion in 2000. Cash was provided by net income adjusted for non-cash related items. Decreases in accounts payable, as we lowered our overall spending in 2002, were offset by increases in compensation accruals and taxes payable, and inventory and receivables were relatively flat. For 2002, our three largest customers accounted for approximately 38% of net revenue, with one of these customers accounting for approximately 16% of revenue and another accounting for approximately 15%. At December 28, 2002, these three largest customers accounted for approximately 39% of net accounts receivable.

We used $5.8 billion in net cash for investing activities during 2002, compared to $330 million during 2001 and $10.0 billion during 2000. The increase in cash used for investing activities compared to 2001 reflected net sales and maturities of available-for-sale investments in 2001 as we shifted our portfolio of investments in debt securities to shorter term maturities and a larger portion of the portfolio was classified as cash equivalents. At the same time, capital expenditures decreased to $4.7 billion in 2002 as we continued to invest in property, plant and equipment, primarily for additional microprocessor manufacturing capacity, but at a lower rate than in the prior two years. Capital expenditures were $7.3 billion in 2001 and $6.7 billion in 2000. In addition, the net cash paid for acquisitions decreased to approximately $57 million in 2002 ($883 million in 2001 and $2.3 billion in 2000).

We used $3.9 billion in net cash for financing activities in 2002, relatively flat compared to prior years. The major financing uses of cash in all three years were for the repurchase of shares and payment of dividends. In 2002, we purchased 183 million shares of common stock for $4.0 billion (also $4.0 billion in 2001 and 2000). Payment of dividends was $533 million in 2002 ($538 million in 2001 and $470 million in 2000). Financing sources of cash during 2002 were primarily $681 million in proceeds from the sale of shares pursuant to employee stock plans ($762 million in 2001 and $797 million in 2000).

Another potential source of liquidity is authorized borrowings, including commercial paper, of $3.0 billion. Maximum borrowings under our commercial paper program during 2002 were approximately $240 million, although no commercial paper was outstanding at the end of the period. We also maintain the ability to issue an aggregate of approximately $1.4 billion in debt, equity and other securities under U.S. Securities and Exchange Commission shelf registration statements.

We believe that we have the financial resources needed to meet business requirements for the next 12 months, including capital expenditures for the expansion or upgrading of worldwide manufacturing capacity, working capital requirements, the dividend program and potential future acquisitions or strategic investments.

Employee Stock Options

Our stock option program is a broad-based, long-term retention program that is intended to attract and retain talented employees and align stockholder and employee interests. The program currently consists of two plans: one under which officers, key employees and non-employee directors may be granted options to purchase shares of our stock, and a broad-based plan under which options may be granted to all employees other than officers and directors. Substantially all of our employees participate in one of the plans. Options granted by the company expire no later than 10 years from the grant date and generally vest within 5 years. In order to improve the competitiveness and retention value of this program, options granted in 2003 are generally expected to vest in annual increments over 4 years.

We have a goal to keep the potential incremental dilution related to our option program to a long-term average of less than 2% annually. The dilution percentage is calculated as the new option grants for the year, net of options forfeited by employees leaving the company, divided by the total outstanding shares at the beginning of the year.

Options granted to employees, including officers, and non-employee directors are summarized as follows:

(Shares in Millions)	2002	2001	2000	1999	1998
Total options granted[1]	174	238	163	81	96
Less options forfeited[1]	(44)	(47)	(31)	(25)	(35)
Net options granted	130	191	132	56	61
Net grants as % of outstanding shares[2]	1.9%	2.8%	2.0%	1.2%	0.9%
Grants to listed officers[3] as % of total options granted	1.7%	0.8%	0.4%	0.9%	3.4%
Grants to listed officers as % of outstanding shares	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Cumulative options held by listed officers as % of total options outstanding	2.1%	2.0%	2.4%	2.9%	2.8%

1 *Excluding options assumed in connection with acquisitions.*

2 *Outstanding shares as of the beginning of each period.*

3 *"Listed officers" for 2002 are those listed in our proxy statement dated April 10, 2002, defined as our Chief Executive Officer and each of the four other most highly compensated executive officers.*

All stock option grants are made after a review by, and with the approval of, the Compensation Committee of the Board of Directors. All members of the Compensation Committee are independent directors, as defined in the applicable rules for issuers traded on The NASDAQ Stock Market*. See the "Report of the Compensation Committee on Executive Compensation" appearing in our most recent proxy statement filed with the U.S. Securities and Exchange Commission for further information concerning the policies and procedures of the company and the Compensation Committee regarding the use of stock options. Additional information about the compensation of the listed officers and stock option grants to the listed officers can also be found in our most recent proxy statement.

For additional information regarding stock option plan activity for 2002, 2001 and 2000, see the reconciliation of options outstanding in "Note 11: Employee Stock Benefit Plans" in Notes to Consolidated Financial Statements in this report.

In-the-money and out-of-the-money[1] option information as of December 28, 2002 was as follows:

	Exercisable		Unexercisable		Total	
(Shares in Millions)	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
In-the-money	133.5	$ 6.42	19.5	$13.76	153.0	$ 7.35
Out-of-the-money	140.5	$26.21	551.9	$30.06	692.4	$29.28
Total options outstanding	**274.0**	**$16.57**	**571.4**	**$29.50**	**845.4**	**$25.31**

1 *Out-of-the-money options have an exercise price equal to or above $16.56, the market price of Intel stock at the end of 2002.*

Options granted to listed officers as a group during 2002 were as follows:

Number of Securities Underlying Option Grants	Percent of Total Options Granted to Employees	Exercise Price Per Share	Expiration Date	Potential Realizable Values at Assumed Annual Rates of Stock Price Appreciation for Option Term[1]	
				5%	10%
2,986,677	1.7%	$20.23–$30.50	2012	$50,555,700	$128,118,100

1 *Represents gains that could accrue for these options, assuming that the market price of Intel common stock appreciates over a period of 10 years at annualized rates of 5% and 10%. If the stock price does not increase above the exercise price, the realized value from these options would be zero.*

Option exercises during 2002 and option values for listed officers as a group as of December 28, 2002 were as follows:

Shares Acquired on Exercise	Value Realized	Number of Shares Underlying Unexercised Options at December 28, 2002		Values of Unexercised In-the-Money Options at December 28, 2002[1]	
		Exercisable	Unexercisable	Exercisable	Unexercisable
544,000	$17,570,300	8,447,582	9,311,843	$66,814,500	$2,881,700

1 *These amounts represent the difference between the exercise price and $16.56, the market price of Intel stock at the end of 2002 for all in-the-money options held by the listed officers.*

Information as of December 28, 2002 regarding equity compensation plans approved and not approved by stockholders is summarized in the following table (shares in millions):

Plan Category	(A) Number of Shares to be Issued Upon Exercise of Outstanding Options	(B) Weighted Average Exercise Price of Outstanding Options	(C) Number of Shares Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Shares Reflected in Column A)
Equity compensation plans approved by shareholders	204.4	$14.33	260.0[1]
Equity compensation plans not approved by shareholders	625.3	$29.15	771.5[2]
Total	**829.7[3]**	**$25.50**	**1,031.5**

1 *Includes 150.3 million shares available for future issuance under our 1984 Stock Option Plan, as amended, generally used for grants to officers and directors. Also includes 109.7 million shares available under our 1976 Employee Stock Participation Plan.*

2 *Shares available under our 1997 Stock Option Plan, used for grants to employees other than officers and directors. The Board of Directors has adopted a policy that any new option plans, and any material amendments to existing plans, will be submitted for stockholder approval.*

3 *Total excludes 15.7 million shares issuable under outstanding options, with a weighted average exercise price of $15.49, originally granted under plans we assumed in connection with acquisitions. We do not intend to grant further options under these plans.*

Outlook

In general, as we look ahead to the rest of 2003, the outlook continues to be uncertain, and we anticipate a year that will be largely driven by the pace of recovery in our industry and in the economy. We are planning for seasonal performance, but we have the flexibility to respond quickly to an improvement in business conditions, with products, manufacturing capacity and people in place. Although it is difficult to predict product demand in 2003, we expect continued growth in the total number of computers using the Intel Pentium 4 processor based on the Intel NetBurst microarchitecture. Demand for our flash memory products is uncertain in the highly competitive cellular handset market segment. Revenue growth for WCCG is largely dependent on the trend toward higher density flash memory products and continued end user adoption of new leading-edge cellular handsets. The outlook for the telecommunications industry continues to be weak. Service providers continue to reduce capital equipment purchases, and land-line, or "wired," telecommunications OEMs continue to reduce headcount and report lower revenue. In this environment, revenue growth for ICG is largely dependent on securing design wins for new products and OEMs taking these product designs to production.

Our financial results are substantially dependent on sales of microprocessors and related components by the Intel Architecture operating segment. Revenue is partly a function of the mix of microprocessor types and speeds sold, as well as the mix of related chipsets and motherboards, all of which are difficult to forecast. Because of the wide price differences among performance desktop, value desktop, mobile and server microprocessors, the mix of types of microprocessors sold affects the average price that we will realize and has a large impact on our revenue and gross margin. Microprocessor revenue is also dependent on the availability of other parts of the system platform, including chipsets, motherboards, operating system software and application software. Revenue is also affected by our sales of other semiconductor and non-semiconductor products, and is subject to the impact of economic conditions in various geographic regions.

Our gross margin expectation for 2003 is 51% plus or minus a few points, which is a slight increase from the 2002 gross margin of 50%. Our gross margin varies depending on unit volumes and the mix of types and speeds of processors sold, as well as the mix of microprocessors, related chipsets and motherboards, and other semiconductor and non-semiconductor products. Variability of other factors will also continue to affect cost of sales and the gross margin percentage, including unit costs and yield issues associated with production at factories, timing and execution of the manufacturing ramp, including the ramp of manufacturing on 300-millimeter wafers and the 90-nanometer process technology on 300mm wafers, excess of manufacturing capacity, the reusability of factory equipment, insufficient or excess inventory, inventory obsolescence and variations in inventory valuation.

We have significantly expanded our semiconductor manufacturing and assembly and test capacity over the last few years, and we continue to plan capacity based on the assumed continued success of our strategy and the acceptance of our products in specific market segments. However, we expect that capital spending will decrease to a range of $3.5 billion to $3.9 billion in 2003 from $4.7 billion in 2002. The reduction is primarily the result of expected improvements in capital efficiency, with an increase in effective manufacturing capacity as we transition to the larger, 300mm wafer manufacturing process, and the timing of manufacturing process technology cycles. This capital spending plan is dependent on expectations regarding production efficiencies and delivery times of various machinery and equipment, and construction schedules for new facilities. If the demand for our products does not grow and continue to move toward higher performance products in the various market segments, revenue and gross margin would be adversely affected, manufacturing capacity would be under-utilized, and the rate of capital spending could be further reduced. However, in the long-term, revenue and gross margin may also be adversely affected if we do not add capacity fast enough to meet market demand when economic conditions improve.

Depreciation for 2003 is expected to be approximately $4.9 billion, compared to $4.7 billion in 2002. Most of this increase would be included in cost of sales and research and development spending.

Our industry is characterized by very short product life cycles, and our continued success is dependent on technological advances, including the development and implementation of new processes and new strategic products for specific market segments. Because we consider it imperative to maintain a strong research and

development program, spending for research and development in 2003, excluding purchased IPR&D, is expected to remain at approximately $4.0 billion. We also intend to continue spending to promote our products and to increase the value of our product brands.

Based on acquisitions completed through March 5, 2003, we expect amortization of acquisition-related intangibles and costs to be approximately $300 million in 2003.

In conjunction with the implementation of the new accounting rules for goodwill, we completed the initial goodwill impairment review as of the beginning of 2002 and the required annual review during the fourth quarter for ICG and WCCG, which are the reporting units with substantially all of our recorded goodwill. We found no impairment. Our impairment review process is based on a discounted cash flow approach that uses our estimates of revenue for the reporting units and appropriate discount rates. The estimates we have used are consistent with the plans and estimates that we are using to manage the underlying businesses. If we fail to deliver new products for these groups, if the products fail to gain expected market acceptance, or if market conditions in the communications businesses fail to improve, our revenue and cost forecasts may not be achieved and we may incur charges for impairment of goodwill.

At the end of 2002, we held non-marketable equity securities with a carrying value of $730 million. Our ability to recover our investments in non-marketable equity securities and to earn a return on these investments is primarily dependent on how successfully these companies are able to execute to their business plans and how their products are accepted, as well as their ability to obtain venture capital funding to continue operations and to grow. In the current equity market environment, their ability to obtain additional funding as well as to take advantage of liquidity events, such as initial public offerings, mergers and private sales, is significantly constrained. As the equity markets have declined significantly over the past two years, we have experienced substantial impairments in our portfolio of non-marketable equity securities. If equity market conditions do not improve, as companies within our portfolio attempt to raise additional funds, the funds may not be available to them, or they may receive lower valuations, with more onerous investment terms than in previous financings, and the investments will likely become impaired. However, we are not able to determine at the present time which specific investments are likely to be impaired in the future, or the extent or timing of individual impairments.

We currently expect our tax rate to be approximately 30.5% for 2003. This estimate is higher than the rate in 2002, primarily due to a higher percentage of profits being expected in higher tax jurisdictions. The expected rate is based on current tax law and is subject to change.

We are currently a party to various legal proceedings. Management does not believe that the ultimate outcome of these legal proceedings will have a material adverse effect on our financial position or overall trends in results of operations. However, litigation is subject to inherent uncertainties and unfavorable rulings could occur. An unfavorable ruling could include money damages or an injunction prohibiting Intel from selling one or more products. If an unfavorable ruling were to occur in any specific period, such a ruling could have a material adverse impact on the results of operations of that period, or future periods. Management believes that, given our current liquidity and cash and investment balances, even an adverse judgment would not have a material impact on cash and investments or liquidity.

We operate globally: with sales offices; research and development; and manufacturing, assembly and test in many countries, and so we are subject to risks and factors associated with doing business outside the U.S. Global operations involve inherent risks that include currency controls and fluctuations, tariff, import, and other related restrictions and regulations. If terrorist activity, armed conflict, civil or military unrest, or political instability occurs in the U.S., Israel or other locations, such events may disrupt manufacturing, assembly and test, logistics, security and communications, and could also result in reduced demand for Intel's products. We could also be affected if labor issues disrupt our transportation arrangements or those of our customers or suppliers. On a worldwide basis, we regularly review our key infrastructure, systems, services and suppliers, both internally and externally, to identify significant vulnerabilities as well as areas of potential business impact if a disruptive event were to occur. Once identified, we assess the risks, and as we consider it to be appropriate, we

initiate actions intended to minimize the risks and their potential impact. However, there can be no assurance that we have identified all significant risks or that we can mitigate all identified risks with reasonable effort.

Our future results of operations and the other forward-looking statements contained in this "Outlook" section, and in our "Strategy" and "Critical Accounting Estimates" sections, involve a number of risks and uncertainties—in particular, the statements regarding our goals and strategies, expectations regarding new product introductions, plans to cultivate new businesses, market segment share and growth rate assumptions, future economic conditions and recovery in the communications businesses, revenue, pricing, gross margin and costs, capital spending, depreciation and amortization, research and development expenses, potential impairment of investments, the tax rate and pending legal proceedings. In addition to various factors that we have discussed above, a number of other factors could cause actual results to differ materially from our expectations. Demand for our products, which impacts our revenue and gross margin percentage, is affected by business and economic conditions, as well as computing and communications industry trends and the development and timing of introduction of compelling software applications and operating systems that take advantage of the features of our products. Demand for our products is also affected by changes in customer order patterns, such as changes in the levels of inventory maintained by our customers and the timing of customer purchases. Revenue and gross margin could also be affected by competitive factors, such as competing chip architectures and manufacturing technologies, competing software-compatible microprocessors and acceptance of new products in specific market segments, and pricing pressures. Our future revenue is also dependent on continuing technological advancement, including developing and implementing new processes and strategic products, as well as sustaining and growing new businesses and integrating and operating any acquired businesses. Our results could also be affected by changes in the effective tax rate, as well as adverse effects associated with product defects and with errata (deviations from published specifications) and by litigation involving intellectual property, stockholder, consumer and other issues.

We believe that we have the product offerings, facilities, personnel, and competitive and financial resources for continued business success, but future revenue, costs, margins and profits are all influenced by a number of factors, including those discussed above, all of which are inherently difficult to forecast.

Status of Outlook and Related Risk Factor Statements

Intel's corporate representatives may reiterate the forward-looking statements contained in the "Outlook" section and in the "Strategy" and "Critical Accounting Estimates" sections, including portions that are repeated or incorporated by reference in this Form 10-K, during private meetings with investors, investment analysts, the media and others. At the same time, we will keep this Form 10-K and our Outlook publicly available on our Investor Relations web site (*www.intc.com*). The public can continue to rely on the Outlook on *www.intc.com* as still representing our current expectations on matters covered, unless we publish a notice stating otherwise. The statements in this Outlook and other forward-looking statements in this Form 10-K are subject to revision during the course of the year in our quarterly earnings releases, our mid-quarter business updates and at other times.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to financial market risks, including changes in currency exchange rates, interest rates and marketable equity security prices. To mitigate these risks, we utilize derivative financial instruments, among other strategies. Other than warrants and other equity derivatives that we acquired for strategic purposes, we do not use derivative financial instruments for speculative purposes. All of the potential changes noted below are based on sensitivity analyses performed on our financial positions at December 28, 2002. Actual results may differ materially.

We generally hedge currency risks of non-U.S. dollar-denominated investments in debt securities with offsetting currency borrowings, currency forward contracts or currency interest rate swaps. Gains and losses on these non-U.S.-currency investments would generally be offset by corresponding losses and gains on the related hedging instruments, resulting in negligible net exposure.

A substantial majority of our revenue, expense and capital purchasing activities are transacted in U.S. dollars. However, we do enter into these transactions in other currencies, primarily the Euro and certain other European and Asian currencies. To protect against reductions in value and the volatility of future cash flows caused by changes in currency exchange rates, we have established transaction and balance sheet hedging programs. Currency forward contracts and currency options are utilized in these hedging programs. Our hedging programs reduce, but do not always entirely eliminate, the impact of currency exchange rate movements. We considered the historical trends in currency exchange rates and determined that it was reasonably possible that adverse changes in exchange rates of 20% for the Euro and certain other European, Asian and South American currencies and 10% for all other currencies could be experienced in the near term. Such adverse changes, after taking into account hedges and offsetting positions, would have resulted in an adverse impact on income before taxes of less than $10 million as of the end of each of 2002 and 2001.

The primary objective of our investments in debt securities is to preserve principal while maximizing yields, without significantly increasing risk. To achieve this objective, the returns on a substantial majority of our marketable investments in long-term fixed rate debt securities are swapped to U.S. dollar LIBOR-based returns. We considered the historical volatility of the three-month LIBOR rate experienced in the past year and determined that it was reasonably possible that an adverse change of 80 basis points, approximately 57% of the rate at the end of 2002, could be experienced in the near term. A hypothetical 0.80% (80-basis-point) increase in interest rates, after taking into account hedges and offsetting positions, would have resulted in a less than $5 million decrease in the fair value of our investments in debt securities as of the end of 2002 and an approximate $10 million decrease as of the end of 2001.

We have a portfolio of equity investments that includes marketable securities classified as either long-term investments or trading assets, as well as derivative equity instruments such as warrants and options. To the extent that these investments continue to have strategic value, we typically do not attempt to reduce or eliminate our market exposure. For those securities that are no longer considered strategic, management will evaluate market and economic factors in its decision on the timing of disposal and whether it is possible and appropriate to hedge the equity market risk. Our investments are generally in companies in the high-technology industry, and a substantial majority of the market value of the portfolio is in two sectors: computing and communications, including networking and storage companies. As of December 28, 2002, the fair value of the company's portfolio of marketable equity securities and equity derivative instruments, including hedging positions, was $335 million.

We analyzed the historical movements over the past several years of high-technology stock indices that we considered appropriate. Based on the analysis, we estimated that it was reasonably possible that the prices of the stocks in our portfolio could experience a 30% adverse change in the near term. Assuming a 30% adverse change in market prices, and after reflecting the impact of hedges and offsetting positions, our portfolio would decrease in value by approximately $30 million, based on the value of the portfolio as of December 28, 2002 (a decrease in value of $70 million based on the portfolio as of the end of 2001). This estimate is not necessarily indicative of future performance, and actual results may differ materially. The marketable portfolio is substantially concentrated in a small number of companies, which may affect the portfolio's price volatility; however, the majority of the portfolio's value is hedged.

An adverse movement of equity market prices would also have an impact on our strategic investments in non-marketable equity securities, although the impact cannot be directly quantified. Such a movement and the related underlying economic conditions would negatively affect the prospects of the companies we invest in, their ability to raise additional capital and the likelihood of our being able to realize our investments through liquidity events such as initial public offerings, mergers and private sales. At December 28, 2002, our strategic investments in non-marketable equity securities had a carrying amount of $730 million, excluding equity derivatives that are subject to mark-to-market requirements.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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INTEL CORPORATION
CONSOLIDATED STATEMENTS OF INCOME

Three Years Ended December 28, 2002 (In Millions—Except Per Share Amounts)	2002	2001	2000
Net revenue	**$26,764**	**$26,539**	**$33,726**
Cost of sales	13,446	13,487	12,650
Gross margin	**13,318**	**13,052**	**21,076**
Research and development	4,034	3,796	3,897
Marketing, general and administrative	4,334	4,464	5,089
Amortization of goodwill	—	1,710	1,310
Amortization and impairment of acquisition-related intangibles and costs	548	628	276
Purchased in-process research and development	20	198	109
Operating expenses	8,936	10,796	10,681
Operating income	**4,382**	**2,256**	**10,395**
Gains (losses) on equity securities, net	(372)	(466)	3,759
Interest and other, net	194	393	987
Income before taxes	**4,204**	**2,183**	**15,141**
Provision for taxes	1,087	892	4,606
Net income	**$ 3,117**	**$ 1,291**	**$10,535**
Basic earnings per common share	**$ 0.47**	**$ 0.19**	**$ 1.57**
Diluted earnings per common share	**$ 0.46**	**$ 0.19**	**$ 1.51**
Weighted average common shares outstanding	**6,651**	**6,716**	**6,709**
Weighted average common shares outstanding, assuming dilution	**6,759**	**6,879**	**6,986**

See accompanying notes.

INTEL CORPORATION
CONSOLIDATED BALANCE SHEETS

December 28, 2002 and December 29, 2001 (In Millions—Except Par Value)	2002	2001
Assets		
Current assets:		
Cash and cash equivalents	$ 7,404	$ 7,970
Short-term investments	3,382	2,356
Trading assets	1,801	1,224
Accounts receivable, net of allowance for doubtful accounts of $57 ($68 in 2001)	2,574	2,607
Inventories	2,276	2,253
Deferred tax assets	1,136	958
Other current assets	352	265
Total current assets	**18,925**	**17,633**
Property, plant and equipment:		
Land and buildings	11,374	10,709
Machinery and equipment	22,800	21,605
Construction in progress	2,738	2,042
	36,912	34,356
Less accumulated depreciation	19,065	16,235
Property, plant and equipment, net	**17,847**	**18,121**
Long-term investments	**1,234**	**1,474**
Goodwill	**4,330**	**4,330**
Other assets	**1,888**	**2,837**
Total assets	**$44,224**	**$44,395**
Liabilities and stockholders' equity		
Current liabilities:		
Short-term debt	$ 436	$ 409
Accounts payable	1,543	1,769
Accrued compensation and benefits	1,287	1,179
Accrued advertising	622	560
Deferred income on shipments to distributors	475	418
Other accrued liabilities	1,075	1,247
Income taxes payable	1,157	988
Total current liabilities	**6,595**	**6,570**
Long-term debt	**929**	**1,050**
Deferred tax liabilities	**1,232**	**945**
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.001 par value, 50 shares authorized; none issued	—	—
Common stock, $0.001 par value, 10,000 shares authorized; 6,575 issued and outstanding (6,690 in 2001) and capital in excess of par value	7,641	8,833
Acquisition-related unearned stock compensation	(63)	(178)
Accumulated other comprehensive income	43	25
Retained earnings	27,847	27,150
Total stockholders' equity	**35,468**	**35,830**
Total liabilities and stockholders' equity	**$44,224**	**$44,395**

See accompanying notes.

INTEL CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

Three Years Ended December 28, 2002 (In Millions)	2002	2001	2000
Cash and cash equivalents, beginning of year	**$ 7,970**	**$ 2,976**	**$ 3,695**
Cash flows provided by (used for) operating activities:			
Net income	3,117	1,291	10,535
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation	4,676	4,131	3,249
Amortization of goodwill	—	1,710	1,310
Amortization and impairment of intangibles and other acquisition-related costs	668	717	352
Purchased in-process research and development	20	198	109
(Gains) losses on equity securities, net	372	466	(3,759)
(Gain) loss on investment in Convera	—	196	(117)
Net loss on retirements and impairments of property, plant and equipment	301	119	139
Deferred taxes	110	(519)	(130)
Tax benefit from employee stock plans	270	435	887
Changes in assets and liabilities:			
Trading assets	(444)	898	38
Accounts receivable	30	1,561	(384)
Inventories	(26)	24	(731)
Accounts payable	(226)	(673)	978
Accrued compensation and benefits	107	(524)	231
Income taxes payable	175	(270)	(362)
Other assets and liabilities	(21)	(971)	482
Total adjustments	6,012	7,498	2,292
Net cash provided by operating activities	**9,129**	**8,789**	**12,827**
Cash flows provided by (used for) investing activities:			
Additions to property, plant and equipment	(4,703)	(7,309)	(6,674)
Acquisitions, net of cash acquired	(57)	(883)	(2,317)
Purchases of available-for-sale investments	(6,309)	(7,141)	(17,188)
Maturities and sales of available-for-sale investments	5,634	15,398	17,124
Other investing activities	(330)	(395)	(980)
Net cash used for investing activities	**(5,765)**	**(330)**	**(10,035)**
Cash flows provided by (used for) financing activities:			
Increase (decrease) in short-term debt, net	(101)	23	138
Additions to long-term debt	55	306	77
Repayment and retirement of long-term debt	(18)	(10)	(46)
Proceeds from sales of shares through employee stock plans and other	681	762	797
Repurchase and retirement of common stock	(4,014)	(4,008)	(4,007)
Payment of dividends to stockholders	(533)	(538)	(470)
Net cash used for financing activities	**(3,930)**	**(3,465)**	**(3,511)**
Net increase (decrease) in cash and cash equivalents	**(566)**	**4,994**	**(719)**
Cash and cash equivalents, end of year	**$ 7,404**	**$ 7,970**	**$ 2,976**
Supplemental disclosures of cash flow information:			
Cash paid during the year for:			
Interest	$ 69	$ 53	$ 43
Income taxes	$ 475	$ 1,208	$ 4,209

See accompanying notes.

INTEL CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

Three Years Ended December 28, 2002 (In Millions—Except Per Share Amounts)	Common Stock and Capital in Excess of Par Value		Acquisition-Related Unearned Stock Compensation	Accumulated Other Comprehensive Income	Retained Earnings	Total
	Number of Shares	Amount				
Balance at December 25, 1999	**6,669**	**$ 7,316**	**$ —**	**$ 3,791**	**$ 21,428**	**$ 32,535**
Components of comprehensive income:						
Net income	—	—	—	—	10,535	10,535
Change in net unrealized gain on available-for-sale investments, net of tax	—	—	—	(3,596)	—	(3,596)
Total comprehensive income						6,939
Proceeds from sales of shares through employee stock plans, tax benefit of $887 and other	116	1,687	—	—	(3)	1,684
Reclassification of put warrant obligation, net	—	35	—	—	95	130
Issuance of common stock and assumption of stock options in connection with acquisitions	3	401	(123)	—	—	278
Amortization of acquisition-related unearned stock compensation	—	—	26	—	—	26
Conversion of subordinated notes	7	207	—	—	—	207
Repurchase and retirement of common stock	(74)	(1,160)	—	—	(2,847)	(4,007)
Cash dividends declared ($0.07 per share)	—	—	—	—	(470)	(470)
Balance at December 30, 2000	**6,721**	**8,486**	**(97)**	**195**	**28,738**	**37,322**
Components of comprehensive income:						
Net income	—	—	—	—	1,291	1,291
Change in net unrealized gain on available-for-sale investments, net of tax	—	—	—	(163)	—	(163)
Change in net unrealized loss on derivatives, net of tax	—	—	—	(7)	—	(7)
Total comprehensive income						1,121
Proceeds from sales of shares through employee stock plans, tax benefit of $435 and other	81	1,197	—	—	—	1,197
Issuance of common stock and assumption of stock options in connection with acquisitions, net	21	817	(255)	—	—	562
Amortization of acquisition-related unearned stock compensation	—	—	174	—	—	174
Repurchase and retirement of common stock	(133)	(1,667)	—	—	(2,341)	(4,008)
Cash dividends declared ($0.08 per share)	—	—	—	—	(538)	(538)
Balance at December 29, 2001	**6,690**	**8,833**	**(178)**	**25**	**27,150**	**35,830**
Components of comprehensive income:						
Net income	—	—	—	—	3,117	3,117
Change in net unrealized gain on available-for-sale investments, net of tax	—	—	—	(19)	—	(19)
Change in net unrealized gain on derivatives, net of tax	—	—	—	43	—	43
Minimum pension liability in excess of plan assets, net of tax				(6)		(6)
Total comprehensive income						3,135
Proceeds from sales of shares through employee stock plans, tax benefit of $270 and other	68	951	—	—	—	951
Amortization of acquisition-related unearned stock compensation, net of adjustments	—	(16)	115	—	—	99
Repurchase and retirement of common stock	(183)	(2,127)	—	—	(1,887)	(4,014)
Cash dividends declared ($0.08 per share)	—	—	—	—	(533)	(533)
Balance at December 28, 2002	**6,575**	**$ 7,641**	**$ (63)**	**$ 43**	**$ 27,847**	**$ 35,468**

See accompanying notes.

Note 1: Basis of Presentation

Intel Corporation has a fiscal year that ends on the last Saturday in December. Fiscal year 2002, a 52-week year, ended on December 28, 2002. Fiscal year 2001 was a 52-week year that ended on December 29, while fiscal year 2000, a 53-week year, ended on December 30. The next 53-week year will end on December 31, 2005.

The consolidated financial statements include the accounts of Intel and its wholly owned subsidiaries. Intercompany accounts and transactions have been eliminated. Partially owned, non-controlled, equity affiliates are accounted for under the equity method. Accounts denominated in non-U.S. currencies have been remeasured using the U.S. dollar as the functional currency.

Note 2: Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the U.S. requires management to make estimates and judgments that affect the amounts reported in the financial statements and accompanying notes. The accounting estimates that require management's most difficult and subjective judgments include the assessment of recoverability of property, plant, and equipment and goodwill; the valuation of non-marketable equity securities and inventory; and the recognition and measurement of income tax assets and liabilities. The actual results experienced by the company may differ materially from management's estimates.

Accounting Change

Effective the beginning of 2002, the company completed the adoption of Statement of Financial Accounting Standards (SFAS) No. 141, "Business Combinations," and SFAS No. 142, "Goodwill and Other Intangible Assets." As required by SFAS No. 142, the company discontinued amortizing the remaining balances of goodwill as of the beginning of fiscal 2002. Through December 29, 2001, goodwill had been amortized over an estimated life of 2–6 years. All remaining and future acquired goodwill will be subject to an impairment test in the fourth quarter of each year, or earlier if indicators of potential impairment exist, using a fair-value-based approach. The company completed the initial goodwill impairment review as of the beginning of 2002, and completed the annual impairment review during the fourth quarter of 2002, and found no impairment. All identifiable intangible assets will continue to be amortized over their estimated useful lives and assessed for impairment under SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets."

Upon adoption of the new Business Combination rules, workforce-in-place no longer meets the definition of an identifiable intangible asset. As a result, as of the beginning of 2002, the net book value of $39 million, along with associated deferred tax liabilities of $19 million, has been reclassified to goodwill. See "Note 15: Goodwill."

Included in amortization of goodwill in the consolidated statements of income are impairments of $98 million in 2001. There were no goodwill impairments in 2002 and 2000. Such amounts are not included in the goodwill and workforce amortization adjustments below. A reconciliation of previously reported net income and earnings per share to the amounts adjusted for the exclusion of goodwill and workforce-in-place amortization, net of the related income tax effect, is as follows:

(In Millions—Except Per Share Amounts)	2002	2001	2000
Reported net income	$3,117	$1,291	$10,535
Goodwill and workforce amortization, net of tax	—	1,556	1,269
Adjusted net income	$3,117	$2,847	$11,804
Reported basic earnings per common share	$ 0.47	$ 0.19	$ 1.57
Goodwill and workforce amortization, net of tax	—	0.23	0.19
Adjusted basic earnings per common share	$ 0.47	$ 0.42	$ 1.76
Reported diluted earnings per common share	$ 0.46	$ 0.19	$ 1.51
Goodwill and workforce amortization, net of tax	—	0.22	0.18
Adjusted diluted earnings per common share	$ 0.46	$ 0.41	$ 1.69

Cash and Cash Equivalents

Highly liquid debt securities with insignificant interest rate risk and with original maturities of three months or less are classified as cash and cash equivalents.

Investments

Trading Assets. Trading assets are stated at fair value, with gains or losses resulting from changes in fair value recognized currently in earnings. The company elects to classify as trading assets a portion of its marketable debt securities. For these debt securities, gains or losses from changes in fair value due to interest rate and currency market fluctuations, offset by losses or gains on related derivatives, are included in interest and other, net. A portion of the company's marketable equity securities have been classified as trading assets, as the company no longer deems the investments to be strategic in nature and has the ability and intent to mitigate equity market risk through the use of derivative instruments. For these marketable equity securities, gains or losses from changes in fair value, offset or partially offset by losses or gains on related derivative instruments, are included in gains (losses) on equity securities, net. Also included in trading assets is a marketable equity portfolio held to generate returns that seek to offset changes in liabilities related to certain deferred compensation arrangements. Gains or losses from changes in fair value of these equity securities, offset by losses or gains on the related liabilities, are included in interest and other, net. The company also uses fixed income investments and derivative instruments to seek to offset the remaining portion of the changes in the compensation liabilities.

Available-for-Sale Investments. Investments designated as available-for-sale include marketable debt and equity securities. Investments that are designated as available-for-sale as of the balance sheet date are reported at fair value, with unrealized gains and losses, net of tax, recorded in stockholders' equity. The cost of securities sold is based on the specific identification method. Realized gains and losses on the sale of debt securities are recorded in interest and other, net. Realized gains or losses on the sale or exchange of equity securities and declines in value judged to be other than temporary are recorded in gains (losses) on equity securities, net. Marketable equity securities are presumed to be impaired if the fair value is less than the cost basis for six months, absent compelling evidence to the contrary.

Debt securities with original maturities greater than three months and remaining maturities less than one year are classified as short-term investments. Debt securities with remaining maturities greater than one year are classified as long-term investments.

The company acquires certain equity investments for the promotion of business and strategic objectives, and to the extent these investments continue to have strategic value, the company typically does not attempt to reduce or eliminate the inherent market risks. The marketable portion of these investments is included in long-term investments.

Non-Marketable Equity Securities and Other Investments. Non-marketable equity securities and other investments are accounted for at historical cost or, if Intel has significant influence over the investee, using the

equity method of accounting. Intel's proportionate share of income or losses from investments accounted for under the equity method and any gain or loss on disposal are recorded in interest and other, net. Non-marketable equity securities, equity-method investments, and other investments are included in other assets. Non-marketable equity securities are subject to a periodic impairment review; however, there are no open-market valuations, and the impairment analysis requires significant judgment. This analysis includes assessment of the investee's financial condition, the business outlook for its products and technology, its projected results and cash flow, the likelihood of obtaining subsequent rounds of financing and the impact of any relevant contractual equity preferences held by Intel or others. If an investee obtains additional funding at a valuation lower than Intel's carrying amount, it is presumed that the investment is other than temporarily impaired, unless specific facts and circumstances indicate otherwise, for example if Intel holds contractual rights that include a preference over the rights of other investors. Impairment of non-marketable equity securities is recorded in gains (losses) on equity securities, net.

Securities Lending

From time to time, the company enters into securities lending agreements with financial institutions, generally to facilitate hedging transactions. Selected securities are loaned and are secured by collateral in the form of cash or securities. The loaned securities continue to be carried as investment assets on the balance sheet. Cash collateral is recorded as an asset with a corresponding liability. For lending agreements collateralized by securities, the collateral is not recorded as an asset or a liability, unless the collateral is repledged. See "Note 5: Borrowings."

Fair Values of Financial Instruments

Fair values of cash equivalents approximate cost due to the short period of time to maturity. Fair values of short-term investments, trading assets, long-term investments, certain non-marketable investments, short-term debt, long-term debt, swaps, currency forward contracts, equity options and warrants are based on quoted market prices or pricing models using current market rates. Debt securities are generally valued using discounted cash flows in an industry-standard yield-curve model based on LIBOR. Equity options and warrants are priced using a Black-Scholes option pricing model. For the company's portfolio of non-marketable equity securities, management believes that the carrying value of the portfolio approximates the fair value at December 28, 2002. This estimate takes into account the prolonged decline of the equity and venture capital markets, the impairment analyses performed and the impairments recorded during 2002. At December 29, 2001, the fair values of certain of the non-marketable equity securities were estimated based on prices most recently paid for shares in those companies. All of the estimated fair values are management's estimates; however, when there is no readily available market, the estimated fair values may not necessarily represent the amounts that could be realized in a current transaction, and these fair values could change significantly.

Derivative Financial Instruments

The company's primary objective for holding derivative financial instruments is to manage currency, interest rate, and some equity market risks. The company's derivative instruments are recorded at fair value and are included in other current assets, other assets, other accrued liabilities or long-term debt. The company's accounting policies for these instruments are based on whether they meet the company's criteria for designation as hedging transactions, either as cash flow or fair value hedges. A hedge of the exposure to variability in the cash flows of an asset or a liability, or of a forecasted transaction, is referred to as a cash flow hedge. A hedge of the exposure to changes in fair value of an asset or a liability, or of an unrecognized firm commitment, is referred to as a fair value hedge. The criteria for designating a derivative as a hedge include the instrument's effectiveness in risk reduction and, in most cases, a one-to-one matching of the derivative instrument to its underlying transaction. Gains and losses on derivatives that are not designated as hedges for accounting purposes are recognized currently in earnings, and generally offset changes in the values of related assets, liabilities or debt.

As part of its strategic investment program, the company also acquires equity derivative instruments, such as warrants and equity conversion rights associated with debt instruments, that are not designated as hedging

instruments. The gains or losses from changes in fair values of these equity derivatives are recognized in gains (losses) on equity securities, net.

Currency Risk. The company transacts business in various currencies other than the U.S. dollar, primarily the Euro and certain other European and Asian currencies. The company has established transaction and balance sheet risk management programs to protect against reductions in fair value and volatility of future cash flows caused by changes in exchange rates. The company uses currency forward contracts, currency options, currency borrowings and currency interest rate swaps in these risk management programs. These programs reduce, but do not always entirely eliminate, the impact of currency exchange movements.

Currency forward contracts and currency options that are used to hedge exposures to variability in anticipated non-U.S.-dollar-denominated cash flows are designated as cash flow hedges. The maturities of these instruments are generally less than 12 months. For these derivatives, the gain or loss from the effective portion of the hedge is reported as a component of other comprehensive income in stockholders' equity and is reclassified into earnings in the same period or periods in which the hedged transaction affects earnings, and within the same income statement line item. The gain or loss from the ineffective portion of the hedge in excess of the cumulative change in the present value of future cash flows of the hedged item, if any, is recognized in interest and other, net during the period of change.

Currency interest rate swaps and currency forward contracts are used to offset the currency risk of non-U.S.-dollar-denominated debt securities classified as trading assets, as well as other assets and liabilities denominated in various currencies. Changes in fair value of the underlying assets and liabilities are generally offset by the changes in fair value of the related derivatives, with the resulting net gain or loss, if any, recorded in interest and other, net.

Interest Rate Risk. The company's primary objective for holding investments in debt securities is to preserve principal while maximizing yields, without significantly increasing risk. To achieve this objective, the returns on a substantial majority of the company's investments in long-term fixed-rate marketable debt securities are swapped to U.S. dollar LIBOR-based returns, using interest rate swaps and currency interest rate swaps in transactions that are not designated as hedges for accounting purposes. The floating interest rates on the swaps are reset on a monthly, quarterly or semiannual basis. Changes in fair value of the debt securities classified as trading assets are generally offset by changes in fair value of the related derivatives, resulting in negligible net impact. The net gain or loss, if any, is recorded in interest and other, net.

The company also enters into interest rate swap agreements to modify the interest characteristics of a portion of its outstanding long-term debt. These transactions are designated as fair value hedges. The gains or losses from the changes in fair value of the interest rate swaps, as well as the offsetting change in the hedged fair value of the long-term debt, are recognized in interest expense.

Equity Market Risk. The company may enter into transactions designated as fair value hedges using equity options, swaps or forward contracts to hedge the equity market risk of marketable securities in its portfolio of strategic equity investments once the securities are no longer considered to have strategic value. The gain or loss from the change in fair value of these equity derivatives, as well as the offsetting change in hedged fair value of the related strategic equity securities, are recognized currently in gains (losses) on equity securities, net. The company also uses equity derivatives in transactions not designated as hedges to offset the change in fair value of certain equity securities classified as trading assets. The company may or may not enter into transactions to reduce or eliminate the market risks of its investments in strategic equity derivatives, including warrants.

Measurement of Effectiveness of Hedge Relationships. For currency forward contracts, effectiveness of the hedge is measured using spot rates for hedging strategies related to long-term construction contracts, and using forward rates for all other strategies, to value the forward contract and the underlying hedged transaction. For currency options and equity options, effectiveness is measured by the change in the option's intrinsic value, which represents the change in the option's strike price compared to the spot price of the underlying hedged transaction. Changes in time value of these options are not included in the assessment of effectiveness. For

interest rate swaps, effectiveness is measured by offsetting the change in fair value of the long-term debt with the change in fair value of the interest rate swap.

Any ineffective portions of the hedge, as well as amounts not included in the assessment of effectiveness, are recognized currently in interest and other, net or in gains (losses) on equity securities, net, depending on the nature of the underlying asset or liability. If a cash flow hedge were to be discontinued because it is probable that the original hedged transaction will not occur as anticipated, the unrealized gains or losses would be reclassified into earnings. Subsequent gains or losses on the related derivative instrument would be recognized in income in each period until the instrument matures, is terminated or is sold.

During 2002 and 2001, the portion of hedging instruments' gains or losses excluded from the assessment of effectiveness and the ineffective portions of hedges had an insignificant impact on earnings for both cash flow and fair value hedges. There was no significant impact to results of operations from discontinued cash flow hedges as a result of forecasted transactions that did not occur.

Inventories

Inventory cost is computed on a currently adjusted standard basis (which approximates actual cost on a current average or first-in, first-out basis). Work in process and finished goods inventory are determined to be saleable based on a demand forecast within a specific time horizon, generally six months or less. Inventory in excess of saleable amounts is not valued, and the remaining inventory is valued at the lower of cost or market. Inventories at fiscal year-ends were as follows:

(In Millions)	2002	2001
Raw materials	$ 223	$ 237
Work in process	1,365	1,316
Finished goods	688	700
Total	**$2,276**	**$2,253**

Property, Plant and Equipment

Property, plant and equipment are stated at cost. Depreciation is computed for financial reporting purposes principally using the straight-line method over the following estimated useful lives: machinery and equipment, 2–4 years; buildings, 4–40 years. Reviews are regularly performed to determine whether facts and circumstances exist which indicate that the carrying amount of assets may not be recoverable or the useful life is shorter than originally estimated. The company assesses the recoverability of its assets by comparing the projected undiscounted net cash flows associated with the related asset or group of assets over their remaining lives against their respective carrying amounts. Impairment, if any, is based on the excess of the carrying amount over the fair value of those assets (see "Note 18: Impairment of Long-Lived Assets"). If assets are determined to be recoverable, but the useful lives are shorter than originally estimated, the net book value of the assets is depreciated over the newly determined remaining useful lives.

Identified Intangible Assets

Acquisition-related intangibles include developed technology, trademarks and customer lists, and are amortized on a straight-line basis over periods ranging from 2–6 years. Intellectual property assets primarily represent acquired technology licenses and are amortized over the periods of benefit, ranging from 2–10 years, generally on a straight-line basis. All identified intangible assets are classified within other assets on the balance sheet. In the quarter following the period in which identified intangible assets become fully amortized, the fully amortized balances are removed from the gross asset and accumulated amortization amounts.

Identified intangible assets are regularly reviewed to determine whether facts and circumstances exist which indicate that the useful life is shorter than originally estimated or the carrying amount of assets may not be recoverable. The company assesses the recoverability of identified intangible assets by comparing the projected undiscounted net cash flows associated with the related asset or group of assets over their remaining lives

against their respective carrying amounts. Impairment, if any, is based on the excess of the carrying amount over the fair value of those assets.

Revenue Recognition

The company recognizes net revenue when the earnings process is complete, as evidenced by an agreement with the customer, transfer of title and acceptance, if applicable, as well as fixed pricing and probable collectibility. Because of frequent sales price reductions and rapid technology obsolescence in the industry, sales made to distributors under agreements allowing price protection and/or right of return are deferred until the distributors sell the merchandise. Shipping charges billed to customers are included in net revenue and the related shipping costs are included in cost of sales.

Product Warranty

The company's product warranty accrual includes specific accruals for known product issues and an accrual for an estimate of incurred but unidentified product issues based on historical activity. During 2000, the company announced that it would replace motherboards that had a defective memory translator hub component with the Intel® 820 chipset and recognized a charge with a total impact on gross margin of approximately $253 million. As of December 29, 2001, no significant balance remained. The warranty accrual and the related expense for known product issues were not significant for 2001 and 2002. Due to effective product testing and the short time between product shipment and the detection and correction of product failures, the warranty accrual based on historical activity and the related expense were not significant as of and for the fiscal years presented.

Advertising

Cooperative advertising obligations are accrued and the costs expensed at the same time the related revenue is recognized. All other advertising costs are expensed as incurred. Cooperative advertising expenses are recorded as marketing, general and administrative expense to the extent the cash paid does not exceed the fair value of the advertising benefit received. Any excess of cash paid over the fair value of the advertising benefit received is recorded as a reduction of revenue. Advertising expense was $1.7 billion in 2002 ($1.6 billion in 2001 and $2.0 billion in 2000).

Stock Option Plans

The company has employee stock benefit plans, which are described more fully in "Note 11: Employee Stock Benefit Plans." The company's stock option plans are accounted for under the intrinsic value recognition and measurement principles of APB Opinion No. 25, "Accounting for Stock Issued to Employees," and related Interpretations. As the exercise price of all options granted under these plans was equal to the market price of the underlying common stock on the grant date, no stock-based employee compensation cost, other than acquisition-related compensation, is recognized in net income. The following table illustrates the effect on net income and earnings per share if the company had applied the fair value recognition provisions of SFAS No. 123, "Accounting for Stock-Based Compensation," to employee stock benefits, including shares issued under the stock option plans and under the company's Stock Participation Plan, collectively called "options."

For purposes of this pro-forma disclosure, the estimated fair value of the options is assumed to be amortized to expense over the options' vesting periods.

(In Millions—Except Per Share Amounts)	2002	2001	2000
Net income, as reported	$3,117	$1,291	$10,535
Less: Total stock-based employee compensation expense determined under the fair value method for all awards, net of tax	1,170	1,037	836
Pro-forma net income	$1,947	$ 254	$ 9,699
Reported basic earnings per common share	$ 0.47	$ 0.19	$ 1.57
Reported diluted earnings per common share	$ 0.46	$ 0.19	$ 1.51
Pro-forma basic earnings per common share	$ 0.29	$ 0.04	$ 1.45
Pro-forma diluted earnings per common share	$ 0.29	$ 0.04	$ 1.40

SFAS No. 123 requires the use of option pricing models that were not developed for use in valuing employee stock options. The Black-Scholes option pricing model was developed for use in estimating the fair value of short-lived exchange traded options that have no vesting restrictions and are fully transferable. In addition, option pricing models require the input of highly subjective assumptions, including the option's expected life and the price volatility of the underlying stock. Because the company's employee stock options have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in the opinion of management, the existing models do not necessarily provide a reliable single measure of the fair value of employee stock options. See "Note 11: Employee Stock Benefit Plans" for a discussion of the assumptions used in the option pricing model and estimated fair value of employee stock options.

Reclassifications

Certain amounts reported in previous years have been reclassified to conform to the 2002 presentation.

Recent Accounting Pronouncements

In June 2002, the Financial Accounting Standards Board (FASB) issued SFAS No. 146, "Accounting for Costs Associated with Exit or Disposal Activities." SFAS No. 146 addresses the timing and amount of costs recognized as a result of restructuring and similar activities. The company will apply SFAS No. 146 prospectively to activities initiated after December 28, 2002. SFAS No. 146 had no significant impact at the point of adoption on the company's consolidated statements of income or financial position.

In November 2002, the FASB issued Interpretation No. 45 (FIN 45), "Guarantor's Accounting and Disclosure Requirements for Guarantees." FIN 45 requires a guarantor to recognize, at the inception of a guarantee, a liability for the fair value of the obligation it has undertaken in issuing the guarantee. The company will apply FIN 45 to guarantees, if any, issued after December 28, 2002. At adoption, FIN 45 did not have a significant impact on the company's consolidated statements of income or financial position. FIN 45 also requires guarantors to disclose certain information for guarantees, including product warranties, outstanding at December 28, 2002.

In January 2003, the FASB issued Interpretation No. 46 (FIN 46), "Consolidation of Variable Interest Entities." FIN 46 requires an investor with a majority of the variable interests in a variable interest entity to consolidate the entity and also requires majority and significant variable interest investors to provide certain disclosures. A variable interest entity is an entity in which the equity investors do not have a controlling interest or the equity investment at risk is insufficient to finance the entity's activities without receiving additional subordinated financial support from the other parties. Intel is currently reviewing its investment portfolio of early stage entities to determine whether any of its investee companies are variable interest entities. The company does not expect to identify any variable interest entities that must be consolidated, but may be required to make additional disclosures. The maximum exposure of any investment that may be determined to be in a variable interest entity is limited to the amount invested.

Note 3: Earnings Per Share

The shares used in the computation of the company's basic and diluted earnings per common share are as follows:

(In Millions)	2002	2001	2000
Weighted average common shares outstanding	**6,651**	**6,716**	**6,709**
Dilutive effect of:			
Employee stock options	108	163	272
Convertible notes	—	—	5
Weighted average common shares outstanding, assuming dilution	**6,759**	**6,879**	**6,986**

Weighted average common shares outstanding, assuming dilution, includes the incremental shares that would be issued upon the assumed exercise of stock options, as well as the assumed conversion of the convertible notes, for the period the notes were outstanding. For 2002, approximately 387 million of the company's stock options were excluded from the calculation of diluted earnings per share because their inclusion would have been antidilutive (211 million in 2001 and 34 million in 2000). These options could be dilutive in the future.

Note 4: Common Stock Repurchase Program

The company has an ongoing authorization, as amended, from the Board of Directors to repurchase up to 2.3 billion shares of Intel's common stock in open market or negotiated transactions, including the 2002 authorization to purchase an additional 480 million shares. During 2002, the company repurchased 183 million shares of common stock at a cost of $4 billion. Since the program began in 1990, the company has repurchased and retired approximately 1.7 billion shares at a cost of $30 billion. As of December 28, 2002, 590 million shares remained available under the repurchase authorization.

Note 5: Borrowings

Short-Term Debt

Short-term debt at fiscal year-ends was as follows:

(In Millions)	2002	2001
Drafts payable (non-interest-bearing)	$211	$224
Floating rate obligations under securities lending agreements	84	153
Other short-term debt	—	18
Current portion of long-term debt	141	14
Total	**$436**	**$409**

Obligations under securities lending agreements had an average rate of 1.25% as of December 28, 2002 and 1.75% as of December 29, 2001. The company also borrows under a commercial paper program. Maximum borrowings under the company's commercial paper program reached $240 million during 2002 and $105 million during 2001. No commercial paper was outstanding as of December 28, 2002 or December 29, 2001. This debt is rated A-1+ by Standard & Poor's and P-1 by Moody's.

Long-Term Debt

Long-term debt at fiscal year-ends was as follows:

(In Millions)	2002	2001
Payable in U.S. dollars:		
Puerto Rico bonds adjustable 2003, due 2013 at 3.9%–4.25%	$ 116	$ 116
Zero coupon senior exchangeable notes due 2004	118	256
Other U.S. dollar debt	3	5
Payable in other currencies:		
Euro debt due 2003–2018 at 2.6%–11%	833	687
	1,070	1,064
Less current portion of long-term debt	(141)	(14)
Total	**$ 929**	**$1,050**

The company has guaranteed repayment of principal and interest on bonds issued by the Puerto Rico Industrial, Tourist, Educational, Medical and Environmental Control Facilities Financing Authority. The bonds are adjustable and redeemable at the option of either the company or the bondholder every five years through 2013, and are next adjustable and redeemable in 2003. Accordingly, they have been classified as short-term debt at December 28, 2002.

In April 2001, the company issued zero coupon senior exchangeable notes (Intel notes) with a principal amount of $200 million for net proceeds of $208 million in a private placement. The note holders have the right to exchange their Intel notes for Samsung Electronics Co., Ltd. convertible notes (Samsung notes) owned by Intel. The exchangeable notes were issued in order to partially mitigate the equity market risk of Intel's investment in the Samsung notes, and the exchange option is accounted for as an equity derivative and marked-to-market with the fair value recorded in long-term debt. During 2002, the holders exchanged Intel notes with a principal amount of $122 million. In accordance with the terms of the Intel notes, the company delivered a portion of its investment in the Samsung notes with a face value of approximately $61 million to the holders in exchange for Intel notes. The carrying value of the debt instrument, excluding the portion allocated to the equity derivative, is being accreted to its remaining principal amount of $78 million through interest expense over the period to its maturity. The remaining Intel note holders may exercise their exchange option any time prior to January 12, 2004, and the notes are redeemable by Intel, provided specified market price criteria are met, through February 1, 2004.

The Euro borrowings were made in connection with the financing of manufacturing facilities in Ireland, and Intel has invested the proceeds in Euro-denominated instruments of similar maturity to hedge currency and interest rate exposures.

As of December 28, 2002, aggregate debt maturities were as follows: 2003—$141 million; 2004—$152 million; 2005—$39 million; 2006—$45 million; 2007—$48 million; and thereafter—$645 million.

Note 6: Investments

Trading Assets

Trading assets outstanding at fiscal year-ends were as follows:

(In Millions)	2002 Net Unrealized Gains (Losses)	2002 Estimated Fair Value	2001 Net Unrealized Gains (Losses)	2001 Estimated Fair Value
Debt instruments	$ 64	$1,460	$ (15)	$ 836
Equity securities	63	98	72	74
Equity securities offsetting deferred compensation	(1)	243	66	314
Total trading assets	**$126**	**$1,801**	**$123**	**$1,224**

Net realized marked-to-market gains (losses) on fixed income debt instruments classified as trading assets were $79 million in 2002 and $(21) million in 2001. These amounts were included in interest and other, net in the consolidated statements of income. There were no debt instruments classified as trading assets in 2000.

Net realized marked-to-market gains (losses) on equity security trading assets were $57 million in 2002 and $72 million in 2001. The $57 million net gain includes a gain of $120 million, resulting from the designation of formerly restricted equity investments as trading assets as they became marketable. The cumulative difference between their cost and fair market value at the time they became marketable was recorded as a gain in 2002. Gains and losses on the related derivatives were $110 million in 2002 and $18 million in 2001. These gains and losses were included within gains (losses) on equity securities, net in the consolidated statements of income. There were no equity securities classified as trading assets in 2000.

Certain equity securities within the trading asset portfolio are maintained to generate returns that partially offset changes in liabilities related to certain deferred compensation arrangements. These deferred compensation liabilities were $336 million in 2002 and $399 million in 2001, and are included in other accrued liabilities on the consolidated balance sheets. Net realized marked-to-market gains (losses) on equity securities offsetting deferred compensation arrangements were $(64) million in 2002, $(45) million in 2001 and $(41) million in 2000, which were included within interest and other, net in the consolidated statements of income.

Available-for-Sale Investments

Available-for-sale investments at December 28, 2002 were as follows:

(In Millions)	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Commercial paper	$6,935	$ 1	$ —	$6,936
Bank time deposits	2,121	1	—	2,122
Loan participations	862	—	—	862
Corporate bonds	838	—	—	838
Floating rate notes	781	—	(1)	780
Preferred stock and other equity	140	—	—	140
Other debt securities	71	—	—	71
Marketable strategic equity securities	38	19	(1)	56
Total available-for-sale investments	**11,786**	**21**	**(2)**	**11,805**
Less amounts classified as cash equivalents	(7,189)	—	—	(7,189)
	$4,597	**$21**	**$ (2)**	**$4,616**

Available-for-sale investments at December 29, 2001 were as follows:

(In Millions)	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Commercial paper	$6,329	$ 2	$ —	$6,331
Bank time deposits	2,047	1	(1)	2,047
Corporate bonds	911	1	—	912
Loan participations	838	—	—	838
Floating rate notes	795	1	—	796
Other debt securities	371	—	—	371
Marketable strategic equity securities	109	48	(2)	155
Preferred stock and other equity	104	—	—	104
Total available-for-sale investments	**11,504**	**53**	**(3)**	**11,554**
Less amounts classified as cash equivalents	(7,724)	—	—	(7,724)
	$3,780	**$53**	**$ (3)**	**$3,830**

The company sold available-for-sale securities with a fair value at the date of sale of $114 million in 2002, $1.3 billion in 2001 and $4.2 billion in 2000. The gross realized gains on these sales totaled $15 million in 2002, $548 million in 2001 and $3.4 billion in 2000. The company realized gross losses on sales of $39 million in 2002, $187 million in 2001 and $52 million in 2000. The company recognized gains on shares exchanged in third-party merger transactions of $1 million in 2002, $156 million in 2001 and $682 million in 2000. The company recognized impairment losses on available-for-sale and non-marketable investments of $524 million in 2002, $1.1 billion in 2001 and $297 million in 2000.

The amortized cost and estimated fair value of available-for-sale investments in debt securities at December 28, 2002, by contractual maturity, were as follows:

(In Millions)	Cost	Estimated Fair Value
Due in 1 year or less	$10,451	$10,451
Due in 1–2 years	394	395
Due in 2–5 years	141	141
Due after 5 years	622	622
Total investments in available-for-sale debt securities	**$11,608**	**$11,609**

Fair Values of Financial Instruments

The estimated fair values of financial instruments outstanding at fiscal year-ends were as follows:

(In Millions—Assets (Liabilities))	2002 Carrying Amount	2002 Estimated Fair Value	2001 Carrying Amount	2001 Estimated Fair Value
Cash and cash equivalents	$7,404	$7,404	$ 7,970	$ 7,970
Short-term investments	$3,382	$3,382	$ 2,356	$ 2,356
Trading assets	$1,801	$1,801	$ 1,224	$ 1,224
Marketable strategic equity securities	$ 56	$ 56	$ 155	$ 155
Other long-term investments	$1,178	$1,178	$ 1,319	$ 1,319
Non-marketable equity securities	$ 730	$ 730	$ 1,276	$ 1,719
Other non-marketable instruments	$ 92	$ 92	$ 161	$ 161
Warrants and other equities marked-to-market as derivatives	$ 109	$ 109	$ 172	$ 172
Options hedging or offsetting equities	$ 116	$ 116	$ 51	$ 51
Swaps related to investments in debt securities	$ (58)	$ (58)	$ 12	$ 12
Options related to deferred compensation liabilities	$ (23)	$ (23)	$ (6)	$ (6)
Short-term debt	$ (436)	$ (432)	$ (409)	$ (409)
Long-term debt	$ (929)	$ (929)	$(1,050)	$(1,045)
Swaps hedging debt	$ (7)	$ (7)	$ 4	$ 4
Currency forward contracts	$ 52	$ 52	$ 1	$ 1

Due to restrictions on sales extending beyond one year, publicly traded securities with a carrying value of $85 million and an estimated fair value of $210 million were classified as non-marketable equity securities at December 29, 2001. No significant amounts of similarly restricted securities were held as of December 28, 2002.

Note 7: Concentrations of Credit Risk

Financial instruments that potentially subject the company to concentrations of credit risk consist principally of investments in debt securities, derivative financial instruments and trade receivables. Intel generally places its investments with high-credit-quality counterparties and, by policy, limits the amount of credit exposure to any one counterparty based on Intel's analysis of that counterparty's relative credit standing. Investments in debt securities with original maturities of greater than six months consist primarily of A and A2 or better rated financial instruments and counterparties. Investments with original maturities of up to six months consist primarily of A-1 and P-1 or better rated financial instruments and counterparties. Government regulations imposed on investment alternatives of Intel's non-U.S. subsidiaries, or the absence of A and A2 rated counterparties in certain countries, result in some minor exceptions. Credit rating criteria for derivative instruments are similar to those for investments. The amounts subject to credit risk related to derivative instruments are generally limited to the amounts, if any, by which a counterparty's obligations exceed the obligations of Intel with that counterparty. At December 28, 2002, debt investments were placed with approximately 200 different counterparties. Intel's practice is to obtain and secure available collateral from counterparties against obligations, including securities lending transactions, whenever Intel deems appropriate.

A majority of the company's trade receivables are derived from sales to original equipment manufacturers of computer systems, cellular handsets and handheld computing devices, telecommunications and networking communications equipment, and peripherals. The company's three largest customers accounted for approximately 38% of net revenue for 2002, an increase from 35% for 2001. At December 28, 2002, the three largest customers accounted for approximately 39% of net accounts receivable (39% of net accounts receivable at December 29, 2001). During 2002, two of the company's top customers merged and are therefore presented as a single customer. For comparability purposes, the 2001 and 2000 top customer percentages have been restated to also reflect this merger.

The company endeavors to keep pace with the evolving computer and communications industries, and has adopted credit policies and standards intended to accommodate industry growth and inherent risk. Management

believes that credit risks are moderated by the diversity of the company's end customers and geographic sales areas. Intel performs ongoing credit evaluations of its customers' financial condition and requires collateral as deemed necessary.

Note 8: Interest and Other, Net

(In Millions)	2002	2001	2000
Interest income	$298	$615	$920
Interest expense	(84)	(56)	(35)
Gain (loss) on investment in Convera	—	(196)	117
Other, net	(20)	30	(15)
Total	**$194**	**$393**	**$987**

Effective as of the beginning of 2001, the company adopted SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities," as amended. The cumulative effect of the adoption of SFAS No. 133 was an increase in income before taxes of $45 million, which was included in other, net for 2001.

In December 2000, Intel contributed its Interactive Media Services division to Convera Corporation and invested $150 million in cash in exchange for shares of Convera. Intel recognized a gain of $117 million on the portion of the business and related assets contributed to Convera in which Intel did not retain an ownership interest During 2001, Intel recorded a loss of approximately $39 million as its proportionate share of Convera's net loss and recognized a combined net loss of $157 million on the impairment and subsequent sale of the remaining investment.

Note 9: Comprehensive Income

The components of other comprehensive income and related tax effects were as follows:

(In Millions)	2002	2001	2000
Change in net unrealized gain on investments, net of tax of $24, $187 and $620 in 2002, 2001 and 2000, respectively	$(44)	$(347)	$(1,153)
Less: adjustment for net gain or loss realized and included in net income, net of tax of $(14), $(99) and $1,316 in 2002, 2001 and 2000, respectively	25	184	(2,443)
Change in net unrealized gain or loss on derivatives, net of tax of $(23) and $4 in 2002 and 2001, respectively	43	(7)	—
Minimum pension liability, net of tax of $2	(6)	—	—
	$ 18	**$(170)**	**$(3,596)**

The components of accumulated other comprehensive income, net of tax, were as follows:

(In Millions)	2002	2001
Accumulated net unrealized gain on available-for-sale investments	$13	$32
Accumulated net unrealized gain (loss) on derivatives	36	(7)
Accumulated minimum pension liability	(6)	—
Total accumulated other comprehensive income	**$43**	**$25**

Note 10: Provision for Taxes

Income before taxes and the provision for taxes consisted of the following:

(Dollars in Millions)	2002	2001	2000
Income (loss) before taxes:			
U.S.	$2,165	$ (350)	$11,162
Non-U.S.	2,039	2,533	3,979
Total income before taxes	**$4,204**	**$2,183**	**$15,141**
Provision for taxes:			
Federal:			
Current	$ 542	$ 903	$ 3,809
Deferred	91	(417)	(65)
	633	486	3,744
State:			
Current	143	142	454
Non-U.S.:			
Current	292	366	473
Deferred	19	(102)	(65)
	311	264	408
Total provision for taxes	**$1,087**	**$ 892**	**$ 4,606**
Effective tax rate	**25.9%**	**40.9%**	**30.4%**

The tax benefit associated with dispositions from employee stock plans reduced taxes currently payable for 2002 by $270 million ($435 million for 2001 and $887 million for 2000).

The provision for taxes reconciles to the amount computed by applying the statutory federal rate of 35% to income before taxes as follows:

(In Millions)	2002	2001	2000
Computed expected tax	$1,471	$ 764	$5,299
State taxes, net of federal benefits	93	92	295
Non-U.S. income taxed at different rates	(248)	(336)	(363)
Non-deductible acquisition-related costs	53	667	444
Tax impact related to divestitures	(75)	—	—
Export sales benefit	(128)	(245)	(230)
Reversal of previously accrued taxes	—	—	(600)
Other	(79)	(50)	(239)
Provision for taxes	**$1,087**	**$ 892**	**$4,606**

The company reduced its tax provision for 2002 by approximately $75 million due to the tax benefit related to the sale of certain businesses in 2002.

The company reduced its tax provision for 2001 by $100 million due to an increase in the tax benefit related to export sales for 2000, including the impact of a revision in the tax law. This change in estimated taxes was reflected in the federal tax return for 2000 filed in 2001.

In 2000, the Internal Revenue Service (IRS) closed its examination of the company's tax returns for years up to and including 1998. Resolution was reached on a number of issues, including adjustments related to the intercompany allocation of profits. As part of this closure, the company reversed previously accrued taxes, reducing the tax provision for 2000 by $600 million.

During 2001, the IRS commenced an examination of years 1999 and 2000. Although the outcome of tax audits is always uncertain, management believes that adequate amounts of tax have been provided for any adjustments that are expected to result for these years.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

Significant components of the company's deferred tax assets and liabilities at fiscal year-ends were as follows:

(In Millions)	2002	2001
Deferred tax assets		
Accrued compensation and benefits	$ 185	$ 120
Accrued advertising	96	102
Deferred income	183	207
Inventory valuation and related reserves	184	209
Interest and taxes	29	89
Impairment losses on investments	256	179
Other, net	203	52
	1,136	958
Deferred tax liabilities		
Depreciation	(949)	(461)
Acquired intangibles	(110)	(280)
Unremitted earnings of certain subsidiaries	(122)	(164)
Unrealized gains on investments	(35)	(30)
Other, net	(16)	(10)
	(1,232)	(945)
Net deferred tax asset (liability)	**$ (96)**	**$ 13**

U.S. income taxes were not provided for on a cumulative total of approximately $6.3 billion of undistributed earnings for certain non-U.S. subsidiaries. The company intends to reinvest these earnings indefinitely in operations outside the U.S.

Note 11: Employee Stock Benefit Plans

Stock Option Plans

The company has a stock option plan under which officers, key employees and non-employee directors may be granted options to purchase shares of the company's authorized but unissued common stock. The company also has a broad-based stock option plan under which stock options may be granted to all employees other than officers and directors. During 2001, the Board of Directors approved an increase to the authorized shares under this plan, which made an additional 900 million shares available for grant to employees other than officers and directors. As of December 28, 2002, substantially all of our employees were participating in one of the stock option plans. The company's Executive Long-Term Stock Option Plan, under which certain key employees, including officers, were granted stock options, terminated in 1998. No further grants may be made under this plan, although options granted prior to the termination may remain outstanding. Under all of the plans, the option exercise price is equal to the fair market value of Intel common stock at the date of grant. In prior years, Intel also assumed the stock option plans and the outstanding options of certain acquired companies. No additional stock grants will be granted under these assumed plans.

Options granted by Intel currently expire no later than 10 years from the grant date and generally vest within 5 years. Additional information with respect to stock option plan activity is as follows:

(Shares in Millions)	Shares Available for Options	Outstanding Options	
		Number of Shares	Weighted Average Exercise Price
December 25, 1999	**477.8**	**611.2**	**$12.87**
Grants	(162.8)	162.8	$54.68
Options assumed in acquisitions	—	4.3	$ 5.21
Exercises	—	(107.5)	$ 4.66
Cancellations	32.6	(32.6)	$26.28
December 30, 2000	**347.6**	**638.2**	**$24.16**
Supplemental grant	(51.9)	51.9	$25.69
2002 merit grant	(67.6)	67.6	$24.37
Other grants	(118.6)	118.6	$25.48
Options assumed in acquisitions	—	9.0	$19.25
Exercises	—	(68.0)	$ 6.06
Cancellations	45.1	(48.8)	$35.01
Additional shares reserved	900.0	—	—
December 29, 2001	**1,054.6**	**768.5**	**$25.33**
Supplemental grant	(118.1)	118.1	$20.23
Other grants	(55.5)	55.5	$25.43
Exercises	—	(51.4)	$ 6.79
Cancellations	40.8	(45.3)	$33.56
December 28, 2002	**921.8**	**845.4**	**$25.31**
Options exercisable at:			
December 30, 2000		195.6	$ 7.07
December 29, 2001		230.9	$11.27
December 28, 2002		274.0	$16.57

In November 2002, a supplemental stock option grant was given to employees who had previously been granted options in 2001 and 2000 that had exercise prices above the November 2002 market price. These additional grants were made in order to retain employees, due to competitive market conditions and a decline in the company's stock price. These new options will vest in equal amounts over four years. Another supplemental stock grant was made in 2001, vesting in equal amounts over two years.

During 2001, the company granted merit-based options that would typically have been granted in 2002 in order to enhance the potential long-term retention value of these stock options. This grant is referred to in the table above as "2002 merit grant." The 2002 merit grant vests in 2007, on about the same date the options would vest if they had been granted in 2002. Merit grants made in 2002, included in "other grants" in the table above, were reduced by the shares granted in this early grant program during 2001.

The range of option exercise prices for options outstanding at December 28, 2002 was $0.01 to $87.90. This range reflects the impact of options assumed with acquired companies in addition to the fluctuating price of Intel common stock.

The following table summarizes information about options outstanding at December 28, 2002:

	Outstanding Options			Exercisable Options	
Range of Exercise Prices	Number of Shares (In Millions)	Weighted Average Contractual Life (In Years)	Weighted Average Exercise Price	Number of Shares (In Millions)	Weighted Average Exercise Price
$0.01–$16.56	153.0	3.0	$ 7.35	133.5	$ 6.42
$16.62–$20.17	126.3	4.8	$18.33	71.8	$17.87
$20.23–$21.67	136.6	9.6	$20.39	3.3	$21.04
$21.72–$25.69	186.8	8.3	$24.58	27.6	$25.12
$26.06–$38.81	138.6	7.6	$32.15	21.9	$34.67
$38.82–$87.90	104.1	7.3	$58.84	15.9	$55.32
Total	**845.4**	**6.7**	**$25.31**	**274.0**	**$16.57**

These options will expire if not exercised at specific dates through December 2012. Option exercise prices for options exercised during the three-year period ended December 28, 2002 ranged from $0.01 to $49.81.

Stock Participation Plan

Under this plan, eligible employees may purchase shares of Intel's common stock at 85% of fair market value at specific, predetermined dates. Approximately 80% of the company's employees were participating in the plan as of December 28, 2002. Of the 944 million shares authorized to be issued under the plan, 109.7 million shares remained available for issuance at December 28, 2002. Employees purchased 17.0 million shares in 2002 (13.0 million in 2001 and 8.9 million in 2000) for $338 million ($351 million in 2001 and $305 million in 2000).

SFAS No. 123 Assumptions and Fair Value

The fair value of options granted in 2002, 2001 and 2000 reported above in "Note 2: Accounting Policies" was estimated at the date of grant using a Black-Scholes option-pricing model with the following weighted average assumptions:

Employee Stock Options:	2002	2001	2000
Expected life (in years)	6.0	6.0	6.5
Risk-free interest rate	3.7%	4.9%	6.2%
Volatility	.49	.47	.42
Dividend yield	.3%	.3%	.1%

Stock Participation Plan Shares:	2002	2001	2000
Expected life (in years)	.5	.5	.5
Risk-free interest rate	1.8%	4.1%	6.1%
Volatility	.50	.54	.66
Dividend yield	.3%	.3%	.1%

The weighted average estimated fair value of employee stock options granted during 2002 was $10.89 ($12.62 in 2001 and $28.27 in 2000). The weighted average estimated fair value of shares granted under the Stock Participation Plan during 2002 was $7.23 ($8.97 in 2001 and $19.60 in 2000).

Note 12: Retirement Benefit Plans

Profit Sharing Plans

The company provides tax-qualified profit-sharing retirement plans for the benefit of eligible employees, former employees and retirees in the U.S. and certain other countries. The plans are designed to provide employees with an accumulation of funds for retirement on a tax-deferred basis and provide for annual discretionary employer contributions.

The company also provides a non-qualified profit-sharing retirement plan for the benefit of eligible employees in the U.S. This plan is designed to permit certain discretionary employer contributions and to permit employee deferral of a portion of salaries in excess of certain tax limits and deferral of bonuses. This plan is unfunded.

The company expensed $303 million for the qualified and non-qualified profit-sharing retirement plans in 2002 ($190 million in 2001 and $362 million in 2000). The company expects to fund approximately $298 million for the 2002 contribution to the qualified plan and to allocate approximately $3 million for the non-qualified profit-sharing retirement plan.

Contributions made by the company vest based on the employee's years of service. Vesting begins after three years of service in 20% annual increments until the employee is 100% vested after seven years.

Pension and Postretirement Benefit Plans

U.S. Pension Benefits. The company provides a tax-qualified defined-benefit pension plan for the benefit of eligible employees and retirees in the U.S. The plan provides for a minimum pension benefit that is determined by a participant's years of service, final average compensation (taking into account the participant's social security wage base) and the value of the company's contributions, plus earnings, in the Profit Sharing Plan. If the participant's balance in the Profit Sharing Plan exceeds the pension guarantee, the participant will receive benefits from the Profit Sharing Plan only.

Non-U.S. Pension Benefits. The company also provides defined benefit pension plans in certain other countries. The company deposits funds for certain of these plans with insurance companies, third-party trustees, or into government-managed accounts, and/or accrues for the unfunded portion of the obligation, in each case consistent with the requirements of local law. The assumptions used in calculating the obligation for the non-U.S. plans depend on the local economic environment. A substantial majority of the company's pension assets and obligations relate to non-U.S. pension plans.

Postretirement Medical Benefits. Upon retirement, eligible U.S. employees are credited with a defined dollar amount based on years of service. These credits can be used to pay all or a portion of the cost to purchase coverage in an Intel-sponsored medical plan.

Funding Policy. The company's practice is to fund the various pension plans in amounts at least sufficient to meet the minimum requirements of U.S. federal laws and regulations or applicable local laws and regulations. The assets of the various plans are invested in corporate equities, corporate debt securities, government securities and other institutional arrangements. The portfolio of each plan depends on plan design and applicable local laws. Depending on the design of the plan, local custom and market circumstances, the minimum liabilities of a plan may exceed qualified plan assets. The company accrues for all such liabilities.

The changes in the benefit obligations and plan assets for the plans described above were as follows:

(In Millions)	Pension Benefits 2002	Pension Benefits 2001	Postretirement Medical Benefits 2002	Postretirement Medical Benefits 2001
Change in benefit obligation:				
Beginning benefit obligation	$209	$176	$101	$ 83
Service cost	26	36	10	9
Interest cost	16	14	8	7
Participant contributions	4	4	—	—
Actuarial (gain) loss	17	(2)	16	4
Currency exchange rate changes	8	(15)	—	—
Acquisitions	—	4	—	—
Benefits paid to plan participants	(10)	(8)	(3)	(2)
Ending benefit obligation	**$270**	**$209**	**$132**	**$101**

(In Millions)	Pension Benefits 2002	Pension Benefits 2001	Postretirement Medical Benefits 2002	Postretirement Medical Benefits 2001
Change in plan assets:				
Beginning fair value of plan assets	$144	$142	$ —	$ —
Actual return on plan assets	(19)	(9)	—	—
Employer contributions	39	25	3	2
Plan participants' contributions	4	4	1	—
Currency exchange rate changes	5	(15)	—	—
Acquisitions	—	5	—	—
Benefits paid to participants	(10)	(8)	(3)	(2)
Ending fair value of plan assets	**$163**	**$144**	**$ 1**	**$ —**

(In Millions)	Pension Benefits 2002	Pension Benefits 2001	Postretirement Medical Benefits 2002	Postretirement Medical Benefits 2001
Funded status:				
Ending funded status	$(107)	$(65)	$(131)	$(101)
Unrecognized transition obligation	2	2	—	—
Unrecognized net actuarial (gain) loss	47	(3)	6	(10)
Unrecognized prior service cost	2	1	40	44
Net amount recognized	**$ (56)**	**$(65)**	**$ (85)**	**$ (67)**

(In Millions)	Pension Benefits 2002	Pension Benefits 2001	Postretirement Medical Benefits 2002	Postretirement Medical Benefits 2001
Amounts recognized in the balance sheet:				
Prepaid benefit cost	$ 18	$ 9	$ —	$ —
Accrued benefit liability	(82)	(74)	(85)	(67)
Deferred tax asset	2	—	—	—
Accumulated other comprehensive income	6	—	—	—
Net amount recognized	**$(56)**	**$(65)**	**$(85)**	**$(67)**

Weighted-average actuarial assumptions used to determine costs and benefit obligations for the plans were as follows:

	U.S. Pension Benefits		Non-U.S. Pension Benefits		Postretirement Medical Benefits	
	2002	2001	2002	2001	2002	2001
Discount rate	7.00%	7.50%	7.90%	7.62%	7.00%	7.50%
Expected return on plan assets	8.50%	8.50%	9.18%	9.22%	—	—
Rate of compensation increase	5.00%	5.00%	6.77%	6.19%	—	—

Asset return assumptions are required by generally accepted accounting principles and are derived, following actuarial and statistical methodologies, from the analysis of long-term historical data relevant to the country where each plan is in effect, and the investments applicable to the plan. Plans are subject to regulation under local law which may directly or indirectly affect the types of investments that a plan may hold.

The net periodic benefit cost for the plans included the following components:

	Pension Benefits			Postretirement Medical Benefits		
(In Millions)	2002	2001	2000	2002	2001	2000
Service cost	$ 28	$ 37	$ 18	$10	$ 9	$ 5
Interest cost	16	14	12	8	7	5
Expected return on plan assets	(13)	(16)	(14)	—	—	—
Amortization of prior service cost	—	1	—	4	4	2
Recognized net actuarial (gain) loss	—	1	—	—	—	(1)
Net periodic benefit cost	**$ 31**	**$ 37**	**$ 16**	**$22**	**$20**	**$11**

For 2002, pension plans with accumulated benefit obligations in excess of plan assets had accumulated benefit obligations of $68 million and plan assets of $25 million, while pension plans with projected benefit obligations in excess of plan assets had projected benefit obligations of $270 million and plan assets of $163 million. For 2001, pension plans with accumulated benefit obligations in excess of plan assets had accumulated benefit obligations of $98 million and plan assets of $60 million, while pension plans with projected benefit obligations in excess of plan assets had projected benefit obligations of $160 million and plan assets of $84 million.

Note 13: Acquisitions

All of the company's acquisitions have been accounted for using the purchase method of accounting. Consideration includes the cash paid and the value of any stock issued and options assumed, less any cash acquired, and excludes contingent employee compensation payable in cash and any debt assumed. As of July 2000, the company began to account for the intrinsic value of stock options assumed related to future services as unearned compensation within stockholders' equity (see "Note 17: Acquisition-Related Unearned Stock Compensation").

There were no acquisitions qualifying as business combinations in 2002. The acquisitions in 2001 and 2000 were entered into primarily to expand Intel's optical, wired and wireless Ethernet, and telecommunications capabilities. The operating results of all of the significant companies acquired in 2001 and 2000 have been included in the results of the Intel Communications Group operating segment from the date of acquisition.

The following table summarizes the company's business combinations completed in 2001 and 2000:

(In Millions)	Consideration	Purchased In-Process Research & Development	Goodwill	Identified Intangibles	Form of Consideration
2001					
Xircom, Inc.	$ 517	$53	$ 336	$154	Cash and options assumed
VxTel Inc.	$ 381	$68	$ 277	$ —	Cash and options assumed
Cognet, Inc.	$ 156	$ 9	$ 93	$ 20	Cash, common stock and options assumed
LightLogic, Inc.	$ 409	$46	$ 295	$ 9	Common stock and options assumed
Other	$ 228	$22	$ 153	$ —	Cash, common stock and options assumed
2000					
GIGA A/S	$1,247	$52	$1,041	$138	Cash
Basis Communications Corporation	$ 453	$21	$ 353	$117	Cash and options assumed
Trillium Digital Systems, Inc.	$ 277	$ 8	$ 129	$ 98	Cash, common stock and options assumed
Ziatech Corporation	$ 222	$18	$ 147	$ 38	Cash and options assumed
Other	$ 513	$10	$ 477	$ 5	Cash and options assumed

Other business combinations in the above summary represent 7 business combination transactions in 2001 that were not individually significant (13 in 2000).

Purchase consideration for acquisitions in 2001 included 21.0 million unregistered shares of Intel common stock. Of these shares, 5.2 million were contingent upon the continued employment of certain employees and/or meeting performance criteria, and approximately 2.8 million of the contingent shares have subsequently been issued. An additional 900,000 registered shares are issuable to certain employees contingent upon meeting certain performance criteria and are not included in purchase consideration. Of these shares, approximately 600,000 have subsequently been issued, and approximately 200,000 have been forfeited as certain milestones were not met. Further, $224 million in cash compensation was contingent upon the continued employment of certain employees and/or meeting performance criteria and was not included in purchase consideration, of which approximately $85 million had been paid and approximately $10 million had been forfeited. Of the $129 million remaining to be paid, approximately $75 million was not recorded in the company's balance sheet.

For 2000, purchase consideration included 2.6 million unregistered shares of Intel common stock, of which 1.2 million shares were contingent upon the continued employment of certain employees and have subsequently been issued. Additionally, $37 million in cash compensation was contingent upon the continued employment of certain employees, of which approximately $34 million had been paid.

During 2002, the company recognized a $75 million tax benefit related to sales of the stock of certain previously acquired companies, primarily Ziatech. Also during 2002, the company wrote off acquisition-related identified intangibles of $127 million, related to a portion of the developed technology acquired with the Xircom and Trillium acquisitions. In 2001, the company wrote off acquisition-related identified intangibles of $26 million and goodwill of $98 million, related to acquisitions made prior to 2000.

For 2001, $198 million was allocated to purchased in-process research and development (IPR&D) and expensed upon acquisition of the above companies ($109 million for 2000), because the technological feasibility of products under development had not been established and no future alternative uses existed. The fair value of the IPR&D was determined using the income approach, which discounts expected future cash flows from projects under development to their net present value. Each project was analyzed to determine the technological innovations included; the utilization of core technology; the complexity, cost and time to complete

development; any alternative future use or current technological feasibility; and the stage of completion. Future cash flows were estimated, taking into account the expected life cycles of the products and the underlying technology, relevant market sizes and industry trends. The company determined a discount rate for each project based on the relative risks inherent in the project's development horizon, the estimated costs of development, and the level of technological change in the project and the industry, among other factors.

Note 14: Acquisition of Development-Stage Operations

During 2002, the company acquired three development-stage operations in exchange for total consideration of approximately $57 million. Approximately $35 million of the consideration was allocated to acquisition-related developed technology, $20 million was allocated to IPR&D, and the remaining amount represented the value of net tangible assets. There was no allocation of purchase consideration to goodwill. The operating results of each of these acquisitions since the date of acquisition have been included in the operating results of the acquiring business unit within either the Intel Communications Group operating segment or the "all other" category, as appropriate, for segment reporting purposes.

Note 15: Goodwill

Goodwill by operating segment was adjusted for the years ended December 29, 2001 and December 28, 2002, as follows:

(In Millions)	Intel Communications Group	Wireless Communications and Computing Group	Intel Architecture Business	All Other	Total
December 30, 2000	**$ 3,926**	**$ 953**	**$ 92**	**$6**	**$ 4,977**
Additions	1,148	14	23	6	1,191
Amortization	(1,242)	(323)	(45)	(5)	(1,615)
Impairments	(98)	—	—	—	(98)
Other adjustments	(81)	(41)	(2)	(1)	(125)
December 29, 2001	**3,653**	**603**	**68**	**6**	**4,330**
Workforce-in-place reclassified, net of deferred tax	12	8	—	—	20
Other adjustments	(21)	—	1	—	(20)
December 28, 2002	**$ 3,644**	**$ 611**	**$ 69**	**$6**	**$ 4,330**

During 2002, no goodwill was acquired or impaired. During 2001, other adjustments of $125 million were primarily related to the reduction of a valuation allowance on deferred tax assets due to changes in the realizability of certain tax benefits related to companies acquired in 2001 and prior years.

Note 16: Identified Intangible Assets

During 2002, the company acquired developed technology valued at $35 million, with an amortization period of 2 years. During 2001, acquisition-related intangibles acquired totaled $206 million, the majority of which was developed technology, with a weighted average amortization period of 4 years. Intellectual property assets acquired in 2002 amounted to $317 million, with a weighted average amortization period of 7 years ($157 million in 2001 with a weighted average amortization period of 6 years). Of the 2002 amount, $295 million represented the value of intellectual property assets capitalized as a result of payments under the settlement agreement with Intergraph Corporation related to the lawsuits in Alabama and Texas (see "Note 20: Contingencies"). The value of the Intergraph intellectual property assets and the amount of the charge to cost of sales in 2002 were derived from the historical and expected future revenue from sales of the relevant microprocessors.

Identified intangible assets as of December 28, 2002 consisted of the following:

(In Millions)	Gross Assets	Accumulated Amortization	Net
Acquisition-related developed technology	$1,125	$ (727)	$398
Other acquisition-related intangibles	74	(52)	22
Intellectual property assets	750	(336)	414
Total identified intangible assets	**$1,949**	**$(1,115)**	**$834**

Identified intangible assets as of December 29, 2001 consisted of the following:

(In Millions)	Gross Assets	Accumulated Amortization	Net
Acquisition-related developed technology	$1,127	$(421)	$ 706
Other acquisition-related intangibles	293	(202)	91
Intellectual property assets	438	(221)	217
Total identified intangible assets	**$1,858**	**$(844)**	**$1,014**

All of the company's identified intangible assets are subject to amortization. Amortization of acquisition-related intangibles and costs included the following:

(In Millions)	2002	2001	2000
Amortization of acquisition-related intangibles	$246	$347	$248
Impairment of acquisition-related intangibles	127	26	—
Amortization of acquisition-related unearned stock compensation	90	174	26
Other acquisition-related costs	85	81	2
Total	**$548**	**$628**	**$276**

Acquisition-related intangible impairments of $127 million in 2002 represented write-offs of developed technology and other acquisition-related intangibles related to prior-year acquisitions. The amount of the impairment was determined using a fair-value approach based on discounted future cash flows. Other acquisition-related costs include the amortization of deferred cash payments that represent contingent compensation to employees related to previous acquisitions. The compensation is being recognized over the period earned. All amortization of acquisition-related intangibles and costs, including impairments, is included in "all other" for segment reporting purposes.

Amortization of intellectual property assets was $120 million in 2002 ($89 million in 2001 and $76 million in 2000). The amortization of an intellectual property asset is generally included in either cost of sales or research and development.

Based on the carrying value of identified intangible assets recorded at December 28, 2002, and assuming no subsequent impairment of the underlying assets, the annual amortization expense, excluding acquisition-related stock compensation and other acquisition-related costs, is expected to be as follows:

(In Millions)	2003	2004	2005	2006	2007
Acquisition-related intangibles	$199	$122	$82	$17	$—
Intellectual property assets	$112	$ 86	$68	$54	$23

Note 17: Acquisition-Related Unearned Stock Compensation

The company records acquisition-related purchase consideration as unearned stock-based compensation in accordance with FASB Interpretation No. 44, "Accounting for Certain Transactions Involving Stock Compensation." During 2002, the company recorded no such unearned stock-based compensation ($255 million

recorded in 2001). Acquisition-related unearned stock compensation includes the portion of the purchase consideration related to shares issued contingent upon the continued employment of selected employee stockholders and/or the completion of specified milestones. The unearned stock-based compensation also includes the intrinsic value of stock options assumed in connection with business combinations that is earned as the employees provide future services. The compensation is being recognized over the period earned, and the expense is included in the amortization of acquisition-related intangibles and costs. Amortization of unearned stock compensation was $90 million for 2002 ($174 million for 2001 and $26 million for 2000). For 2002, unearned stock compensation was reduced by $13 million related to a net loss on sales of businesses that was included in operating income, and by another $12 million related to other adjustments.

Note 18: Impairment of Long-Lived Assets

In June 2002, the company announced its intention to wind down its Intel® Online Services Web hosting business over four quarters, due to market trends and financial forecasts for the hosting services industry. As a result, the company recognized a related $106 million pre-tax charge in cost of sales. Approximately $90 million of that charge related to the impairment of the web hosting business' assets, including leasehold improvements and server equipment. The amount of the impairment was determined based on discounted future cash flows and comparable market prices. The remaining $16 million represented the accrual of lease and other exit-related costs. The total charge was reflected in the "all other" category for segment reporting purposes.

Note 19: Commitments

The company leases a portion of its capital equipment and certain of its facilities under operating leases that expire at various dates through 2026. Rental expense was $163 million in 2002, $182 million in 2001 and $123 million in 2000. Minimum rental commitments under all non-cancelable leases with an initial term in excess of one year are payable as follows: 2003—$97 million; 2004—$74 million; 2005—$63 million; 2006—$40 million; 2007—$28 million; 2008 and beyond—$202 million. Commitments for construction or purchase of property, plant and equipment approximated $2.0 billion at December 28, 2002. In addition, at the end of 2002, acquisition-related deferred cash compensation obligations not included in the company's balance sheet totaled approximately $75 million (see "Note 13: Acquisitions").

Note 20: Contingencies

In November 1997, Intergraph Corporation filed suit in Federal District Court in Alabama, generally alleging that Intel attempted to coerce Intergraph into relinquishing certain patent rights and that Intel infringed five Intergraph microprocessor-related patents. This suit included alleged violations of antitrust laws and various state law claims.

In August 2001, Intergraph filed a second suit in the U.S. District Court for the Eastern District of Texas, alleging that the Intel® Itanium® processor infringes two Intergraph microprocessor-related patents, and seeking an injunction and unspecified damages.

In April 2002, Intel and Intergraph announced that they entered into a settlement agreement, pursuant to which they agreed to settle the Alabama lawsuit and dismiss it with prejudice. Pursuant to the settlement agreement, Intel made a cash payment of $300 million to Intergraph and in return received a license under all Intergraph patents and patent applications filed before April 4, 2012, excluding the patents at issue in the Texas case. Intel has also obtained ownership of 15 Intergraph patents and a general release covering all matters in controversy in the Alabama case. Intel recorded $155 million of the $300 million payment as a charge to cost of sales in the first quarter of 2002. The remaining $145 million represents the value of the license received and has been capitalized as an intangible asset (see "Note 16: Identified Intangible Assets").

In October 2002, the Texas court ruled that Intel infringed both patents at issue in that case, and the Texas court has declined to reconsider its decision. Pursuant to the settlement agreement, Intel paid Intergraph a further $150 million. Intel plans to appeal the trial court's decision, and if Intel prevails on appeal, no further payments will be due to Intergraph under the settlement agreement. However, if Intergraph prevails on either patent, the settlement agreement provides that Intel must pay Intergraph an additional $100 million and will

receive a license for the patents at issue in the case. The $150 million payment to Intergraph has been capitalized as an intangible asset, and the additional $100 million payment, if required, is also expected to be capitalized.

In May 2000, various plaintiffs filed a class-action lawsuit in the United States District Court for the Northern District of California, alleging violations of the Securities Exchange Act of 1934 and SEC Rule 14d-10 in connection with Intel's acquisition of DSP Communications, Inc. The complaint alleged that Intel and CWC (Intel's wholly owned subsidiary at the time) agreed to pay certain DSP executives additional consideration of $15.6 million not offered or paid to other stockholders. The alleged purpose of this payment to the insiders was to obtain DSP insiders' endorsement of Intel's tender offer in violation of the anti-discrimination provision of Section 14(d)(7) and Rule 14d-10. The plaintiffs seek unspecified damages for the class, and unspecified costs and expenses. In July 2002, the District Court granted Intel's motion for summary judgment, but in October 2002, the District Court vacated the summary judgment. In February 2003, the parties reached a tentative settlement agreement pending court review and approval. The settlement is not expected to have a material impact on the company's results of operations or financial condition.

In September 2001, VIA Technologies, Inc. and Centaur Technology, Inc. sued Intel in the United States District Court for the Western District of Texas, alleging that the Intel® Pentium® 4 processor infringes a VIA microprocessor-related patent. In October 2001, Intel filed counterclaims against VIA, asserting that VIA's C3* microprocessors infringe Intel patents. In January 2002, VIA amended its complaint to allege that Intel's Pentium® II, Pentium® III, Celeron® and Pentium 4 processors infringe another patent. In August 2002, Intel added an additional claim that VIA's C3 microprocessors infringe an additional Intel patent, and VIA added an additional claim that Intel's Pentium III and Pentium 4 processors infringe another VIA patent. The trial is set for April 7, 2003. VIA seeks an injunction to prohibit Intel from selling the above-mentioned Intel microprocessors, as well as damages in an unspecified amount covering past sales of such Intel products. Intel seeks an injunction against VIA to prohibit VIA from selling the above-mentioned VIA microprocessors, as well as damages in an unspecified amount covering past sales of such VIA products. Intel disputes the plaintiffs' claims and intends to defend the lawsuit vigorously.

In September, October and November 2001, various plaintiffs filed five class-action lawsuits against Intel alleging violations of the Securities Exchange Act of 1934. The five complaints were consolidated in an amended complaint filed in the U.S. District Court for the Northern District of California. The amended complaint alleges that purchasers of Intel stock between July 19, 2000 and September 29, 2000 were misled by false and misleading statements by Intel and certain of its officers and directors concerning the company's business and financial condition. In October 2002, the U.S. District Court granted Intel's motion to dismiss the amended complaint without prejudice, and the plaintiffs filed a second amended complaint in November 2002. In addition, various plaintiffs filed stockholder derivative complaints in California Superior Court and Delaware Chancery Court against the company's directors and certain officers, alleging that they mismanaged the company and otherwise breached their fiduciary obligations to the company. In May 2002, the California Superior Court sustained Intel's demurrer to the California complaint and granted plaintiffs leave to file an amended complaint, which they then filed. The company filed a demurrer to the amended complaint, which the court sustained without prejudice to the plaintiffs filing a third amended complaint, which the plaintiffs have filed. All complaints seek unspecified damages. The company disputes all plaintiffs' claims in all actions and intends to defend the lawsuits vigorously.

In June 2002, various plaintiffs filed a lawsuit in the Third Judicial Circuit Court, Madison County, Illinois, against Intel, Hewlett-Packard Co., HPDirect, Inc. and Gateway Inc., alleging that the defendants' advertisements and statements misled the public by suppressing and concealing the alleged material fact that systems that use the Intel Pentium 4 processor are less powerful and slower than systems using the Intel Pentium III processor and a competitor's processors. The plaintiffs claim that their lawsuit should be treated as a nationwide class action. The plaintiffs seek unspecified damages, and attorney's fees and costs. The company disputes the plaintiffs' claims and intends to defend the lawsuit vigorously.

The company is currently a party to various claims and legal proceedings, including those noted above. If management believes that a loss arising from these actions is probable and can reasonably be estimated, the company records the amount of the loss, or the minimum estimated liability when the loss is estimated using a range and no point is more probable than another. As additional information becomes available, any potential liability related to these actions is assessed and the estimates are revised, if necessary. Based on currently available information, management believes that the ultimate outcome of these actions, individually and in the aggregate, will not have a material adverse effect on the company's financial position or overall trends in results of operations. However, litigation is subject to inherent uncertainties and unfavorable rulings could occur. An unfavorable ruling could include money damages or an injunction prohibiting Intel from selling one or more products. If an unfavorable ruling were to occur, there exists the possibility of a material adverse impact on the results of operations of the period in which the ruling occurs, or future periods.

Intel has been named to the California and U.S. Superfund lists for three of its sites and has completed, along with two other companies, a Remedial Investigation/Feasibility study with the U.S. Environmental Protection Agency (EPA) to evaluate the groundwater in areas adjacent to one of its former sites. The EPA has issued a Record of Decision with respect to a groundwater cleanup plan at that site, including expected costs to complete. Under the California and U.S. Superfund statutes, liability for cleanup of this site and the adjacent area is joint and several. The company, however, has reached agreement with those same two companies which significantly limits the company's liabilities under the proposed cleanup plan. Also, the company has completed extensive studies at its other sites and is engaged in cleanup at several of these sites. In the opinion of management, the potential losses to the company in excess of amounts already accrued arising out of these matters would not have a material adverse effect on the company's financial position or overall trends in results of operations, even if joint and several liability were to be assessed.

The estimate of the potential impact on the company's financial position or overall results of operations for the above legal and environmental proceedings could change in the future.

Note 21: Operating Segment and Geographic Information

The company designs, develops, manufactures and markets computing and communications products at various levels of integration. The company reports three product-line operating segments: the Intel Architecture business, which is composed of the Desktop Platforms Group, the Mobile Platforms Group and the Enterprise Platforms Group; the Wireless Communications and Computing Group; and the Intel Communications Group.

Beginning in 2002, the company's Executive Office consists of Chief Executive Officer (CEO) Craig R. Barrett and President and Chief Operating Officer (COO) Paul S. Otellini. The CEO and COO have joint responsibility as the Chief Operating Decision Maker (CODM), as defined by SFAS No. 131. The CODM allocates resources to and assesses the performance of each operating segment using information about their revenue and operating profit before interest and taxes.

The Intel Architecture operating segment's products include microprocessors and related chipsets and motherboards based on the Intel® NetBurst™ microarchitecture (including the Pentium 4 processor), as well as the P6 microarchitecture (including the Pentium III processor). Sales of microprocessors and related products based on the Intel NetBurst microarchitecture made up the majority of the company's 2002 consolidated net revenue and gross margin. For the same period, sales of microprocessors and related products based on the P6 microarchitecture made up a significant but steadily decreasing portion of the company's consolidated net revenue and gross margin. For 2001, sales of products based on the P6 microarchitecture made up the majority of the company's net revenue and a substantial majority of gross margin. Additionally, for 2001, sales of products based on the Intel NetBurst microarchitecture were a significant and rapidly increasing portion of the company's consolidated net revenue and gross margin. The Wireless Communications and Computing Group's products include flash memory, application processors, and cellular baseband chipsets for cellular handsets and handheld devices. The Intel Communications Group's products include Ethernet connectivity products, network processing components, embedded control chips (microcontrollers) and optical products. The company's products in all operating segments are sold directly to original equipment manufacturers, and through retail and industrial distributors, resellers and e-Business channels throughout the world.

In addition to these operating segments, the company has sales and marketing, manufacturing, finance and administration groups. Expenses of these groups are allocated to the operating segments and are included in the operating results reported below.

The "all other" category includes acquisition-related costs, including amortization of acquisition-related intangibles and in-process research and development. Acquisition-related costs also include charges for impairment of goodwill and acquisition-related intangibles, including a $127 million impairment of identified intangibles recorded in 2002, related to prior-year acquisitions. "All other" also includes the results of operations of seed businesses that support the company's initiatives and the results of the Web hosting business, including the charge of $106 million recorded in 2002 related to winding down this business. "All other" also includes certain corporate-level operating expenses, including a portion of profit-dependent bonus and other expenses not allocated to the operating segments. For 2001 and 2000, "all other" also included goodwill amortization; however, goodwill is no longer amortized, beginning in 2002.

The company does not identify or allocate assets by operating segment, and does not allocate depreciation as such to the operating segments, nor does the CODM evaluate operating segments on these criteria. Operating segments do not record intersegment revenue, and, accordingly, there is none to be reported. The company does not allocate interest and other income, interest expense or taxes to operating segments. Except as discussed above, the accounting policies for segment reporting are the same as for the company as a whole.

Revenue and operating income or loss for reportable segments for the three years ended December 28, 2002 were as follows:

(In Millions)	2002	2001	2000
Intel Architecture Business			
Revenue	$22,316	$21,446	$27,301
Operating income	$ 6,562	$ 6,252	$12,511
Wireless Communications and Computing Group			
Revenue	$ 2,239	$ 2,232	$ 2,669
Operating income (loss)	$ (294)	$ (256)	$ 608
Intel Communications Group			
Revenue	$ 2,080	$ 2,580	$ 3,483
Operating income (loss)	$ (622)	$ (735)	$ 319
All Other			
Revenue	$ 129	$ 281	$ 273
Operating loss	$ (1,264)	$ (3,005)	$ (3,043)
Total			
Revenue	$26,764	$26,539	$33,726
Operating income	$ 4,382	$ 2,256	$10,395

In 2002, one customer accounted for approximately 16% of the company's revenue while another customer accounted for approximately 15%. In 2001, two customers each accounted for approximately 14% of the company's revenue. In 2000, one customer accounted for approximately 20% of the company's revenue while another customer accounted for approximately 13% of the company's revenue. During 2002, two of the company's top customers merged and are therefore presented as a single customer. For comparability purposes, the 2001 and 2000 customer revenue percentages have been restated to reflect this merger. A substantial majority of the sales to these customers were Intel Architecture business products.

Geographic revenue information for the three years ended December 28, 2002 is based on the location of the customer. Property, plant and equipment information is based on the physical location of the assets at the end of each of the fiscal years.

Revenue from unaffiliated customers by geographic region/country was as follows:

(In Millions)	2002	2001	2000
United States	$ 7,698	$ 8,233	$12,382
Other Americas	950	1,149	1,530
	8,648	9,382	13,912
China	3,199	2,333	2,148
Taiwan	2,854	2,531	2,382
Other Asia-Pacific	4,020	3,444	4,144
	10,073	8,308	8,674
Europe	6,139	6,500	8,066
Japan	1,904	2,349	3,074
Total revenue	**$26,764**	**$26,539**	**$33,726**

Net property, plant and equipment by country was as follows:

(In Millions)	2002	2001
United States	$14,518	$14,484
Ireland	1,405	1,436
Other countries	1,924	2,201
Total property, plant and equipment, net	**$17,847**	**$18,121**

REPORT [redacted]RNST & YOUNG LLP, INDEPENDENT [redacted]DITORS

The Board of Directors and Stockholders, Intel Corporation

We have audited the accompanying consolidated balance sheets of Intel Corporation as of December 28, 2002 and December 29, 2001, and the related consolidated statements of income, stockholders' equity, and cash flows for each of the three years in the period ended December 28, 2002. Our audits also included the financial statement schedule listed in the Index at Item 15(a). These financial statements and schedule are the responsibility of the company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Intel Corporation at December 28, 2002 and December 29, 2001, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 28, 2002, in conformity with accounting principles generally accepted in the United States. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

As discussed in Note 2 to the consolidated financial statements, effective December 30, 2001, the company adopted Statement of Financial Accounting Standards No. 142, "Goodwill and Other Intangible Assets."

/s/ Ernst & Young LLP

San Jose, California
January 13, 2003

INTEL CORPORATION
FINANCIAL INFORMATION BY QUARTER (UNAUDITED)

(In Millions—Except Per Share Amounts) 2002 For Quarter Ended	December 28	September 28	June 29	March 30
Net revenue	$7,160	$6,504	$6,319	$6,781
Gross margin	$3,696	$3,173	$2,969	$3,480
Amortization of goodwill	$ —	$ —	$ —	$ —
Amortization and impairment of acquisition-related intangibles and costs	$ 106	$ 102	$ 229	$ 111
Purchased in-process research and development	$ —	$ 6	$ 14	$ —
Net income	$1,049	$ 686	$ 446	$ 936
Basic earnings per share	$ .16	$ .10	$ .07	$ .14
Diluted earnings per share	$ .16	$ .10	$ .07	$ .14
Dividends per share				
Declared	$ —	$ .04	$ —	$ .04
Paid	$ .02	$ .02	$ .02	$ .02
Market price range common stock[1]				
High	$21.05	$19.59	$31.20	$35.79
Low	$13.22	$14.13	$18.27	$28.55

(In Millions—Except Per Share Amounts) 2001 For Quarter Ended	December 29	September 29	June 30	March 31
Net revenue	$6,983	$6,545	$6,334	$6,677
Gross margin	$3,581	$2,992	$3,027	$3,452
Amortization of goodwill	$ 405	$ 447	$ 417	$ 441
Amortization and impairment of acquisition-related intangibles and costs	$ 145	$ 162	$ 177	$ 144
Purchased in-process research and development	$ —	$ —	$ 123	$ 75
Net income	$ 504	$ 106	$ 196	$ 485
Basic earnings per share[2]	$ .08	$ .02	$ .03	$ .07
Diluted earnings per share[3]	$ .07	$ .02	$ .03	$ .07
Dividends per share				
Declared	$ —	$ .04	$ —	$ .04
Paid	$ .02	$ .02	$ .02	$ .02
Market price range common stock[1]				
High	$34.61	$32.11	$32.49	$37.81
Low	$19.54	$19.30	$22.63	$24.63

1 *Intel's common stock (symbol INTC) trades on The NASDAQ Stock Market* and is quoted in the* Wall Street Journal *and other newspapers. Intel's common stock also trades on The Swiss Exchange. At December 28, 2002, there were approximately 240,665 registered holders of common stock. All stock prices are closing prices per The NASDAQ Stock Market.*

2 *Amortization of goodwill reduced basic earnings per share in 2001 by $0.23. Goodwill is no longer amortized, beginning in 2002.*

3 *Amortization of goodwill reduced diluted earnings per share in 2001 by $0.22.*

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

PART III

ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The information regarding Directors and Executive Officers appearing under the heading "Proposal 1: Election of Directors" and "Other Matters—Section 16(a) Beneficial Ownership Reporting Compliance" of our proxy statement relating to the 2003 Annual Meeting of Stockholders (the "2003 Proxy Statement") is incorporated by reference. The information under the heading "Executive Officers" in Item 1 of this Form 10-K is also incorporated by reference in this section.

ITEM 11. EXECUTIVE COMPENSATION

The information appearing under the headings "Directors' Compensation," "Employment Contracts and Change of Control Arrangements," "Report of the Compensation Committee on Executive Compensation," "Stock Price Performance Graph," and "Executive Compensation" of the 2003 Proxy Statement is incorporated by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information appearing in our 2003 Proxy Statement under the heading "Security Ownership of Certain Beneficial Owners and Management" is incorporated by reference.

See the information contained under the heading "Employee Stock Options" within Item 7 of this Form 10-K regarding shares authorized for issuance under equity compensation plans approved by stockholders and not approved by stockholders. For descriptions of our equity compensation plans, including the 1997 Stock Option Plan, which has not been approved by stockholders, see "Employee Stock Options" within Item 7 and "Note 11: Employee Stock Benefit Plans" under "Notes to Consolidated Financial Statements" within Item 8 of this Form 10-K.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

The information appearing in our 2003 Proxy Statement under the heading "Certain Relationships and Related Transactions" is incorporated by reference.

ITEM 14. CONTROLS AND PROCEDURES

Quarterly Evaluation of the Company's Disclosure Controls and Internal Controls

Within the 90 days prior to the date of this Annual Report on Form 10-K, the company evaluated the effectiveness of the design and operation of its "disclosure controls and procedures" (Disclosure Controls), and its "internal controls and procedures for financial reporting" (Internal Controls). This evaluation (the Controls Evaluation) was performed under the supervision and with the participation of management, including our Chief Executive Officer (CEO) and Chief Financial Officer (CFO).

CEO and CFO Certifications

Immediately following the Signatures section of this Annual Report, there are two separate forms of "Certifications" of the CEO and the CFO. The first form of Certification (the Rule 13a-14 Certification) is required in accord with Rule 13a-14 of the Securities Exchange Act of 1934 (the Exchange Act). This Controls and Procedures section of the Annual Report includes the information concerning the Controls Evaluation referred to in the Rule 13a-14 Certifications and it should be read in conjunction with the Rule 13a-14 Certifications for a more complete understanding of the topics presented.

Disclosure Controls and Internal Controls

Disclosure Controls are procedures designed to ensure that information required to be disclosed in our reports filed under the Exchange Act, such as this Annual Report, is recorded, processed, summarized and reported within the time periods specified in the U.S. Securities and Exchange Commission's (the SEC) rules and forms. Disclosure Controls are also designed to ensure that such information is accumulated and communicated to our management, including the CEO and CFO, as appropriate to allow timely decisions regarding required disclosure. Internal Controls are procedures designed to provide reasonable assurance that (1) our transactions are properly authorized; (2) our assets are safeguarded against unauthorized or improper use; and (3) our transactions are properly recorded and reported, all to permit the preparation of our financial statements in conformity with generally accepted accounting principles.

Limitations on the Effectiveness of Controls

The company's management, including the CEO and CFO, does not expect that our Disclosure Controls or our Internal Controls will prevent all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with its policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Scope of the Controls Evaluation

The evaluation of our Disclosure Controls and our Internal Controls included a review of the controls' objectives and design, the company's implementation of the controls and the effect of the controls on the information generated for use in this Annual Report. In the course of the Controls Evaluation, we sought to identify data errors, controls problems or acts of fraud and confirm that appropriate corrective actions, including process improvements, were being undertaken. This type of evaluation is performed on a quarterly basis so that the conclusions of management, including the CEO and CFO, concerning controls effectiveness can be reported in our Quarterly Reports on Form 10-Q and Annual Report on Form 10-K. Our Internal Controls are also evaluated on an ongoing basis by our Internal Audit Department and by other personnel in

our Finance organization, as well as our independent auditors who evaluate [redacted] in connection with determining their auditing procedures related to their report on our annual financial statements and not to provide assurance on our Internal Controls. The overall goals of these various evaluation activities are to monitor our Disclosure Controls and our Internal Controls, and to modify them as necessary; our intent is to maintain the Disclosure Controls and the Internal Controls as dynamic systems that change as conditions warrant.

Among other matters, we sought in our evaluation to determine whether there were any "significant deficiencies" or "material weaknesses" in the company's Internal Controls, and whether the company had identified any acts of fraud involving personnel with a significant role in the company's Internal Controls. This information was important both for the Controls Evaluation generally, and because items 5 and 6 in the Rule 13a-14 Certifications of the CEO and CFO require that the CEO and CFO disclose that information to our Board's Audit Committee and our independent auditors, and report on related matters in this section of the Annual Report. In professional auditing literature, "significant deficiencies" are referred to as "reportable conditions," which are control issues that could have a significant adverse effect on the ability to record, process, summarize and report financial data in the financial statements. Auditing literature defines "material weakness" as a particularly serious reportable condition where the internal control does not reduce to a relatively low level the risk that misstatements caused by error or fraud may occur in amounts that would be material in relation to the financial statements and the risk that such misstatements would not be detected within a timely period by employees in the normal course of performing their assigned functions. We also sought to deal with other controls matters in the Controls Evaluation, and in each case if a problem was identified, we considered what revision, improvement and/or correction to make in accordance with our ongoing procedures.

From the date of the Controls Evaluation to the date of this Annual Report, there have been no significant changes in Internal Controls or in other factors that could significantly affect Internal Controls, including any corrective actions with regard to significant deficiencies and material weaknesses. However, in January 2003, we implemented new general ledger, budget and planning software, as well as new business processes and procedures to support the software, as part of an ongoing implementation of enterprise-wide software. These changes are the result of our normal business process to evaluate and upgrade or replace our systems software and related business processes to support our evolving operational needs. The new software and processes will be used to record and report our financial results for fiscal 2003.

Conclusions

Based upon the Controls Evaluation, our CEO and CFO have concluded that, subject to the limitations noted above, our Disclosure Controls are effective to ensure that material information relating to Intel and its consolidated subsidiaries is made known to management, including the CEO and CFO, particularly during the period when our periodic reports are being prepared, and that our Internal Controls are effective to provide reasonable assurance that our financial statements are fairly presented in conformity with generally accepted accounting principles.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K

(a) 1. Financial Statements: See "Index to Consolidated Financial Statements" under Item 8 on page 44 of this Annual Report.

2. Financial Statement Schedule: See "Schedule II" on page 83 of this Annual Report.

3. Exhibits

The exhibits listed in the accompanying index to exhibits are filed or incorporated by reference as part of this Annual Report.

(b) Reports on Form 8-K

On October 16, 2002, Intel filed a report on Form 8-K relating to financial information for Intel Corporation for the quarter ended September 28, 2002, and forward-looking statements relating to 2002 and the fourth quarter of 2002, as presented in a press release of October 15, 2002.

On December 5, 2002, Intel filed a report on Form 8-K relating to an announcement regarding an update to forward-looking statements relating to 2002 and the fourth quarter of 2002, as presented in a press release of December 5, 2002.

*Intel, the Intel logo, Intel Inside, Celeron, Intel386, Intel486, i960, Intel Centrino, Intel NetBurst, Intel SpeedStep, Intel StrataFlash, Intel Xeon, Intel XScale, Itanium, MMX, Pentium and Pentium III Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. *Other names and brands may be claimed as the property of others.*

SCHEDULE II—VALUATION AND QUALIFYING ACCOUNTS

December 30, 2000, December 29, 2001 and December 28, 2002
(In Millions)

	Balance at Beginning of Year	Additions Charged to Costs and Expenses	Deductions *(A)*	Balance at End of Year
2000				
Allowance for Doubtful Receivables	$67	$33	$16	$84
2001				
Allowance for Doubtful Receivables	$84	$ 5	$21	$68
2002				
Allowance for Doubtful Receivables	$68	$10	$21	$57

(A) Uncollectible accounts written off, net of recoveries.

INDEX TO EXHIBITS

(Item 15(a))

	Description
3.1	Intel Corporation Restated Certificate of Incorporation dated May 11, 1993, Certificate of Amendment to the Restated Certificate of Incorporation dated June 2, 1997 (incorporated by reference to Exhibit 3.1 of Registrant's Form 10-K as filed on March 27, 1998) and Certificate of Amendment to the Restated Certificate of Incorporation dated May 18, 2000 (incorporated by reference to Exhibit 3.1 of Registrant's Form 10-Q as filed on August 14, 2000).
3.2	Intel Corporation Bylaws as amended (incorporated by reference to Exhibit 3.2 of Registrant's Form 10-Q for the quarter ended September 28, 2002 as filed on November 6, 2002).
4.1	Agreement to Provide Instruments Defining the Rights of Security Holders (incorporated by reference to Exhibit 4.1 of Registrant's Form 10-K as filed on March 18, 1986).
10.1 **	Intel Corporation 1984 Stock Option Plan as amended and restated, effective July 16, 1997 (incorporated by reference to Exhibit 10.1 of Registrant's Form 10-Q for the quarter ended June 27, 1998 as filed on August 11, 1998).
10.2 **	Intel Corporation 1988 Executive Long-Term Stock Option Plan as amended and restated, effective July 16, 1997 (incorporated by reference to Exhibit 10.2 of Registrant's Form 10-Q for the quarter ended June 27, 1998 as filed on August 11, 1998).
10.3 **	Intel Corporation Executive Officer Bonus Plan as amended and restated, effective January 1, 2000 (incorporated by reference to Exhibit A of Registrant's Proxy Statement on Schedule 14A as filed on April 12, 2000).
10.4 **	Intel Corporation Sheltered Employee Retirement Plan Plus, as amended and restated, effective July 15, 1996 (incorporated by reference to Exhibit 4.1.1 of Registrant's Post-Effective Amendment No. 1 to Registration Statement on Form S-8 as filed on July 17, 1996).
10.5 **	Special Deferred Compensation Plan (incorporated by reference to Exhibit 4.1 of Registrant's Registration Statement on Form S-8 as filed on February 2, 1998).
10.6 **	Intel Corporation Deferral Plan for Outside Directors, effective July 1, 1998 (incorporated by reference to Exhibit 10.6 of the Registrant's Form 10-K as filed on March 26, 1999).
10.7	Intel Corporation 1997 Stock Option Plan, as amended and restated July 16, 1997.
12.	Statement Setting Forth the Computation of Ratios of Earnings to Fixed Charges.
21.	Intel subsidiaries.
23.	Consent of Ernst & Young LLP, independent auditors.

** *Compensation plans or arrangements in which directors and executive officers are eligible to participate.*

Signatures and Certifications of Chief Executive Officer and the Chief Financial Officer of the Company

The following pages include the Signatures page for this Form 10-K, and two separate Certifications of the Chief Executive Officer (CEO) and the Chief Financial Officer (CFO) of the company.

The first form of Certification is required by Rule 13a-14 (the Rule 13a-14 Certification) under the Securities Exchange Act of 1934 (the Exchange Act). The Rule 13a-14 Certification includes references to an evaluation of the effectiveness of the design and operation of the company's "disclosure controls and procedures" and its "internal controls and procedures for financial reporting." Item 14 of Part III of this Annual Report presents the conclusions of the CEO and the CFO about the effectiveness of such controls based on and as of the date of such evaluation (relating to Item 4 of the Rule 13a-14 Certification), and contains additional information concerning disclosures to the company's Audit Committee and independent auditors with regard to deficiencies in internal controls and fraud (Item 5 of the Rule 13a-14 Certification) and related matters (Item 6 of the Rule 13a-14 Certification).

The second form of Certification is required by section 1350 of chapter 63 of title 18 of the United States Code.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

INTEL CORPORATION
Registrant

By: /s/ ANDY D. BRYANT

Andy D. Bryant
Executive Vice President, Chief Financial Officer and Principal Accounting Officer
March 10, 2003

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

/s/ CRAIG R. BARRETT

Craig R. Barrett
Chief Executive Officer, Director and Principal Executive Officer
March 10, 2003

/s/ REED E. HUNDT

Reed E. Hundt
Director
March 10, 2003

/s/ JOHN P. BROWNE

John P. Browne
Director
March 10, 2003

/s/ PAUL S. OTELLINI

Paul S. Otellini
President, Chief Operating Officer and Director
March 10, 2003

/s/ ANDY D. BRYANT

Andy D. Bryant
Executive Vice President, Chief Financial Officer and Principal Accounting Officer
March 10, 2003

/s/ DAVID S. POTTRUCK

David S. Pottruck
Director
March 10, 2003

/s/ WINSTON H. CHEN

Winston H. Chen
Director
March 10, 2003

/s/ JANE E. SHAW

Jane E. Shaw
Director
March 10, 2003

/s/ ANDREW S. GROVE

Andrew S. Grove
Chairman of the Board and Director
March 10, 2003

/s/ DAVID B. YOFFIE

David B. Yoffie
Director
March 10, 2003

/s/ D. JAMES GUZY

D. James Guzy
Director
March 10, 2003

/s/ CHARLES E. YOUNG

Charles E. Young
Director
March 10, 2003

CERTIFICATION

I, Craig R. Barrett, certify that:

1. I have reviewed this annual report on Form 10-K of Intel Corporation;

2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;

4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:

   a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

   b) evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and

   c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;

5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and

6. The registrant's other certifying officers and I have indicated in this annual report whether there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 10, 2003

By: /s/ CRAIG R. BARRETT

Craig R. Barrett
Chief Executive Officer

CERTIFICATION

I, Andy D. Bryant, certify that:

1. I have reviewed this annual report on Form 10-K of Intel Corporation;

2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;

4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:

   a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

   b) evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and

   c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;

5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and

6. The registrant's other certifying officers and I have indicated in this annual report whether there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 10, 2003

By: /s/ ANDY D. BRYANT

Andy D. Bryant
Executive Vice President, Chief Financial Officer
and Principal Accounting Officer

CERTIFICATION

Each of the undersigned hereby certifies, for the purposes of section 1350 of chapter 63 of title 18 of the United States Code, in his capacity as an officer of Intel Corporation ("Intel"), that, to his knowledge, the Annual Report of Intel on Form 10-K for the period ended December 28, 2002, fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and that the information contained in such report fairly presents, in all material respects, the financial condition and results of operation of Intel.

Dated: March 10, 2003

By: /s/ CRAIG R. BARRETT

Craig R. Barrett
Chief Executive Officer

Dated: March 10, 2003

By: /s/ ANDY D. BRYANT

Andy D. Bryant
Executive Vice President, Chief Financial Officer
and Principal Accounting Officer

You are leaving the Form 10-K and continuing to the Corporate Directory.

CORPORATE DIRECTORY

BOARD OF DIRECTORS

Andrew S. Grove [4]
Chairman of the Board

Craig R. Barrett [4]
Chief Executive Officer

John P. Browne [1 2]
Group Chief Executive
BP plc
An integrated oil company

Winston H. Chen [1† 2]
Chairman
Paramitas Foundation
A private foundation

D. James Guzy [1 3 6†]
Chairman
Arbor Company
A limited partnership

Reed E. Hundt [2 3]
Senior Advisor
McKinsey & Company
A management consulting firm

Paul S. Otellini
President and
Chief Operating Officer

David S. Pottruck [2 5†]
President and
Co-Chief Executive Officer
The Charles Schwab Corporation
A securities brokerage firm

Jane E. Shaw [1 2† 3 6]
Chairman and
Chief Executive Officer
Aeropgen, Inc.
A pulmonary drug delivery company

David B. Yoffie [3† 4† 5 6 7]
Max and Doris Starr
Professor of International
Business Administration
Harvard Business School

Charles E. Young [3 5 6]
President
University of Florida and
Chancellor Emeritus
University of California at
Los Angeles

1 *Member of Audit Committee*
2 *Member of Compensation Committee*
3 *Member of Corporate Governance Committee*
4 *Member of Executive Committee*
5 *Member of Finance Committee*
6 *Member of Nominating Committee*
7 *Lead Independent Director*
† *Committee Chairman*

DIRECTORS EMERITI

Gordon E. Moore
Chairman Emeritus

Arthur Rock
(Retired 2003)
Venture capitalist

Leslie L. Vadasz
Executive Vice President
President,
Intel Capital

CORPORATE OFFICERS

Andrew S. Grove
Chairman of the Board

Craig R. Barrett
Chief Executive Officer

Paul S. Otellini
President and
Chief Operating Officer

Andy D. Bryant
Executive Vice President
Chief Financial and
Enterprise Services Officer

Sean M. Maloney
Executive Vice President
General Manager,
Intel Communications Group

Michael R. Splinter
Executive Vice President
Director,
Sales and Marketing Group

Leslie L. Vadasz
Executive Vice President
President,
Intel Capital

Robert J. Baker
Senior Vice President
General Manager,
Technology and
Manufacturing Group

Sunlin Chou
Senior Vice President
General Manager,
Technology and
Manufacturing Group

F. Thomas Dunlap, Jr.
Senior Vice President
General Counsel

Michael J. Fister
Senior Vice President
General Manager,
Enterprise Platforms Group

Patrick P. Gelsinger
Senior Vice President
Chief Technology Officer

Patricia Murray
Senior Vice President
Director,
Human Resources

Ronald J. Smith
Senior Vice President
General Manager,
Wireless Communications and
Computing Group

Howard G. Bubb
Vice President
General Manager,
Network Processing Group

Louis J. Burns
Vice President
General Manager,
Desktop Platforms Group

Douglas E. Busch
Vice President
Chief Information Officer

Mark A. Christensen
Vice President
Director, Intel Capital
Communication Sectors

Leslie S. Culbertson
Vice President
Director,
Corporate Finance

Youssef A. El-Mansy
Vice President
Director,
Logic Technology Development

Thomas R. Franz
Vice President
General Manager,
Advanced Development Group

Hans G. Geyer
Vice President
General Manager,
PCA Components Group

Brian L. Harrison
Vice President
General Manager,
Fab/Sort Manufacturing

William M. Holt
Vice President
Director,
Logic Technology Development

John H. F. Miner
Vice President
General Manager,
Intel Capital

Sandra K. Morris
Vice President
Chief Information Officer

Pamela L. Pollace
Vice President
Director,
Corporate Marketing Group

Gidu K. Shroff
Vice President
Director, Materials

William M. Siu
Vice President
General Manager,
Desktop Platforms Group

Stephen L. Smith
Vice President
Director,
Desktop Platform Operations

Edward Y. So
Vice President
Director, California
Technology and Manufacturing

Arvind Sodhani
Vice President
Treasurer

William A. Swope
Vice President
General Manager,
Software and Solutions Group

Cary I. Klafter
Corporate Secretary

APPOINTED VICE PRESIDENTS

Corporate Technology Group

Frank E. Spindler
Director, Marketing

David L. Tennenhouse
Director, Research

Desktop Platforms Group

Robert B. Crooke
General Manager, Desktop
Platform Solutions Division

Jeffrey P. McCrea
Director, Corporate Client
Demand Task Force

Stuart C. Pann
Director,
Microprocessor Marketing and
Business Planning

Sunil R. Shenoy
Director, CPU Development

Randy L. Wilhelm
General Manager,
Client Platform Division

Enterprise Platforms Group

Daniel J. Casaletto
General Manager,
Massachusetts Microprocessor
Design Center

David M. Cowan
Director,
Enterprise Architecture Lab

Abhijit Y. Talwalkar
General Manager,
Platform Products Group

Dalibor F. Vrsalovic
Director,
Advanced Systems Development

Finance and Enterprise Services

Carlene M. Ellis
Director, Diversity and Education

Ravi Jacob
Assistant Treasurer,
Acquisitions and
Strategic Investments

Franklin B. Jones
Director,
Business Systems and
Applications

Jon A. Olson
Director, Finance

Nanci S. Palmintere
Director,
Tax, Licensing and Customs

Prasad L. Rampalli
Director and Chief Architect,
Architecture and Integration
Platforms

Ogden M. Reid
Director,
Worldwide Human Resources
Development and Training

Dianne L. Rudolph
Director, Finance

Jacklyn A. Sturm
Controller, Technology and
Manufacturing Group

Richard G. A. Taylor
Director, Human Resources

Janice F. Wilkins
Director, Internal Audit

Intel Capital

Scott C. Darling
Director, Computing Sector

Claude M. Leglise
Director,
Worldwide Geographies Sector

Intel Communications Group

Glenda M. Dorchak
General Manager,
Broadband Products Group

Timothy A. Dunn
General Manager,
Platform Networking Group

Gil G. Frostig
General Manager,
Platform Networking Group

Gordon Hunter
General Manager,
Optical Products Group

James A. Johnson
General Manager,
Wireless Networking Group

W. Eric Mentzer
Chief Technology Officer

Michael A. Ricci
General Manager,
Optical Products Group

CORPORATE DIRECTORY (Contin

Legal and Government Affairs

James W. Jarrett
Director,
Worldwide Government Affairs

Cary I. Klafter
Director, Corporate Affairs

D. Bruce Sewell
Assistant General Counsel

Donald M. Whiteside
Director,
Strategic Programs Office

Mobile Platforms Group

Anand Chandrasekher
General Manager,
Mobile Platforms Group

Shmuel Eden
General Manager,
Israel Development Center

David Perlmutter
General Manager,
Mobile Platforms Group

Gregory S. Spirakis
Director, Design Technology

Sales and Marketing Group

John A. Antone
President,
Intel K.K. (Japan)

Jason Chun Shen Chen
General Manager,
Asia-Pacific Operations

Deborah S. Conrad
Director, Solutions Market
Development Group

John E. Davies
Director, Solutions Market
Development Group

Gerald J. Greeve
General Manager,
Asia Pacific Operations

Thomas M. Kilroy
General Manager,
Reseller Channel Operation

Thomas A. Lacey
President,
Intel Americas, Inc.

Ann Lewnes
Director,
Intel Inside® Program and
Co-Marketing

Christian Morales
General Manager,
Europe Middle East,
Africa Operations

Gregory R. Pearson
General Manager,
Communications Sales
Organization

Daniel R. Russell
Director,
Sales Applications,
Marketing and Services

Gregory R. Sieck
Director,
Brand Strategy and Advertising

Stacy J. Smith
General Manager,
Europe, Middle East,
Africa Operations

Earl L. Whetstone
Director,
Retail Sales and Marketing

Technology and Manufacturing Group

Sohail U. Ahmed
Director, Portland
Technology Development

Nasser Bozorg-Grayeli
Director, Assembly
Technology Development

Craig C. Brown
Director, Materials Operations

Robert A. Gasser, Jr.
Director, Components Research

Steven R. Grant
Director, Logic Technology
Manufacturing and Transfer

Jai K. Hakhu
General Manager, Technology
Manufacturing Engineering

Kirk R. Hasserjian
Director,
D2 Technology Development and
D2 Plant Manager

Gary V. Hensley
Director, Corporate Services

Alexander Kornhauser
General Manager,
Israel Operations and
F18 Plant Manager

Charles H. Korstad
Director,
Corporate Quality Network

Brian M. Krzanich
Process 860 Program Manager

Stefan K. Lai
Director, California
Technology and Manufacturing

Bruce H. Leising
Director,
Wireless Communications and
Computing Group Manufacturing

John McGowan
Director, Corporate Services

Gulzar Mohd Ali
General Manager,
Assembly/Test Manufacturing

James R. OHara
General Manager,
Ireland Operations and
Fab 10/14 Plant Manager

Sanjay D. Panditji
Director, Systems Technologies

Keith E. Reese
General Manager,
Intel Supply Network

Joseph D. Schutz
Director,
Logic Technology Development
Microprocessor Design

Siew Hai Wong
General Manager,
Assembly/Test Manufacturing

Wireless Communications and Computing Group

Shmuel Arditi
Director, Business Development

Darin G. Billerbeck
General Manager,
Flash Products Group

Curt J. Nichols
General Manager,
Flash Products Group

Anthony F. Sica
Director, Marketing

Gadi Singer
General Manager,
PCA Components Group

SENIOR FELLOWS

Desktop Platforms Group

Peter D. MacWilliams
Director, Platform Architecture

Enterprise Platforms Group

Justin R. Rattner
Director,
Microprocessor Research

Richard B. Wirt
General Manager,
Software and Solutions Group

Technology and Manufacturing Group

Mark T. Bohr
Director, Process
Architecture and Integration

FELLOWS

Corporate Technology Group

Kevin C. Kahn
Director, Communications and
Interconnect Technology

Stephen S. Pawlowski
Director, Communications and
Interconnect Technology

Uri C. Weiser
Director, Streaming Technology

Desktop Platforms Group

Glenn J. Hinton
Director,
IA-32 Microarchitecture
Development

Paul D. Madland
Director, Circuit Technology

David B. Papworth
Director,
Microprocessor Product
Development

Thomas A. Piazza
Director,
Graphics Integrated
Chipset Architecture

Enterprise Platforms Group

Bryant E. Bigbee
Director, Systems Software

Shekhar Y. Borkar
Director, Circuit Research

John H. Crawford
Director, Itanium® Architecture

Joel S. Emer
Director,
Microarchitecture Research

Tryggve Fossum
Director,
Microarchitecture Development

Richard B. Grove
Director, Compiler Technology

David J. Kuck
Director, KAI Software Lab

P. Geoffrey Lowney
Director,
Compiler and Architecture
Advanced Development

Seckin Unlu
Director, System Performance

Intel Capital

Steven G. Duvall
Director, Australia and
New Zealand Strategic
Investment

Intel Communications Group

Matthew J. Adiletta
Director,
Communication Processor
Architecture

Eivind Johansen
Director,
Optical Electronics Technology

Jean-Marc Verdiell
Director, Optical Technology

Mobile Platforms Group

William J. Grundmann
Director,
Computer Aided Design Research

Technology and Manufacturing Group

Gregory E. Atwood
Director, Communication
Technology Development

Yan A. Borodovsky
Director, Advanced Lithography

Kenneth C. Cadien
Director, Innovative Technology

Robert S. Chau
Director, Transistor Research

Richard L. Coulson
Director, I/O Architecture

Paolo A. Gargini
Director, Technology Strategy

Karl G. Kempf
Director, Decision Technologies

Jose A. Maiz
Director, Logic Technology
Quality and Reliability

Terrence J. McManus
Director,
Environmental Health and
Safety Technologies

Eugene S. Meieran
Director, Manufacturing
Strategic Support

Neal R. Mielke
Director, Quality and Reliability

Devadas D. Pillai
Director,
Operational Decision
Support Technology

Valluri R. Rao
Director, Analytical and
Microsystems Technologies

George E. Sery
Director,
Device Technology Optimization

Peter J. Silverman
Director, Lithography Capital
Equipment Development

Swaminathan Sivakumar
Director, Lithography

Gregory F. Taylor
Director, Mixed Signal
Circuit Technology

Scott E. Thompson
Director, Logic Technology

Clair Webb
Director, Circuit Technology

Ian A. Young
Director, Advanced Circuit and
Technology Integration

Investor information

Investor materials

www.intc.com—Intel's Investor Relations home page on the Internet contains background on the company and its products, financial information, frequently asked questions and our online annual report, as well as other useful information. For investor information, including additional copies of the Annual Report/10-K, 10-Qs or other financial literature, visit our Web site at www.intc.com or contact Computershare Investor Services, LLC at (800) 298-0146 (U.S. and Canada) or (312) 360-5123 (worldwide); or call Intel at (44) 1793 403 000 (Europe); (852) 2844 4555 (Hong Kong); (81) 298 47 8511 (Japan).

Intel on Nasdaq

Intel's common stock trades on The Nasdaq Stock Market* under the symbol INTC.

Dividend reinvestment program

Intel's Dividend Reinvestment Program allows stockholders to reinvest dividends and contribute additional cash to purchase Intel common stock on a weekly basis. For more information, call Intel's transfer agent, Computershare Investor Services, LLC, at (800) 298-0146 (U.S. and Canada) or (312) 360-5123 (worldwide).

Transfer agent and registrar

Computershare Investor Services, LLC, 2 North LaSalle Street, P.O. Box A3504, Chicago, IL 60690-3504 USA. Stockholders may call (800) 298-0146 (U.S. and Canada) or (312) 360-5123 (worldwide) with any questions regarding the transfer of ownership of Intel stock.

Independent auditors

Ernst & Young LLP, San Jose, California, USA

Environment, health and safety

Intel is guided by three operating principles in its management of environment, health and safety (EHS): prevent injuries in the workplace; be an EHS leader in its industry and communities; and reduce the environmental footprint of its products, processes and operations. Intel's performance continued to be recognized on local, regional and international levels in 2002, with numerous excellence awards for EHS programs and results. Internally, EHS was one of four 2002 recipients of the highly coveted Intel Quality Award recognizing organizations performing at the highest levels and role modeling the company's corporate values. Intel's OSHA recordable injury rate rose from year to year for the first time in nine years but remained world-class. We continued to aggressively reduce air emissions and significantly increased the recycling of chemical and solid wastes worldwide. To see the 2002 EHS report, visit www.intel.com/go/ehs. If you have questions or comments, call (800) 316-5542 (U.S. and Canada) or (480) 552-2525 (worldwide).

Employer of choice

Intel strives to attract and retain the best minds available by providing an environment in which people of diverse backgrounds are valued and rewarded, encouraging innovation and high levels of fulfillment and productivity. A worldwide emphasis on open communication, commitment to developing a diverse workforce, involvement in local communities and a philosophy of shared rewards has made Intel an attractive place to work. To learn more, visit the Workplace section of Intel's Web site at www.intel.com/jobs/workplace.

Intel and education

As a global technology company, Intel recognizes that students need to be prepared for the demands of the future, and that educators need resources and training to do their jobs well. Through the Intel® Innovation in Education initiative (www.intel.com/education), Intel collaborates with educators in communities around the world to improve the quality of mathematics, science and engineering education, and help students develop the higher level thinking skills they need to participate in a knowledge-based economy. In 2002, Intel donated approximately $100 million to programs that support these efforts, including:

- Intel® Teach to the Future is a worldwide program that helps teachers effectively integrate technology into the classroom to enhance student learning. The program currently trains teachers in 28 countries on six continents. Through 2002, more than 850,000 teachers worldwide had completed the Intel Teach to the Future training.
- Intel® Computer Clubhouse is a community-based education program that gives young people in under-served communities access to high-tech equipment, mentoring and instruction. There are 67 Intel Computer Clubhouses around the world, offering safe, creative environments for exploring new ideas, developing skills and becoming comfortable with technology.
- The Intel® International Science and Engineering Fair and the Intel® Science Talent Search provide young scientists with the opportunity to meet, present their work and share ideas with established members of the scientific community while competing for awards and college scholarships.

The Intel® brand

Supporting Intel's leadership in technology and manufacturing, as well as its reputation for quality, the Intel® brand is consistently ranked as one of the most recognizable and valuable brands in the world. To learn more about Intel, visit www.intel.com.

We would like to thank Gartner, Inc. for permission to use their forecasts in "Global PC Forecast and Shipments Quarterly Statistics—Database," December 5, 2002, by George Shiffler III, and "Wireless LAN Equipment Market—Strong Growth Set to Continue," October 2002, by Andy Rolfe.

Intel, the Intel logo, Intel Inside, Celeron, Intel386, Intel486, i960, Intel Centrino, Intel NetBurst, Intel SpeedStep, Intel StrataFlash, Intel Xeon, Intel XScale, Itanium, MMX, Pentium and Pentium III Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. *Other names and brands may be claimed as the property of others.
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Intel around the world

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Customer support: (800) 628-8686

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Intel Corporation (UK) Ltd.
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Wiltshire SN3 1RJ
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Ireland: (353) 1 606 7000
Israel: (972) 2 589 7111
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Asia-Pacific
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32/F Two Pacific Place
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Phone: (852) 2844 4555

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5-6 Tokodai, Tsukuba-shi
Ibaraki-ken 300-2635
Japan
Phone: (81) 298 47 8511

South America
Intel Semicondutores do Brasil
Av. Dr Chucri Zaidan, 940-10th floor
Market Place Tower II
04583-906
Sao Paulo-SP-Brasil
Phone: (55) 11 3365 5500

For more information
To learn more about Intel Corporation, visit our site on the Internet at *www.intel.com*.

intel®

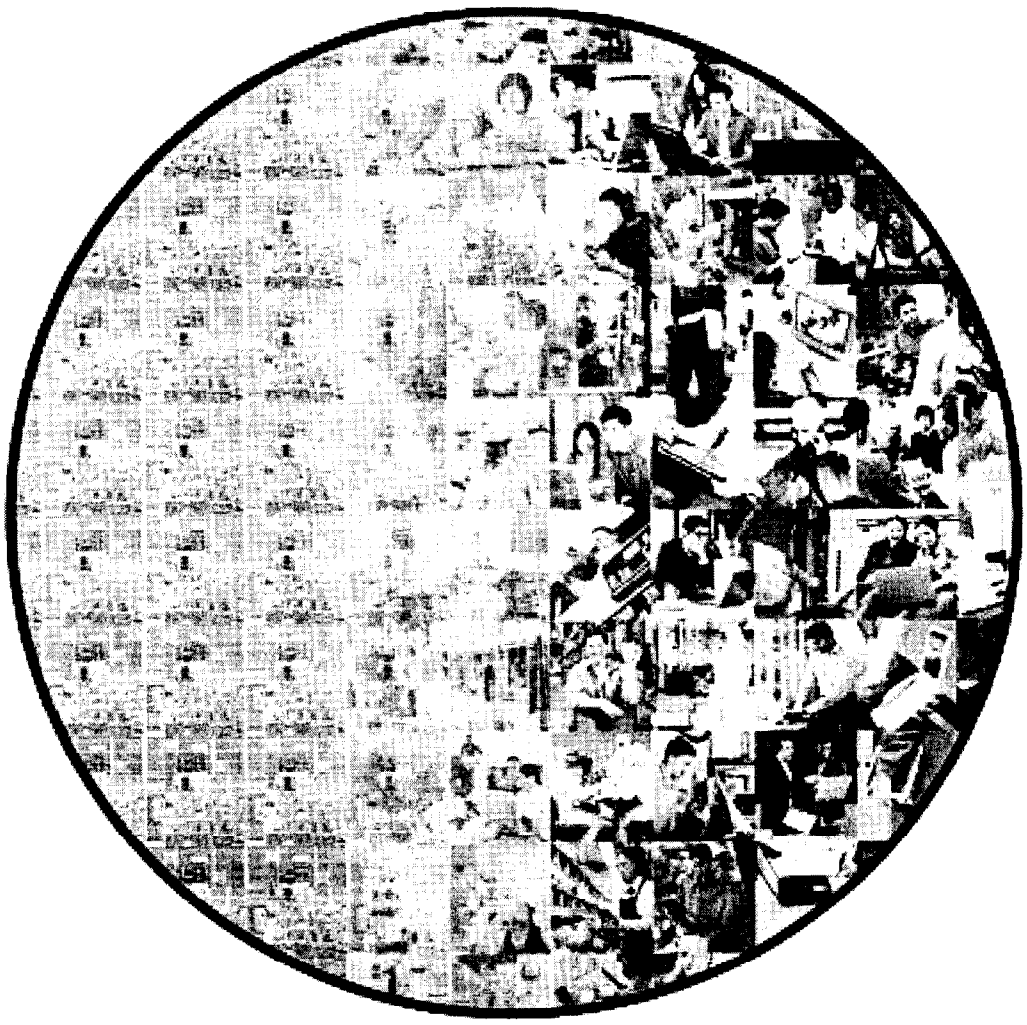
intel.com is your source for updated product information, manufacturing highlights, corporate news, press releases and upcoming Intel events.

intc.com is your source for stock information, earnings and conference webcasts, annual reports, corporate governance and historical financial information.

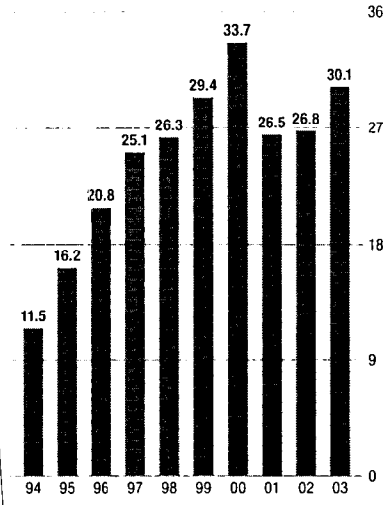
EXHIBIT B

intel

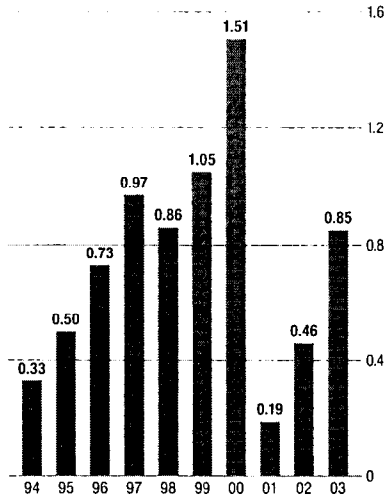
2003 Annual Report
intel.com intc.com



GROWTH THROUGH TECHNOLOGY LEADERSHIP

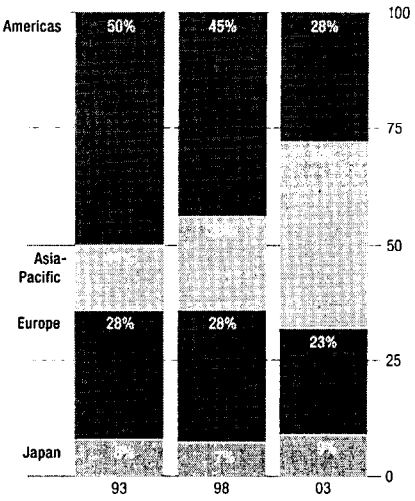


NET REVENUE
Dollars in billions



DILUTED EARNINGS PER SHARE†
Dollars, adjusted for stock splits

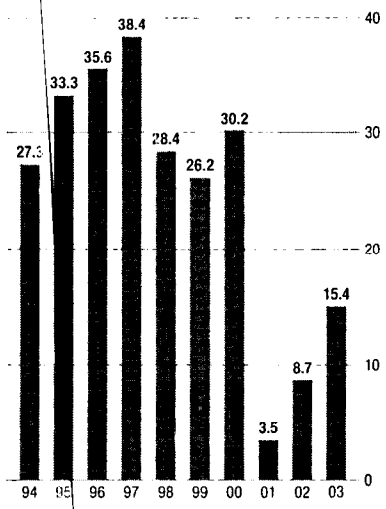
†Amortization of goodwill reduced earnings per share in 2001 by $0.22 ($0.18 in 2000 and $0.05 in 1999). Goodwill is no longer amortized, beginning in 2002.



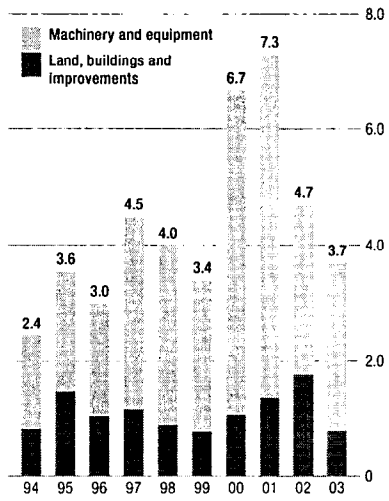
GEOGRAPHIC BREAKDOWN OF REVENUE
Percent

"Our continuing commitment to investments in leading-edge technology and our dedication to product innovation have set the stage for the positive results we began to see by year's end."

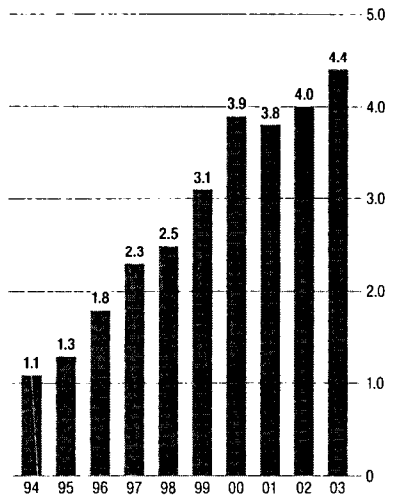
Craig R. Barrett
Chief Executive Officer



RETURN ON AVERAGE STOCKHOLDERS' EQUITY
Percent



CAPITAL ADDITIONS TO PROPERTY, PLANT AND EQUIPMENT
Dollars in billions



RESEARCH AND DEVELOPMENT†
Dollars in billions

†Excluding purchased in-process research and development

Past performance does not guarantee future results.

Cover: Innovations for a connected life. Our silicon products are the building blocks for innovative technology and products that help improve the way people live, work and play. Powering products from wireless mobile PCs to cell phones that surf the web to servers that provide the backbone of millions of networks, we are proud that Intel® technology is helping to build an increasingly digital world.

LETTER FROM YOUR MANAGEMENT

Craig R. Barrett

Paul S. Otellini

In 2003, we turned a key corner in our pursuit of growth. Over the last few years, we have worked to lay the groundwork for the future: investing in leading-edge technology and developing innovative products that make us more competitive, while controlling non-essential spending. This year's results show that our efforts are beginning to pay off.

We ended 2003 with substantial improvements in revenue and profit over 2002. Revenue of $30.1 billion was up 13% over 2002, with net income of $5.6 billion, up 81% over 2002. We spent $3.7 billion on capital assets, mostly factories and equipment, and had $4.4 billion in research and development expenses. Despite challenges in our Wireless Communications and Computing Group resulting in a $611 million goodwill write-off, 2003 operating income of $7.5 billion was up 72% from 2002.

As the worldwide economy begins to show signs of recovery, many companies and consumers are increasing their investments in innovative technologies that improve how people live, work and play. These technologies frequently combine computing and communications functions in an integrated product solution, often including wireless communications capability. This convergence of computing and communications presents significant opportunities for Intel. Research firm IDC projects double-digit shipment growth in PCs, servers and cell phones in 2004 compared with 2003. If this forecast proves accurate, this level of growth offers substantial opportunities for our business, given our position as a leading silicon supplier for these technologies.

We are proud of our accomplishments in a variety of key areas:

Product innovation. In 2003, we focused significant effort on helping to advance the wireless mobile computing environment with the introduction of Intel® Centrino™ mobile technology, designed specifically to optimize the wireless computing experience for mobile PC users. The technology includes the Intel® Pentium® M microprocessor, its supporting chipset, and wireless network capabilities, which together combine computing and communications functions, enabling extended battery life and improving the performance of wireless mobile PCs. In 2003, we shipped more than 5 million units of Intel Centrino mobile technology. We are pleased to have such a successful solution for the fast-growing mobile PC market segment.

In 2003, the Intel® Pentium® 4 processor was our highest sales-volume desktop processor. During the year, we introduced several new desktop Pentium 4 processors incorporating our Hyper-Threading Technology, an architectural innovation that can increase system-level performance by allowing a single processor to handle two streams of data instructions simultaneously (in systems designed to take advantage of the technology).

Our server business continues to grow, with record revenue from sales of Intel® Xeon™ processors, and shipments of more than 100,000 units of Intel® Itanium® processors, in 2003. In high-performance computing, the number of Intel processor–based systems in the TOP500* list of the world's fastest supercomputers grew by nearly 50% over a six-month period, with supercomputers based on Intel processors outnumbering those based on any single RISC architecture for the first time.

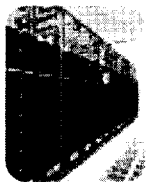
We continued extending our product offerings into growth areas related to the computing platform: wireless networking products, wireless handheld devices and communications infrastructure products. We entered the wireless networking silicon arena in 2003 with a product for 802.11b wireless networking, and by year's end had also introduced an 802.11a/b product and had begun shipping an 802.11b/g product (802.11a, 802.11b and 802.11g are industry-standard specifications for wireless data transmission). We expect to introduce a tri-mode 802.11a/b/g product in 2004, and are focusing on developing products for future wireless networking specifications. In products for handheld communications devices, Intel XScale® processors are delivering the low-power, high-performance processing capability for today's data-enabled mobile phones and PDAs. We are also one of the leading suppliers of network processors.

Advanced manufacturing. Our investments in advanced manufacturing are paying off. We believe we were the first to begin ramping microprocessors in high volume on a new 90-nanometer technology process using 300mm silicon wafers (300mm wafers can yield more than twice as many chips per wafer as 200mm wafers). We introduced these microprocessors, formerly code-named "Prescott," in 2004.

Our goal is to be one generation ahead of the rest of the industry in process technology. As we move to each succeeding generation of manufacturing process technology, we use less space per transistor, which lets us put more transistors on an equivalent size chip, decrease

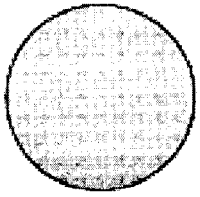
GROWTH THROUGH TECHNOLO

We are proud of our strengths in four key areas:



PRODUCT INNOVATION

Our products advance the convergence of computing and communications functions, and are helping to spread wireless networking capabilities.



ADVANCED MANUFACTURING

As we move to our next generation of advanced manufacturing process technology, we reap significant competitive advantages.

WORLDWIDE OPI

Emerging markets ar infrastructures, and many es showing signs of upgr ad

the size of the chip or offer an increased number of integrated features, which can result in faster microprocessors, products that consume less power and/or products that cost less to manufacture. We believe that our advanced manufacturing capabilities represent a significant competitive advantage in the marketplace.

Worldwide opportunities. In 2003, we sold to an increasingly worldwide market: 72% of our sales came from geographies outside the Americas. Sales were particularly strong in geographies such as China, Russia and eastern Europe, as these areas continued to build their IT infrastructure. In many cases, emerging markets are leapfrogging older technology to take advantage of the competitive benefits of leading-edge technology, particularly wireless capabilities, creating opportunities for our products. Our expanding local presence in emerging markets gives us a solid foundation in these geographies, the fastest growing regions for our technology. We also saw a rally in IT investing in more mature markets. In Japan and western Europe in particular, we saw increased investment to upgrade aging technology and remain competitive for growth. We are poised to take advantage of appropriate growth opportunities worldwide.

GY LEADERSHIP

intel

OPPORTUNITIES

ts are building their IT
ıy established economies are
gr ading their tec nology.

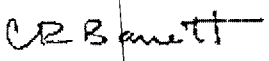
THE INTEL BRANDS

Our branding programs educate consumers about the benefits of Intel technology, with a focus in 2003 on the Intel Centrino™ mobile technology brand.

The Intel brands. In 2003, we continued to invest heavily in programs to educate consumers and IT purchasers about the advanced technology and innovation associated with Intel products. Our Intel Centrino mobile technology brand program comprises advertising, co-marketing programs and point-of-access displays identifying products optimized with Intel Centrino mobile technology as well as highlighting the locations of thousands of wireless networking hotspots worldwide. We also focused our branding efforts in emerging markets, with programs to establish Intel inside® brand preference around the world.

Poised for growth. In 2003, we redeployed resources to areas of higher productivity and strategic importance. We have substantial cash reserves and the ability to invest heavily to support our major technologies. And we have a highly skilled workforce dedicated to our goals of providing better products for our customers, delivering growth and creating value for our stockholders.

We are in a strong position for the future. We are optimistic about the outlook for new technologies and our potential for continued leadership and growth in an increasingly digital world.



Craig R. Barrett
Chief Executive Officer

Paul S. Otellini
President and
Chief Operating Officer

LETTER FROM YOUR CHAIRMAN

Andrew S. Grove

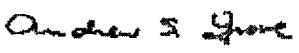
In last year's Annual Report, I discussed our Board's organization and operations. This year, I want to comment on our independent directors and how we expect them to both oversee our business and operations and use their collective skills and experience to assist management. Directors are most valuable when they exercise informed, independent judgment. We try hard to support this by providing access to information as well as the time and the environment for that information to be analyzed, discussed and acted upon.

Our Board receives information before, during and after Board meetings. We are always asking the Board if we are providing them with the most useful information, and our meeting agendas and materials evolve over time in response to the feedback we receive.

Sometimes, the most valuable information the Board receives comes to them outside the Board meeting context. Board members attend Intel events and visit Intel sites on a worldwide basis, speak at employee forums, and use direct access to all of our employees to maintain their understanding of our operations at several levels. In 2003, independent directors visited and were briefed at 14 separate Intel sites, including sites in China, Russia and Ireland. The entire Board attended our annual Sales and Marketing Conference, where they spoke at major sessions and at employee Open Forums. Of course, our Board also attends our Annual Stockholders' Meeting and is prepared to answer questions from the audience. At the May 2003 meeting, the independent directors who chair our Audit and Compensation Committees delivered reports on the work of those committees.

To aid in providing quality time at Board meetings, and maintain the balance between strategic discussions and other agenda items, more of the Board's workload is moving to the committees. 2003 was a particularly busy year for the Board's Nominating Committee, for example. Two of our directors will retire in May, and we have added two new independent directors to take their seats. The Board must represent a portfolio of skills and experience, and each time we have a vacancy the Committee needs to consider then-prevailing environmental factors in looking for candidates. The recent additions of Charlene Barshefsky and John Thornton to our Board reflect our focus on international trade and the emerging markets.

Informed, independent judgment is the key attribute that makes a Board successful in its work and most valuable to stockholders and management. The Board and the employees of Intel work hard to nurture and support this attribute, to the benefit of all of us who are the stockholders of Intel.



Andrew S. Grove
Chairman

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

As filed on February 23, 2004 and amended on February 24, 2004

(Mark One)

☒ **Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the fiscal year ended December 27, 2003.

☐ **Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the transition period from _____ to _____.

Commission File Number 0-06217

INTEL CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	**94-1672743**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2200 Mission College Boulevard, Santa Clara, California	**95052-8119**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code **(408) 765-8080**

Securities registered pursuant to Section 12(b) of the Act:
None

Securities registered pursuant to Section 12(g) of the Act:
Common stock, $0.001 par value

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is an accelerated filer (as defined in Exchange Act Rule 12b-2). Yes ☒ No ☐

Aggregate market value of voting stock held
by non-affiliates of the registrant as of June 27, 2003
$129.2 billion
6,484 million shares of common stock outstanding as of January 30, 2004

DOCUMENTS INCORPORATED BY REFERENCE

(1) Portions of the registrant's Proxy Statement relating to its 2004 Annual Stockholders' Meeting, to be filed subsequently—Part III.

INTEL CORPORATION

FORM 10-K

FOR THE FISCAL YEAR ENDED DECEMBER 27, 2003

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This Annual Report on Form 10-K reflects an amendment to the original Securities and Exchange Commission (SEC) filing that corrects certain typographical errors as described in Form 10-K/A, Amendment No. 1 filed with the SEC on February 24, 2004.

PART I

ITEM 1. BUSINESS

Industry

We are the world's largest semiconductor chip maker, supplying advanced technology solutions for the computing and communications industries. Our goal is to be the preeminent building block supplier to the worldwide Internet economy. Our products include chips, boards and other semiconductor components that are the building blocks integral to computers, servers, and networking and communications products. We offer products at various levels of integration, allowing our customers flexibility to create advanced computing and communications systems and products.

Intel's component-level products consist of integrated circuits used to process information. Our integrated circuits are silicon chips, known as semiconductors, etched with interconnected electronic switches. Developments in semiconductor design and manufacturing have made it possible to decrease the size of circuits and transistors etched into silicon, utilizing less space as a result. This decrease in size enables us to put increased numbers of transistors on an equivalent size chip, decrease the size of the chip or offer an increased number of integrated features, which can result in microprocessors that are faster or incorporate additional features, products that consume less power and/or products that cost less to manufacture.

We were incorporated in California in 1968 and reincorporated in Delaware in 1989. Our Internet address is *www.intel.com*. On this web site, we publish voluntary reports, which are updated annually, outlining our performance with respect to corporate responsibility and environmental, health and safety compliance (these voluntary reports are not incorporated by reference into this filing). On our Investor Relations web site, located at *www.intc.com*, we post the following filings as soon as reasonably practicable after they are electronically filed with or furnished to the Securities and Exchange Commission: our annual report on Form 10-K, our quarterly reports on Form 10-Q, our current reports on Form 8-K, our proxy statement on Form 14A related to our annual stockholders' meeting and any amendments to those reports or statements filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934. All such filings on our Investor Relations web site are available free of charge.

Products

Our major products include microprocessors; chipsets; boards; wired Ethernet and wireless connectivity products; communications infrastructure components such as network and embedded processors and optical components; microcontrollers; flash memory; application and cellular processors used in cellular handsets and handheld computing devices; and cellular baseband chipsets.

Our major customers are:

- original equipment manufacturers (OEMs) and original design manufacturers (ODMs) who make computer systems, cellular handsets and handheld computing devices, and telecommunications and networking communications equipment;
- PC and network communications products users (including individuals, large and small businesses, and service providers) who buy PC components and board-level products, as well as Intel's networking and communications products, through distributor, reseller, retail and OEM channels throughout the world; and
- other manufacturers, including makers of a wide range of industrial and communications equipment.

Our primary focus is on developing advanced integrated silicon technology solutions, which we believe will provide the performance and technology features necessary to help accelerate the convergence of computing and communications capabilities. Convergence refers to having computing and communications capabilities in an integrated product solution. We also provide key components for networking and communications infrastructures used to connect technology users. We believe users of computing and communications devices want not only higher performance but also other capabilities such as multithreaded or multitasking capability, seamless networking connectivity, improved security, reliability, ease of use and interoperability among devices. It is our goal to incorporate features addressing these capabilities in our various products to meet user demands.

Each of our operating segments uses its core competencies in the design and manufacture of integrated circuits, as well as key silicon and platform capabilities, to provide building blocks for technology solutions. The Intel Architecture business provides the advanced technologies to support the desktop, mobile and enterprise computing platforms. During 2003, our Intel Communications

Group (ICG) focused on wired and wireless network connectivity products, and provided key components for networking and communications infrastructure devices and other industrial and commercial purposes. Finally, during 2003, our Wireless Communications and Computing Group (WCCG) focused on component-level products and platform solutions for the wireless handheld computing and communications market segments.

In December 2003, we announced that we would be consolidating our communications-related businesses into a single organization, the Intel Communications Group. We believe that as computing and communications converge, the consolidation of ICG and WCCG will give us the opportunity to better coordinate product planning and customer focus between our communications infrastructure and wireless client efforts going forward. This reorganization was not effective until fiscal 2004. Because the reporting period for this Form 10-K is as of December 27, 2003, the communications related businesses discussed below and the results of operations for our operating segments in this filing are presented under the organizational structure that existed as of December 27, 2003.

Intel Architecture Business

The Intel Architecture business develops platform solutions based on our microprocessors, chipsets and board-level products, which are optimized for use in the desktop, mobile and server market segments. The end-user products into which our products are ultimately integrated are determined by our customers and how they choose to meet the specific requirements from end users.

- Desktop platform products incorporate our microprocessors, chipsets and motherboards primarily in desktop computers and entry-level servers and workstations. Our strategy for the desktop platform is to introduce microprocessors and chipsets with higher performance and/or advanced technology features, tailored to the needs of different market segments using a tiered branding approach. Our desktop processors include products such as the Intel® Pentium® 4 processor and the Intel® Celeron® processor.

- Mobile platform products incorporate our microprocessors, chipsets and wireless communications components primarily in notebook computers. Our mobile processors include products such as our Intel® Pentium® M processor offered separately and as part of Intel® Centrino™ mobile technology. Our strategy for the mobile platform is to deliver products optimized for some or all of the four mobility vectors: performance, battery life, form factor (the physical size and shape of a device) and wireless connectivity. We also offer the Mobile Intel® Pentium® 4 processor, and for the value notebook market segment we offer the mobile Intel® Celeron® processor.

- Enterprise platform products are targeted at entry-level to high-end servers and workstations, as well as high-performance enterprise-class servers. Servers are systems, often with multiple microprocessors working together, that house large amounts of data, direct traffic, perform complex transactions and control central functions in local and wide area networks and on the Internet. Workstations typically offer higher performance than standard desktop PCs, especially in graphics processing and in the ability to perform several tasks at the same time. Our strategy for the enterprise platform is to provide processors and chipsets with high performance and/or advanced technology features, as well as competitive price for performance, across the range of server and workstation market segments. Our products for the enterprise platform include the Intel® Xeon™ processor family, targeted for entry-level to high-end workstations and servers, and our Itanium® processor family, targeted for enterprise-class servers and supercomputing solutions at the higher end of the enterprise market segment.

Net revenue for the Intel Architecture operating segment made up approximately 87% of our consolidated net revenue in 2003. Revenue from sales of microprocessors within the Intel Architecture operating segment represented approximately 73% of consolidated net revenue in 2003. Our microprocessor business generally has followed a seasonal trend; however, there can be no assurance that this trend will continue. For the past five years, the company's sales of microprocessors were higher in the second half of the year, primarily due to back-to-school and holiday demand.

Microprocessors

A microprocessor is the central processing unit (CPU) of a computer system. It processes system data and controls other devices in the system, acting as the "brains" of the computer. One indicator of microprocessor performance is its clock speed, the rate at which its internal logic operates, which is measured in units of hertz, or cycles processed per second. One megahertz (MHz) equals one million cycles processed per second, and one gigahertz (GHz) equals one billion cycles processed per second. Other factors affecting computer performance include the amount of memory storage, the speed of memory access, the microarchitecture design of the CPU and the speed of communication between the CPU and the chipset. The memory stored on a chip is measured in bytes, with 1,024 bytes

equaling a kilobyte (KB), 1.049 million bytes equaling a megabyte (MB) and 1.074 billion bytes equaling a gigabyte (GB). Cache is a memory that can be located directly on the microprocessor, permitting quicker access to frequently used data and instructions. Some of our microprocessors have additional levels of cache, second level (L2) cache and third level (L3) cache, to offer higher levels of performance. Other microprocessor features can also enhance system performance or end-user experience by running software more efficiently. For example, we currently offer microprocessors with Hyper-Threading Technology (HT Technology), which allows a single processor to handle two sets of instructions simultaneously. This capability provides benefits in two ways: it helps to run "multithreaded" software, which is designed to execute different parts of a program simultaneously, or helps to use multiple software programs simultaneously in a multitasking environment. To take advantage of the HT Technology capability, a computer system must have a microprocessor that supports the technology, a chipset and BIOS (basic input/output system) that use the technology and an operating system that includes optimizations for the technology. Performance will vary depending on the system hardware and software used.

In 2003, we manufactured a majority of our microprocessors and chipsets using our 130-nanometer (0.13-micron) process technology. In December 2003, we began selling processors manufactured using our 90-nanometer process technology on 300mm wafers, and we introduced these Intel Pentium 4 processors (formerly code-named "Prescott") in February 2004. One micron equals one millionth of a meter, and one nanometer is one thousandth of a micron, or one billionth of a meter. As we move to each succeeding generation of manufacturing process technology, we utilize less space per transistor, which enables us to fit more transistors on an equivalent size chip, decrease the size of the chip, or offer an increased number of integrated features. This decrease in size can also result in faster microprocessors and semiconductor products that consume less power and/or products that cost less to manufacture. The conversion to using 300mm wafers from 200mm wafers, which began in 2002 and continued in 2003, allows for more efficient use of our capital investment in equipment by providing more than twice as many equivalent chips per wafer. See the discussion of manufacturing process technologies under the heading "Manufacturing, Assembly and Test" in Part I, Item 1 of this Form 10-K.

In 2003, we announced a number of new microprocessor products tailored to meet performance, feature, price and form-factor needs for computing market segments ranging from consumer desktops to high-performance servers. Our products, including some key product introductions, are discussed below.

Desktop Platform. In 2003, the Intel Pentium 4 processor was our highest sales-volume desktop processor. The Pentium 4 processor is optimized to deliver high performance across a broad range of business and consumer applications. In 2003, we introduced several desktop Intel Pentium 4 processors with HT Technology, running at speeds ranging from 2.4 GHz to 3.2 GHz. These processors are used in conjunction with chipsets that we introduced in April 2003, supporting the 800-MHz system bus. A bus carries data between parts of the system, for example, between the processor and main memory. This new bus can transmit information within the PC up to 50% faster than our previous 533-MHz version. In February 2004, we introduced a version of this processor running at 3.4 GHz. All of these processors come with 512 KB of L2 cache and were built using our 130-nanometer process technology.

In addition, in November 2003, we launched the Intel® Pentium® 4 processor Extreme Edition with HT Technology at 3.2 GHz, targeted at high-end PC game enthusiasts and power users. This processor comes with an additional 2 MB of L3 cache. In February 2004, we introduced a version of this processor running at 3.4 GHz.

The Intel Celeron processor is designed to meet the core computing needs and affordability requirements of value-conscious PC users. During 2003, we introduced several new versions of the desktop Celeron processor running at speeds ranging from 2.3 GHz to 2.8 GHz. These processors have 128 KB of cache and are used in conjunction with chipsets that support the 400-MHz system bus.

Mobile Platform. We design our mobile platform products with high performance and/or features that enable wireless connectivity, low power consumption and a variety of form factors, including thin, lightweight systems. We offer mobile processors at a variety of price/performance points, allowing our OEM customers to meet the demands of a wide range of notebook PC designs. These notebook designs include transportable notebooks, which provide desktop-like features such as high performance, full-size keyboards, larger screens and multiple drives; thin-and-light models, including those optimized for wireless networking; and ultra-portable designs. Within the ultra-portable design category, we provide specialized low-voltage processors, which consume as little as one watt of power on average, and Ultra Low Voltage processors, which consume as little as half a watt of power on average. Low-voltage processors are targeted for the mini-notebook market segment, while Ultra Low Voltage processors are targeted for the sub-notebook and tablet market segments of mobile PCs weighing less than three pounds and measuring one inch or less in height.

In 2003, we introduced more than 30 new mobile processors, providing solutions across a wide range of market segments. We introduced several Intel Pentium M processors at speeds ranging from 1.3 GHz to 1.7 GHz, as well as low-voltage Pentium M processors at 1.1 GHz and 1.2 GHz, and Ultra Low Voltage versions at 900 MHz and 1.0 GHz. The Intel Pentium M processor is

optimized for power management and improved performance, with advanced design features to enable extended battery life and to effectively manage the thermal requirements necessary for smaller form factors. In 2003, there were more than 145 mobile computer system designs based on the Intel Pentium M processor. In addition, in the first half of 2003, we introduced several versions of the Mobile Intel Pentium 4 Processor-M running at speeds ranging from 2.4 GHz to 2.6 GHz. We also introduced several Mobile Intel Pentium 4 processors running at speeds ranging from 2.4 GHz to 3.2 GHz; some of these versions also included HT Technology.

Also in 2003, we introduced two new Ultra Low Voltage versions of our Mobile Intel® Pentium® III Processor-M, running at 900 MHz and 933 MHz, for use in mini-notebooks and sub-notebooks. For the value mobile PC market segment, we introduced mobile Celeron processors at speeds ranging from 1.26 GHz to 2.5 GHz, as well as a low-voltage version at 866 MHz, and an Ultra Low Voltage mobile Celeron processor at 800 MHz.

In January 2004, we introduced two standard-voltage versions of the Intel® Celeron® M processor for mobile PCs at speeds of 1.3 GHz and 1.2 GHz as well as an ultra-low voltage version at 800 MHz. These three versions feature a 400-MHz processor system bus and 512 KB of L2 cache, and support advanced mobile power management.

In 2003, we focused significant effort on helping to advance the wireless mobile computing environment. In March 2003, we introduced Intel Centrino mobile technology, our first computing technology designed and optimized specifically for performance mobility. Intel Centrino mobile technology consists of an Intel® Pentium® M processor and the Intel® 855 chipset family, both offered by the Mobile Platforms Group within the Intel Architecture business, as well as a wireless network connection, which is based on the 802.11 industry standard, from ICG. The 802.11 communication standard refers to a family of specifications developed for wireless LAN (WLAN, or "WiFi") technology. These specifications describe the speed and frequency of the over-the-air interface between a wireless client and a base station or between two wireless clients.

By supporting the 802.11 WLAN industry standard, Intel Centrino mobile technology enables users to take advantage of wireless capabilities at work and at home, as well as at thousands of wireless "hotspots" already installed around the world. Hotspots provide paid or free WLAN service in cafes, hotels, restaurants, retail shops, airports, trains and other public meeting areas. We have also created a Wireless Verification Program to test Intel Centrino mobile technology with leading hotspot vendor solutions to increase the probability of a consistent wireless connectivity experience worldwide. At year-end, in conjunction with wireless network providers, we had verified more than 25,000 hotspots.

Enterprise Platform. The Intel Architecture business also supports the enterprise platform by offering products that address various levels of data processing and compute-intensive applications. Our Intel Xeon processor family of products supports a range of entry-level to high-end technical and commercial computing applications for the workstation and server market segments. Our Intel Itanium processor family of products provides an even higher level of computing performance to support data processing, handling high transaction volumes and other compute-intensive applications for enterprise-class servers, as well as supercomputing solutions. The Intel Xeon processor for dual-processing (DP) servers with HT Technology is designed for two-way servers. For servers based on four or more processors, we offer the Intel Xeon processor for multiprocessing (MP) servers with HT Technology. For the enterprise-class market segment, we offer the Intel® Itanium® 2 processor.

In March 2003, we introduced the Intel Xeon processor DP at speeds of up to 3 GHz, with a 512 KB L2 cache and system buses running at up to 533 MHz. Servers based on Intel Xeon processors are typically used as general-purpose servers for web hosting, data caching, search engines, security and streaming media, and as workstations for digital content creation, mechanical and electrical design, financial analysis and 3D modeling. In July 2003, we introduced versions of our Intel Xeon processor DP with 1 MB of L3 cache running at 3 GHz, and in October 2003, we introduced a version running at 3.2 GHz.

In June 2003, we introduced the Intel Xeon processor MP with up to 2 MB of integrated L3 cache, running at speeds of up to 2.8 GHz, designed for mid-tier and back-end servers based on four or more processors.

In June 2003, we also introduced the new Itanium 2 processor, an enterprise-class processor designed for the most data-intensive, business-critical and technical computing applications. This processor runs at speeds of up to 1.5 GHz with up to 6 MB of integrated L3 cache. The new Itanium 2 processor delivers 30% to 50% greater performance than the previous Itanium 2 processor, while maintaining system and software compatibility with other Itanium processors. In September 2003, we introduced an Itanium 2 processor for DP systems running at 1.4 GHz with 1.5 MB of L3 cache. This processor broadens our Itanium processor family line of products by providing new levels of price/performance to manage data processing and technical computing needs for lower end dual processing enterprise and high-performance computing systems. In addition, in the third quarter of 2003, we introduced the Low Voltage Intel Itanium 2 processor running at 1.0 GHz with 1.5 MB of L3 cache. This processor consumes approximately half the power of high-end Itanium 2 processors and provides a lower power platform for the entry-level market segment.

Chipsets

If the microprocessor is considered the "brains" of the PC, the chipset operates as the PC's "nervous system"—sending data from the processor to input, display and storage devices, such as the keyboard, mouse, monitor, hard drive, and CD or DVD drive. Chipsets perform essential logic functions, such as balancing the performance of the system and removing bottlenecks. Chipsets also extend the graphics, audio, video and other capabilities of many systems based on our processors. Finally, chipsets control the access between the CPU and main memory. Our chipsets are compatible with a variety of industry-accepted bus specifications, such as the Peripheral Components Interconnect (PCI) local bus specification and the Accelerated Graphics Port (AGP) specification. Our customers want memory architecture alternatives, and as a result, we currently offer chipsets supporting Double Data Rate (DDR) Dynamic Random Access Memory (DRAM), Synchronous DRAM (SDRAM) and Rambus* DRAM (RDRAM).

To help computer makers reduce the time-to-market for their products, provide new capabilities and enable overall system performance to scale as processor performance increases, we design, manufacture and sell chipsets for various computing market segments. With our chipset products, we also offer motherboards that use those chipsets, thereby offering a more complete solution stack for customers looking for Intel-based solutions. In April 2003, along with the introduction of the Intel Pentium 4 processor with HT Technology, we introduced a supporting chipset, the Intel® 875P chipset. This chipset offers two significant platform innovations: Intel® Performance Acceleration Technology (PAT) and Communications Streaming Architecture (CSA). PAT increases the speed of data transmission between the processor and system memory in order to increase performance, while CSA, in conjunction with the Intel® PRO/1000 CT desktop connection Gigabit Ethernet controller, doubles the networking bandwidth of the system.

In May 2003, we introduced the Intel® 865G and 865PE chipsets. Supporting HT Technology and our 800-MHz system bus, as well as dual-channel DDR memory and enhanced graphics, these chipsets are designed to deliver improved performance for corporate and mainstream desktop computer users. We also introduced the Intel® 865P and 865GV chipsets to support processors with our 400-MHz and 533-MHz system buses.

In March 2003, we introduced the Intel® 855 family of chipsets with two new chipsets developed specifically for the mobile market segment. The Intel® 855PM chipset supports discrete graphics (a non-integrated graphics solution within a chipset) and a low-power graphics power management mode; the Intel® 855GM chipset provides integrated Intel® Extreme Graphics 2 technology for improved 3D graphics. In June 2003, we introduced the Intel® 852PM and Intel® 852GME chipsets, which, when combined with the Mobile Intel Pentium 4 Processor-M, deliver the advantages of being able to accommodate DDR memory running at 333/266 MHz at up to 2 GB capacity as well as providing support for 533-MHz system buses. The 852GME chipset adds Intel Extreme Graphics 2 technology. In September 2003, we added the Intel® 855GME chipset, which offers new power-saving features and, when used in combination with DDR running at 333 MHz, delivers enhanced graphics and memory performance for notebook PCs based on Intel Centrino mobile technology.

Board-Level Products

We offer board-level products designed for our microprocessors and chipsets to give our OEM customers flexibility by enabling them to choose whether to buy at the component or board level. OEMs purchase products from us at the board level to help reduce their time-to-market.

Intel Communications Group

ICG provides silicon and integrated networking and communications building blocks for OEMs and other systems builders. Our products include wired Ethernet products; wireless connectivity products; and communication infrastructure components, such as programmable network and embedded processors and optical components. Embedded processing components from ICG are also used in products such as industrial automation equipment, point-of-sale systems and other applications. Finally, ICG also provides microcontrollers primarily used in automotive systems.

Net revenue for ICG made up approximately 7% of our consolidated net revenue for 2003.

Wired Ethernet Products

Ethernet is an industry-standard technology used to translate and transmit data in packets across networks. As Ethernet expands from the traditional local area network (LAN) environment into the WLAN, metropolitan area network (MAN) and networked storage market segments, we are expanding our Ethernet product portfolio to address these other market segments. For the MAN market

segment, we offer Ethernet products at multiple levels of integration to provide a low-cost solution with increased speed and signal transmission distance (commonly referred to as "reach"). In networked storage, we are developing products that are intended to enable storage resources to be added at any location on an Ethernet network.

Our LAN strategy is to maintain leadership in client Ethernet connections as the market segment continues to transition from Fast Ethernet to Gigabit Ethernet in desktop computing and to 10-Gigabit Ethernet in enterprise data servers. Gigabit Ethernet networks allow the transmission of 1 billion individual bits of information per second; 10-Gigabit Ethernet networks transmit 10 billion bits of information per second. By contrast, Fast Ethernet networks transmit 100 million bits of information per second (Mbps, or megabits per second).

In March 2003, we introduced the first 10-Gigabit Ethernet network interface card for servers, the Intel® PRO/10GbE LR server adapter, as well as a new Gigabit Ethernet controller, the Intel® PRO/1000 CT desktop connection. The Intel PRO/1000 works in tandem with the Intel 875P chipset and Intel's Communications Streaming Architecture (CSA) to increase the available networking bandwidth (compared to PCI bus-based solutions).

In October 2003, we introduced a new series of products designed to help eliminate server input/output (I/O) bottlenecks and meet the high-bandwidth needs of emerging storage, networking and telecommunications applications. The new products include the Intel® IOP331 I/O processor, based on Intel XScale® technology; the Intel® IOP315 I/O processor chipset, with support for storage-area network and network-attached storage applications; and the Intel® 41210 serial-to-parallel PCI bridge, which is designed to simplify the transition from PCI to the new PCI Express interconnect technology.

Wireless Connectivity Products

Our strategy in wireless connectivity is to significantly accelerate deployment of WLAN capability by developing WLAN products and fostering the adoption of integrated WLAN into the mobile and notebook computer segments. In 2003, we introduced the Intel® PRO/Wireless 2100 and Intel® PRO/Wireless 2100A network connections for notebook computers based on Intel Centrino mobile technology. The Intel PRO/Wireless 2100 network connection features 802.11b wireless functionality, and the Intel PRO/Wireless 2100A features both 801.11a and 802.11b capability. Compared to products based on 802.11b, products based on the 802.11a specification can provide a faster exchange of data between computing devices and networks.

In January 2004, we introduced the Intel® PRO/Wireless 2200BG network connection, featuring both 802.11b and 802.11g wireless functionality for notebook PCs based on Intel Centrino mobile technology. The 802.11b and 802.11g specifications use the same 2.4-GHz band, but the 802.11g specification has a faster transmission speed. The Intel PRO/Wireless 2200BG solution allows a data transfer rate of 54 Mbps and is designed to maintain a high throughput at longer ranges in office or home environments, along with efficient use of power to enable longer system battery life. We plan to have an 802.11a/b/g wireless networking component in production in 2004.

Communications Infrastructure Products

Our communications infrastructure components include products such as network and embedded processors, which provide programmable building blocks for modular communications platforms, and optical components. Unlike proprietary system platforms, modular communication platforms are standards-based solutions that offer network infrastructure builders flexible, low-cost, faster time-to-market options for designing their networks. Our strategy in network processing is to develop an industry-leading product roadmap, support efforts to develop modular communications standards and enable activities to accelerate silicon deployment. Our network processor products are based on the Intel® Internet Exchange Architecture (Intel® IXA) and include a range of advanced, programmable devices that are used in networking equipment to rapidly manage and direct data moving across the Internet and corporate networks. At the core of Intel IXA is the Intel XScale microarchitecture, which offers low power consumption and high-performance processing for a wide range of Internet devices.

In February 2003, we introduced three network processors for home and small-business networking equipment: the Intel® IXP420, IXP421 and IXP422 network processors. These processors are designed to provide equipment makers with a wide range of WAN and LAN interfaces for a variety of applications. The Linksys Group, Inc., a division of Cisco Systems, Inc. and a developer of wireless devices for business and hotspot environments, announced that it is using one of these processors in a new generation of 802.11 wireless access points for small to mid-size businesses.

Our embedded processing components are used for high-performance applications and control processing for modular communications and networked storage equipment. These processing components are also used in industrial automation equipment,

point-of-sale systems and monitoring equipment, as well as other applications. Our product families include the Celeron and Intel® Pentium® III processors, as well as the Mobile Intel Pentium 4 Processor-M and the Intel Pentium 4 processor. We also offer Intel Xeon processors with HT Technology, providing increased performance for wireless infrastructure equipment. In April 2003, we added the Intel Pentium M processor for embedded communications applications, which brings higher performance and better power management to ultra-dense modular communications equipment. It is used to manage network processors, line cards and other components in equipment such as radio network controllers and media gateway controllers.

In June 2003, we announced that we will support Advanced Switching, a standards-based extension of the PCI Express technology designed for the computing industry. Advanced Switching builds on the PCI Express technology to provide advanced communications features for interconnecting components and system boards in communications, storage and embedded applications. Having a widely accepted modular specification for interconnect technology is expected to lower development costs, increase reusability of technology and reduce time-to-market of new products. In September 2003, we demonstrated our first chips based on PCI Express technology and detailed our plans for integrating the next-generation interconnect of this technology into forthcoming computing and communications products in 2004.

In October 2003, we announced a new suite of Intel® NetStructure™ communications building blocks based on the Advanced Telecom Computing Architecture (an architecture for building standards-based wireless base station equipment) and featuring Intel microprocessors and network processors. The new products are designed to deliver high performance and high availability in carrier-grade wireless and wired telecommunications infrastructure applications.

In March 2003, we introduced the Intel® TXN18107 10-Gpbs XFP Transceiver, an optical transceiver that operates at multiple data rates, enabling equipment manufacturers to qualify a single part for multiple applications.

Microcontrollers

Our microcontrollers are primarily used in automotive systems. Product families include the Intel® 186, Intel386™, Intel486™ and Intel® i960® processors; and 8-bit and 16-bit microcontrollers.

Wireless Communications and Computing Group

WCCG provides component-level building blocks for digital cellular communications and other applications requiring both low-power processing and high performance. For the handheld platform, including cellular phones and personal digital assistants (PDAs), our current products include flash memory, application and cellular processors based on the Intel XScale microarchitecture, and cellular baseband chipsets. In addition, our Intel® Personal Internet Client Architecture (Intel® PCA) outlines an architecture for communications, application and memory subsystems for data-enabled mobile phones, and portable handheld devices. Growth in the market segment for handheld computing and communications devices is dependent upon the increased use of devices with more data-intensive applications and additional capabilities.

Net revenue for WCCG made up approximately 6% of our consolidated net revenue for 2003.

Flash Memory

Flash memory is a specialized type of memory component used to store user data and program code; it retains this information even when the power is off. Flash memory is based on either NOR or NAND architectures. Our flash memory is based on the NOR architecture. NOR flash memory, with its fast "read" capabilities, has traditionally been used to store executable code. NAND flash memory, which is slower in reading data but faster in writing data, has traditionally been used in products that either required large storage capacity or fast write applications, such as MP3 music players, memory cards and digital cameras. Although our NOR flash memory is currently used predominantly in mobile phones and PDAs, it is also found in other consumer products, including set-top boxes and MP3 players.

In April 2003, we introduced the Intel® Ultra-Thin Stacked Chip-Scale Packaging, featuring 1.8-volt Intel StrataFlash® wireless memory. This product allows up to five ultra-thin memory chips to be stacked in one package, delivering greater memory capacity and lower power consumption in a smaller package. With heights as low as 1.0mm, this new package allows manufacturers to increase memory density and provide features such as camera capabilities, games and e-mail in relatively thin cell phones. Intel StrataFlash wireless memory technology allows 2 bits of data to be stored in each memory cell, for higher storage capacity and lower cost.

In October 2003, we introduced the Intel StrataFlash® Wireless Memory System, a memory system designed for next-generation handsets that require memory storage for large embedded data applications such as camera images and audio and video files. The system contains code execution, data storage and RAM working space memory in one small package and operates at 1.8 volts to support longer battery life.

Application Processors for Handheld Computing Devices

We are working toward the convergence of computing and communications in the mobile handheld computing market segment by developing technology that combines baseband communications features with memory and applications processing functionality. In March 2003, we introduced "system-in-a-package" technology in the form of three new processors: the Intel® PXA263, Intel® PXA260 and Intel® PXA255 microprocessors. These processors, which are designed for PDAs and are based on Intel PCA, stack an Intel XScale technology-based processor directly on top of Intel StrataFlash memory chips in a single package. With stack packaging, manufacturers of these handheld devices can decrease the size of the form factor, as well as help reduce their time-to-market.

In September 2003, we announced key details about our next-generation of Intel XScale technology-based processors to be used in cell phones, PDAs and other wireless devices. We plan to incorporate additional features in these processors that are intended to help wireless devices capture higher quality pictures, extend battery life and deliver fast multimedia performance. These features will include Intel® Quick Capture technology, an interface that allows a digital camera to connect to a cell phone or PDA; Intel® Wireless MMX™ technology, which is designed to speed multimedia performance; and Wireless Intel SpeedStep® technology, which dynamically adjusts the power and performance of the processor based on CPU demand, often resulting in lower power consumption for wireless handheld devices.

Cellular Processors

Addressing the trend toward the convergence of computing and communications, in February 2003 we introduced the first cellular processor using advanced "wireless-Internet-on-a-chip" technology: the Intel® PXA800F cellular processor. It is the industry's first product that integrates computing, communications and memory functions on one chip. Built on our 130-nanometer silicon manufacturing technology, the chip combines a high-performance, low-power processor running at 312 MHz based on the Intel XScale technology with 4 MB of integrated on-chip flash memory and 512 KB of SRAM. It also includes a 104-MHz digital signal processor with additional memory, resulting in a complete system on a single chip for GSM (Global System for Mobile Communications)/GPRS (General Packet Radio Service) cellular networked devices. Although the timing of availability for this cellular processor was later than we had initially planned, we continue to work with our customers to help them launch products incorporating this processor.

Cellular Baseband Chipsets

We offer baseband chipsets for multi-mode, multi-band wireless handsets. Our chipsets support multiple wireless standards and deliver enhanced voice quality and high integration capability, with reduced power consumption and costs. We offer the Intel® D5205 TDMA (Time Division Multiple Access) Baseband Chipset, a compact two-chip solution, and the Intel® 5206 TDMA Baseband Chip, a compact single-chip solution, both for dual-mode cellular and Personal Communication Services (PCS) band applications. We also offer the Intel® D5314 PDCharm2 Single-Chip Baseband, a compact single-chip solution for dual-rate (full- and half-rate) baseband processing for personal digital cellular handheld phones.

Manufacturing, Assembly and Test

As of year-end 2003, more than 75% of our wafer manufacturing, including microprocessor, chipset, flash memory and networking silicon fabrication, was conducted within the U.S. at our facilities in Oregon, Arizona, New Mexico, Massachusetts, California and Colorado. Outside the U.S., almost 25% of our wafer manufacturing, also including wafer fabrication for microprocessors, chipsets, flash memory and networking silicon, was conducted at our facilities in Israel and Ireland. Currently, our facilities in Israel manufacture primarily chipsets.

In 2003, we continued to transition our manufacturing facilities from 200mm (8-inch) wafers to 300mm (12-inch) wafers. The conversion to 300mm wafers allows for more efficient use of our capital investment in equipment by providing more than twice as many equivalent chips per wafer as 200mm wafers. Two of our facilities, in Oregon and New Mexico, currently manufacture products using 300mm wafers. We expect to have three 300mm wafer fabrication facilities by the end of 2004, with the third facility under construction in Ireland. We also announced plans for two additional facilities, in Oregon and Arizona, to start production using 300mm wafers after 2004. However, as of year-end 2003, a substantial majority of our microprocessors and chipsets were manufactured on 200mm wafers in Arizona, Oregon, Israel, Massachusetts, Ireland, New Mexico and California.

We also began manufacturing microprocessors on our most advanced 90-nanometer (a nanometer is one billionth of a meter) process technology, the next generation beyond our 130-nanometer (0.13-micron) process technology. The 90-nanometer process technology is our most advanced high-volume production process featuring structures smaller than the size of a virus, the smallest microorganism. As we move to each succeeding generation of manufacturing process technology, we utilize less space per transistor, which enables us to put more transistors on an equivalent size chip, decrease the size of the chip or offer an increased number of integrated features, which can result in faster microprocessors, products that consume less power and/or products that cost less to manufacture. As of year-end 2003, the majority of our microprocessors and chipsets were manufactured using our 130-nanometer process technology.

We manufacture flash memory using our 130-nanometer process technology primarily in New Mexico, and also in Ireland and California. We also manufacture flash memory in Colorado using our 180-nanometer (0.18-micron) technology.

We manufacture microprocessor- and networking-related board-level products, primarily in Malaysia and California. We also use subcontractors to manufacture some board-level products and systems, and purchase certain communications networking products from external vendors, primarily in the Asia-Pacific region.

We perform a substantial majority of our components assembly and test at facilities in Malaysia, the Philippines, Costa Rica and China. In the third quarter of 2003, we announced plans to begin construction on an additional assembly and test facility in Chengdu, China. We plan to continue to invest in new assembly and test technologies and facilities to keep pace with our microprocessor, chipset and flash technology improvements. To augment capacity in the U.S. as well as internationally, we use subcontractors to perform assembly of certain products, primarily flash memory, chipsets, and networking and communications products, as well as third-party manufacturing services (foundries) to manufacture wafers for certain components, including networking and communications products. Our performance expectations for business integrity; ethics; environmental, health and safety compliance; and employment practices are the same regardless of whether our supplier and subcontractor operations are based in the U.S. or elsewhere.

We have thousands of suppliers, including subcontractors, providing our various materials and service needs. We set expectations for supplier performance and reinforce those expectations with periodic assessments. We communicate those expectations to our suppliers regularly and work with them to implement improvements when necessary. We seek, where possible, to have several sources of supply for all of these materials and resources, but we may rely on a single or limited number of suppliers, or upon suppliers in a single country. In those cases, we develop and implement plans and actions to reduce the exposure that would result from a disruption in supply. We also typically have multiple factories at various sites around the world producing our products. However, some products are produced in only one factory, and again we seek, through other actions and plans, to reduce the exposure that would result from a disruption at that factory.

Manufacturing of integrated circuits is a complex process. Normal manufacturing risks include errors and interruptions in the production process, defects in raw materials and disruptions at suppliers, as well as other risks, all of which can affect the timing of the manufacturing ramp and yields. A substantial decrease in yields would result in higher manufacturing costs and the possibility of not being able to produce sufficient volume to meet specific product demand.

We operate globally, with sales offices and research and development activities, as well as manufacturing and assembly and test facilities, in many countries, so we are subject to risks and factors associated with doing business outside the U.S. Global operations involve inherent risks that include currency controls and fluctuations, tariff and import regulations, and regulatory requirements that may limit our or our customers' ability to manufacture, assemble and test, design, develop or sell products in particular countries. As part of our site-selection due diligence processes, we employ assessments of several criteria, which include the property's physical characteristics or constructability, local utility infrastructure, transportation capability, availability of technical workforce, construction and supplier capabilities, permitting requirements and investment conditions. Employment practices and labor rights issues are incorporated in the diligence. Evaluations also include ratings for security concerns, which include corruption, terrorism, crime and political instability. Security concerns alone are sufficient to remove projects from consideration. Regardless of these efforts, if terrorist activity, armed conflict, civil or military unrest, or political instability occurs in the U.S., Israel or other locations, such events may disrupt production, logistics, security and communications, and could also result in reduced demand for Intel's products. The impact of major health concerns, or of large-scale outages or interruptions of service from utility or other infrastructure providers, on Intel, its suppliers, customers or other third parties could also adversely affect our business and impact customer order patterns. We could also be affected if labor issues disrupt our transportation arrangements or those of our customers or suppliers. On a worldwide basis, we regularly review our key infrastructure, systems, services and suppliers both internally and externally, to seek to identify significant vulnerabilities as well as areas of potential business impact if a disruptive event were to occur. Once they are identified, we assess the risks, and as we consider them to be appropriate, we initiate actions intended to reduce the risks and their potential impact. However, there can be no assurance that we have identified all significant risks or that we can mitigate all identified risks with reasonable effort.

We maintain a program of insurance coverage for various types of property, casualty and other risks. We place our insurance coverage with various carriers in numerous jurisdictions. The policies are subject to deductibles and exclusions that result in our retention of a level of risk on a self-insurance basis. The types and amounts of insurance obtained vary from time to time and from location to location depending on availability, cost and our decisions with respect to risk retention. Our worldwide risk and insurance programs are continually evaluated to seek to obtain the most favorable terms and conditions.

For information regarding environmental matters and proceedings related to certain facilities, refer to the headings "Compliance with Environmental, Health and Safety Regulations" below in this Item and "Legal Proceedings" in Part I, Item 3 of this Form 10-K.

Employees

As of December 27, 2003, we employed approximately 79,700 people worldwide, with approximately 60% of these employees located in the U.S.

Sales and Marketing

In 2003, we conducted business with more than 2,000 direct customers worldwide. Most of our products are sold or licensed through sales offices located near major concentrations of users, primarily throughout the Americas, Europe, Asia-Pacific and Japan. Sales agreements typically contain standard terms and conditions covering matters such as pricing, payment terms and warranties, as well as indemnities for issues specific to our products, such as patent and copyright indemnities. From time to time we may enter into additional agreements with customers covering, for example, changes from our standard terms and conditions, new product development and marketing, private-label branding and other matters. Sales of particular products are generally conducted with purchase orders issued under the sales agreements. Most of Intel's sales are made using electronic and web-based processes that allow the customer to review inventory availability and to track the progress of specific goods under order. Pricing on particular products may vary based on volumes ordered and other factors.

We sell our products worldwide directly to original equipment manufacturers (OEMs) and original design manufacturers (ODMs). ODMs provide design and/or manufacturing services to branded and unbranded private-label resellers. We also sell our products to industrial and retail distributors. Dell Inc. contributed approximately 19% to our total sales, and Hewlett-Packard Company contributed approximately 15% to our total sales, in 2003. A substantial majority of the sales to these customers consisted of Intel Architecture business products. No other customer accounted for more than 10% of our total revenue. For the information regarding revenue and operating profit by reportable segments and revenue from unaffiliated customers by geographic region/country, see "Note 22: Operating Segment and Geographic Information" in Part II, Item 8 of this Form 10-K and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of this Form 10-K.

Typically, distributors handle a wide variety of products, including those that compete with our products, and fill orders for many customers. Most of our sales to distributors are made under agreements allowing for price protection on unsold merchandise and a right of return on stipulated quantities of unsold merchandise. We also utilize third-party sales representatives who generally do not offer directly competitive products but may carry complementary items manufactured by others. Sales representatives do not maintain a product inventory; instead, their customers place orders directly with us or through distributors.

Our worldwide reseller sales channel consists of thousands of indirect customers that are systems builders who purchase Intel microprocessors and other products from our distributors. These systems builders receive various levels of technical and marketing services and support directly from Intel. We have a "boxed processor program" that allows distributors to sell Intel microprocessors in small quantities to these systems-builder customers; boxed processors are also made available in direct retail outlets. Since 1994, our worldwide reseller sales channel has grown substantially and has become increasingly important to our business.

Our global marketing strategy is designed to associate our brands with advanced technology and innovation. Under the Intel® brand umbrella, the Intel Inside® brand is intended to represent technology leadership, quality and reliability. At the product level, the Itanium, Intel Xeon, Pentium, Celeron and Intel Centrino brands are part of the Intel Inside brand family.

We promote brand awareness and generate demand through our direct marketing and co-marketing programs. Our direct marketing activities include television, print and web-based advertising as well as press relations, consumer and trade events, and industry and consumer communications. In 2003, the primary focus of our direct marketing activities was the Intel Centrino mobile technology launch, with the Intel Pentium 4 processor with HT Technology and other product-level brands receiving targeted support.

Purchases by customers often allow them to participate in cooperative advertising and marketing programs such as the Intel Inside Program. Through the Intel Inside Program, OEMs are licensed to place the Intel Inside logos on computers with our microprocessors and our other technology and use the brands in advertisements. The program includes a market development component that accrues funds based on purchases and partially reimburses the OEMs for advertisements for products featuring the Intel Inside brand. This program broadens brand reach beyond the scope of our direct advertising.

Additionally, our reseller sales channel marketing programs are intended to extend the Intel Inside brand reach to channel customers and the businesses and individuals that purchase computer systems from them. In 2003, we initiated a program to extend the awareness of our brand outside of the OEM and system integrator community. As part of the Intel Centrino mobile technology launch, new co-marketing programs were initiated with wireless service providers and at public wireless access point locations. New co-marketing activities with independent system vendors are also under way.

Our products are typically shipped under terms that transfer title to the customer, even in arrangements for which the customer may have a right to return or to exchange the products and the recognition of revenue on the sale is deferred. The sales agreements typically provide that payment is due at a later date, such as 30 days after shipment, delivery or the customer's use of the product. Our credit department sets accounts receivable and shipping limits for individual customers, for the purpose of controlling credit risk to Intel arising from outstanding account balances. We assess credit risk through quantitative and qualitative analysis, and from this analysis, we establish credit limits and determine whether we will seek to use one or more credit support devices, such as obtaining some form of third-party guaranty or standby letter of credit, or obtaining credit insurance for all or a portion of the account balance. Credit losses may still be incurred due to bankruptcy, fraud or other failure of the customer to pay. See "Schedule II—Valuation and Qualifying Accounts" on page 90 of this Form 10-K for information about our allowance for doubtful receivables.

Backlog

We do not believe that a backlog as of any particular date is indicative of future results. Our sales are made primarily pursuant to standard purchase orders for delivery of standard products. We have some agreements that give a customer the right to purchase a specific number of products during a specified time period. Although these agreements do not generally obligate the customer to purchase any particular number of such products, some of these agreements do contain billback clauses. Under these clauses, customers who do not purchase the full volume agreed upon are liable for billback on previous shipments up to the price appropriate for the quantity actually purchased. As a matter of industry practice, billback clauses are difficult to enforce. The quantity actually purchased by the customer, as well as the shipment schedules, are frequently revised during the agreement term to reflect changes in the customer's needs. In light of industry practice and our experience, we do not believe that such agreements are meaningful for determining backlog amounts. We believe that only a small portion of our order backlog is non-cancelable and that the dollar amount associated with the non-cancelable portion is not significant.

Competition

As part of our overall strategy to compete in each relevant market segment, we use our core competencies in the design and manufacture of integrated circuits and financial resources, as well as our global presence and brand recognition. Also, under our Intel Capital program we make equity investments in companies around the world to further our strategic objectives and support our key business initiatives. Our products compete, to various degrees, on the basis of performance, quality, features that enhance user experience, brand recognition, price and availability. Our ability to compete also depends upon our ability to provide worldwide support for our customers. Rapid technological advances characterize the computing and communications industries, and our ability to compete depends on our ability to improve our products and processes faster than our competitors, anticipate changing customer requirements, and develop and launch new products to meet changing requirements, while reducing our costs at the same time. Our products compete with products developed for similar or rival architectures and with products based on the same or rival technology standards. Our competitors also routinely add features to their products, seek to increase the performance of their products and/or sell their products at lower prices over time. We cannot predict whether our products will continue to compete successfully with existing rival architectures and/or whether new architectures will establish or gain broad acceptance or increase competition with our products. We also cannot predict which competing technology standards will become the prevailing standards in the market segments in which we compete.

In the semiconductor industry, as unit volumes grow, production experience is accumulated and costs decrease, further competition develops, and as a result, prices decline rapidly. The life cycle of our products is very short, sometimes less than a year. Many companies compete with us in the various computing, networking and communications market segments, and are engaged in the same basic fields of activity, including research and development. Worldwide, these competitors range in size from large established

multinational companies with multiple product lines to smaller companies and new entrants to the marketplace that compete in specialized market segments. In some cases, our competitors are also our customers and/or suppliers. Some competitors have integrated operations, including their own manufacturing facilities, while other competitors perform certain functions themselves and outsource design, manufacturing and/or other functions. Competitors who outsource their manufacturing can significantly reduce their capital expenditures.

With the trend toward convergence in computing and communications products, product offerings will likely cross over into multiple categories, offering us new opportunities, but also resulting in more businesses that compete with us. Competition tends to increase pricing pressure on our products, which may mean that we must offer our products at lower prices than we had anticipated, resulting in lower profits. In markets where our competitors have established products and brand recognition, it may be inherently difficult for us to compete against them. When we believe it is appropriate, we will take various steps, including introducing new products, discontinuing older products, reducing prices, and offering rebates and other incentives in order to increase acceptance of our latest products and to be competitive within each relevant market segment.

Most of our products, including all of our Intel architecture microprocessors and chipsets, are built in our own manufacturing facilities, although a substantial portion of ICG's manufacturing is performed by third-party manufacturers. We believe that our network of manufacturing facilities and assembly/test facilities gives us a competitive advantage. This network enables us to have more direct control over our processes, quality control, product cost, volume and timing of production and other factors. These types of facilities are very expensive, and many of our competitors do not own such facilities because they cannot afford to do so or because their business models involve the use of third-party facilities for manufacturing and assembly/test. These "fabless semiconductor companies" include Broadcom Corporation, NVIDIA Corporation, QUALCOMM Incorporated, and VIA Technologies, Inc. Some of our competitors own portions of such facilities through investment or joint-venture arrangements with other companies. There is a group of third-party manufacturing and assembly/test companies (foundries) that offer their services to companies without owned facilities or companies needing additional capacity. These foundries may also offer intellectual property, design services, and other goods and services to our competitors.

Many of our competitors are licensed to use our patents, and we are licensed to use their patents, through various cross-licensing agreements. Some competitors have broad licenses with us, and under current case law, such licenses permit these competitors to pass our patent rights on to others. If one of these licensees becomes a foundry, our competitors might be able to avoid our patent rights in manufacturing competing products.

We plan to continue to cultivate new businesses and work with the computing, communications and consumer electronics industries through standards bodies, trade associations, OEMs, ODMs, and independent software and operating system vendors, to align the industry to offer products that take advantage of the latest market trends and usage models. These efforts include helping to create the infrastructure for wireless network connectivity. We are also working with the industry to develop software applications and operating systems that take advantage of our microprocessors, chipsets and other next-generation semiconductor devices with higher performance or advanced features, including advanced technology capabilities integrated at the silicon level. We frequently participate in industry initiatives designed to discuss and agree upon technical specifications and other aspects of technologies that could be adopted as standards by standards-setting organizations. Our competitors may also participate in the same initiatives, and our participation does not ensure that any standards or specifications adopted by these organizations will be consistent with our product planning. Participation in such initiatives may require us to license our patents to other companies that adopt the standards or specifications, even when such organizations do not adopt standards or specifications proposed by Intel. Any Intel patents implicated by our participation in such initiatives might not be available for us to enforce against others who might be infringing those patents.

We compete globally in all of the market segments in which we offer products. We cannot be assured that the patents and licenses on our products will be honored in all regions. As various geographies become more significant to our business, we cannot be sure of the scope of intellectual property rights that will be granted to us or to third parties with whom we do not have licenses. Thus, we have no assurance about the scope of rights that we can enforce against others in various geographies where our business is growing or the rights that they can assert against us. In addition, in certain regions, governments may adopt regulations or courts may render decisions requiring compulsory licensing of intellectual property to others, or requiring that products meet specified standards that serve to favor local companies, negatively impacting Intel's ability to achieve an economic return for its innovation and investment.

Intel Architecture Business

For the desktop platform, our strategy is to introduce microprocessors and chipsets with higher performance and/or advanced technology features, tailored to the needs of different market segments using a tiered branding approach. For the mobile platform, our strategy is to deliver products optimized for some or all of the four mobility vectors: performance, battery life, form factor and wireless connectivity. For the enterprise platform, our strategy is to provide processors and chipsets with high performance and/or advanced technology features, as well as competitive price for performance for entry-level to high-end servers and workstations.

Our financial results are substantially dependent on microprocessor sales by the Intel Architecture operating segment. Many of our competitors (including Advanced Micro Devices, Inc. (AMD), our primary microprocessor competitor) market software-compatible products that are intended to compete with Intel architecture-based processors. We also face competition from companies offering rival microprocessor designs, such as International Business Machines Corporation (IBM), which supplies microprocessors to Apple Computer, Inc. AMD has introduced microprocessor product offerings for the desktop and server market segments that are based on 32-bit architecture with 64-bit memory address extensions. Microprocessors with 64-bit addressing capability can address significantly more memory than 32-bit microprocessors. We currently have desktop and server microprocessor product offerings based on our IA-32 architecture, and we offer the Intel Itanium processor family, based on 64-bit architecture, for enterprise-class servers and supercomputing solutions. We believe that the features of the Itanium architecture, including high-end performance, scalability, 64-bit addressing and reliability, provide capabilities that users in this market segment require. We plan to introduce Intel Xeon processors based on the IA-32 architecture with 64-bit extension technology for workstations and servers in mid-2004. We continuously evaluate all of our product offerings and the timing of their introduction, taking into account factors such as customer requirements, availability of infrastructure to take advantage of product features and maturity of applications software for each type of processor in the relevant market segments. Any decision to make microprocessors with 64-bit extension technology available in the desktop or other market segments will be based on both timing of availability of the infrastructure (including an operating system geared toward consumers) required to support them and demand for these processors from our OEM customers.

Competitive product offerings continue to increase in the market segments where we have product offerings. Our desktop processors compete with products offered by AMD, IBM and VIA, among others. Our mobile microprocessor products compete with products offered by AMD, IBM, Transmeta Corporation and VIA, among others. Our server processors compete with software-compatible products offered by AMD and with established products based on rival architectures, including those offered by Hewlett-Packard Company, IBM and Sun Microsystems, Inc. Our chipsets compete in the various market segments against different types of chipsets that support either our microprocessor products or rival microprocessor products. Competing chipsets are produced by companies such as ATI Technologies, Inc., Broadcom, NVIDIA, Silicon Integrated Systems Corporation (SIS) and VIA. We also compete with companies offering graphics components and other special-purpose products used in the desktop, mobile and server market segments. One aspect of our business model is to incorporate higher performance and advanced features into the microprocessor and chipset, the demand for which may increasingly be affected by competition from companies (such as NVIDIA and ATI) whose business models are based on incorporating performance and advanced features into chipsets and other components (such as graphics controllers).

Intel Communications Group

Within ICG, our strategy is to be the leading supplier of silicon and integrated networking and communications building blocks for OEMs and other systems builders. We are developing products that we believe will help to build out the Internet: products designed for wired and wireless connectivity, communications infrastructure and networked storage. In these areas, we face competition from both established and emerging companies. Our products currently compete against offerings from companies such as Applied Micro Circuits Corporation, Broadcom, Globespan Virata, Inc., IBM, Marvell Technology Co. Ltd. and Texas Instruments Incorporated. Intel and many of our competitors acquire alternative technologies and products from other companies in an effort to achieve leading-edge market segment positions. Certain market segments in which ICG may compete, such as networking and telecommunications products, have experienced an overall economic decline. These market conditions have resulted in increased competition for the remaining available business opportunities. We cannot predict whether our networking and communications products will continue to compete successfully with those of our existing competitors or new market entrants.

Wireless Communications and Computing Group

Within WCCG, our current products include flash memory, application and cellular processors based on the Intel XScale microarchitecture, and cellular baseband chipsets. In our various market segments, our products currently compete with the products of other companies, such as FASL LLC (a joint venture between Fujitsu Limited and AMD), QUALCOMM, Samsung Semiconductor Inc., ST Microelectronics Group and Texas Instruments. The megabit demand of the products that make use of flash memory is increasing, and our NOR flash memory products may face increased competition from companies that manufacture NAND flash products, as OEMs may look for opportunities to use NAND flash products with additional random access memory or in combination with NOR flash memory for executable-code applications. Various digital cellular technologies are used throughout the cellular communications industry, including but not limited to GSM (Global System for Mobile Communications), GPRS (General Packet Radio Service), CDMA (Code Division Multiple Access) and WCDMA (Wideband CDMA). Our ability to compete successfully with our cellular baseband chipsets is dependent on having products available for the most prevalent or widely adopted digital cellular technology. Our current product offerings are for use in cell phones and PDAs that incorporate the GSM/GPRS cellular technologies. Our products planned for release in 2004 will be targeted for the WCDMA as well as GSM/GPRS cellular technologies.

Research and Development

Our continued emphasis on research and development (R&D) has enabled us to be a leader in our industry, particularly in the area of the design and manufacture of integrated circuits. Much of our R&D efforts have been centered on accelerating the convergence of computing and communications, primarily through silicon integration as well as through industry collaboration, enabling us to deliver leading-edge technologies and permitting our customers to commit to the use of these new technologies in the development and expansion of their own product offerings. Specifically, our R&D activities are directed toward developing new silicon-level products and architectures; advanced computing, communications and wireless technologies; and new manufacturing, packaging and testing processes; as well as improving existing products and lowering costs. In addition, we believe we are well positioned in the technology industry to help drive innovation, foster collaboration and promote industry standards that will yield innovative and improved technologies for end users.

Our R&D model is based on a global, decentralized organization that emphasizes a collaborative approach in identifying and developing new technologies, leading standards initiatives and influencing regulatory policy to accelerate the adoption of new technologies. Our Corporate Technology Group (CTG) strives to align our R&D initiatives across our business groups to meet our long-term goals. In addition, CTG works with a decentralized worldwide network of researchers, scientists and engineers in the computing and communications fields. A decentralized network of technology professionals allows us, as well as others in our industry, to benefit from development initiatives in a variety of areas, eventually leading to innovative technologies for end users. We view technology standards as an important way to advance new technologies and foster industry infrastructures or ecosystems. We therefore work with industry, government and education sectors in various areas to help establish technology standards, ultimately incorporating many of these standards into our own product offerings.

We perform a substantial majority of our design and development of semiconductor components and other products in the U.S. Outside the U.S., we have been increasing our product development activities at various locations, including Israel, Malaysia, India, China and Russia. We also maintain R&D facilities in the U.S. that are focused on developing and improving manufacturing processes, as well as facilities in the U.S., Malaysia and the Philippines that are dedicated to improvements in assembly and test processes.

As devices take advantage of converged computing and communications capabilities, our goal is to continue to deliver processors with higher performance and/or advanced technology features such as HT Technology and features offered with our Intel Centrino mobile technology. During 2003, we expanded HT Technology from our server product lines to our desktop and mobile transportable product lines. We also continued R&D activities in support of Intel Centrino mobile technology. In September 2003, we announced our intention to introduce a new mobile platform, based on Intel Centrino mobile technology, in the second half of 2004. This new mobile platform is expected to incorporate a future version of the Pentium M processor and a new chipset, as well as integrate 802.11 a/b/g wireless LAN capability, enabling faster wireless communications and support for industry-standard security solutions.

In addition to the multithreading or multitasking capability found in HT Technology and the enhanced mobile computing features offered with Intel Centrino mobile technology, we believe that system security, reliability and manageability features at the hardware level will provide an enhanced computing experience for end users, and we are currently working on new technologies to meet these needs. We are designing technology intended to provide future security enhancements for our processors, chipsets and platforms. This technology, when combined with optimized software, will help protect against software-based attacks on computer systems. We are also

designing technology intended to enable multiple, independent software environments in a single PC, improving the end-user experience by increasing system reliability, flexibility and responsiveness, as well as speeding the ability to recover from computer crashes.

We believe that technology-industry product developments and the convergence of computing and communications should increase demand for our higher performance enterprise platform products. In particular, we anticipate increased demand for our products to support new developments in data traffic management, storage, and wireless computing and communications needs. In line with this belief, we continued our development initiatives around enterprise platform products, and in September 2003, we disclosed details of an upcoming Intel Xeon processor that will contain a dual core on one chip (two microprocessors on the same chip). We also plan to make the Intel Itanium 2 processor available with multiple cores.

Our leadership in silicon technology has allowed us to continue to help extend "Moore's Law" (doubling the number of transistors on a chip every couple of years), increasing performance while reducing manufacturing costs, and also to help expand Moore's Law, bringing new capabilities into silicon and producing new products optimized for a wider variety of applications. We are currently manufacturing microprocessors using the 90-nanometer process technology. Our 90-nanometer process technology combines the use of strained silicon and copper interconnects that have integrated advanced materials (carbon-doped oxide dielectric material). By using strained silicon, electrical current is able to flow more smoothly, increasing the speed of transistors. The copper interconnects integrated with these advanced materials allow for increased signal speed and reduced power consumption. We also continue to work on incorporating communications capabilities into our 90-nanometer manufacturing process. These capabilities include the use of high-speed transistors and "mixed-signal" circuitry, aimed at producing faster, more integrated and less costly communications chips. In 2003, we announced plans to convert and build manufacturing facilities to begin development of our next-generation 65-nanometer manufacturing process. We expect to begin manufacturing products using 65-nanometer process technology in 2005.

We also have R&D initiatives in other wireless, networking and communications product areas. For wireless devices, we have development projects surrounding the Intel PCA architecture. The Intel PCA architecture is our development blueprint for designing wireless handheld communications devices that combine voice communications and Internet access capabilities. Development initiatives around Intel PCA include processor design based on the Intel XScale technology, digital signal processing core development, improved packaging formats and other communications intellectual property. In the longer term, our wireless R&D efforts are anticipated to encompass a wide array of activities ranging from RF (radio frequency) circuit and adaptive radio architecture designs to global communications standards advocacy and regulatory policy reform. These efforts seek to help make wireless connectivity ubiquitous by integrating radio capability into our processors and chipsets.

For networking and communications products, we have focused our development efforts on wireless technologies based on new generations of 802.11 industry standards, and these efforts have led to higher performance Ethernet connectivity products. We are working to develop silicon based on the IEEE 802.16d standard (also called WiMAX), which is a wireless broadband access technology that links WLAN/WiFi hotspots, provides broadband wireless connectivity to businesses and homes, and is expected to enable broadband wireless access as an alternative to existing "last mile" methods such as cable and digital subscriber lines (DSL). We also have development initiatives focusing on 802.11n, a next-generation WLAN technology that is expected to enable approximately three times the performance of current 802.11 solutions. Finally, our efforts in network and communications initiatives have led to higher performance network processors based on the Intel XScale technology, modular communications building blocks that reduce development costs and time for network systems developers, and standardized optical components and modules for reduced power consumption and cost.

In addition, we are working to bring advanced silicon technologies to consumer electronics. We are currently developing a new technology based on a technique called Liquid Crystal on Silicon (LCOS). LCOS is used to create small chips called micro-displays that produce images that are displayed on large-screen, rear-projection televisions.

Our R&D on both processes and products may involve current-generation activities as well as development of process and product roadmaps extending into the future for successive generations. Our manufacturing process work, particularly for future process technology generations, typically involves substantial experimentation, invention and evaluation relating to numerous aspects of manufacturing capability. To varying degrees, these efforts rely on the work of third parties such as university researchers and manufacturers of semiconductor factory equipment. Our process development work may involve alternative and competing technologies, and, for technological or other business reasons, not all of our efforts will result in technology that we deploy in our manufacturing operations.

From time to time, we may terminate product development before completion or decide not to manufacture and sell a developed product. We do not expect that all of our product development projects will result in products that are ultimately released for sale. For a

variety of reasons, we may decide not to move forward with a particular product. For example, we may decide that the product might not be sufficiently competitive in the relevant market segment, or for technological or marketing reasons, we may decide to offer a different product instead. Our products often incorporate features that will only increase the product's performance or be otherwise useful to the end user if other companies have developed operating systems, other software applications or other hardware that take advantage of these features. We continue to work with other hardware and software companies and industry groups to encourage the development of product offerings designed to take advantage of our products' features.

We continue our commitment to invest in leading-edge technology development. Our expenditures for R&D were $4,360 million in fiscal 2003, $4,034 million in fiscal 2002 and $3,796 million in fiscal 2001. Additionally, we incurred charges for purchased in-process R&D related to acquisitions of $5 million for fiscal 2003, $20 million for fiscal 2002 and $198 million for fiscal 2001. While we held the total number of employees flat, we increased the number of our employees engaged in R&D to approximately 23,000 at December 2003 compared to approximately 21,000 at December 2002.

Acquisitions and Strategic Investments

The level of new acquisition and strategic investment activity for 2003 and 2002 was substantially lower than in prior years. During 2003, we completed one acquisition for total consideration of $21 million. We also acquired one development-stage operation in exchange for total consideration of approximately $40 million.

Under our Intel Capital program, we make equity investments in companies around the world to further our strategic objectives and support our key business initiatives. The Intel Capital program focuses on investing in companies and initiatives to stimulate growth in the Internet economy and its infrastructure, create new business opportunities for Intel, and expand global markets for our products. The investments may support, among other things, Intel product initiatives, emerging trends in the technology industry or worldwide Internet deployment. This strategic investment program helps advance our overall mission to be the preeminent supplier of building blocks to the worldwide Internet economy. Many of our investments are in private companies, including development-stage companies with little or no revenue from current product offerings.

We invest in companies that develop software, hardware and other technologies or provide services supporting our technologies. Our current investment focus areas include: enabling mobile and Internet client devices, helping to create the digital home, advancing high-performance communications infrastructures and developing the next generation of silicon production technologies. Our focus areas tend to develop and change over time due to rapid advancements in technology.

Intellectual Property and Licensing

Intellectual property rights that apply to our various products and services include patents, copyrights, trade secrets, trademarks and maskwork rights. We maintain an active program to protect our investment in technology by enforcing our intellectual property rights. The extent of the legal protection given to different types of intellectual property rights varies under different countries' legal systems. We intend to license our intellectual property rights broadly where we can obtain adequate consideration. See "Competition" in Part I, Item 1 of this Form 10-K.

We have filed and obtained a number of patents in the U.S. and abroad. While our patents are an important element of our success, our business as a whole is not materially dependent on any one patent. We and other companies in the computing, telecommunications and related high-technology fields typically apply for and receive, in the aggregate, thousands of patents annually in the U.S. and other countries. We believe that the duration of the applicable patents we are granted is adequate relative to the expected lives of our products. Because of the fast pace of innovation and product development, our products are often obsolete before the patents related to them expire, and sometimes are obsolete before the patents related to them are even granted. As we expand our product offerings into new industries, such as consumer electronics, we extend our patent development efforts to patent such product offerings. Established competitors in these industries may already have patents covering similar products, and while our patents in adjacent technology areas may serve to deter some claims of infringement, there is no assurance that we will be able to obtain patents covering our own products, or that we will be able to obtain cross licenses from such competitors on favorable terms or at all.

The software embedded in our component and system-level products is entitled to copyright protection. Under some circumstances, we may require our customers to obtain a software license before we provide them with that software.

To distinguish genuine Intel products from our competitors' products, we have obtained certain trademarks and trade names for our products, and we maintain cooperative advertising programs with OEMs to promote our brands and identify products containing genuine Intel components.

We also protect certain details about our processes, products and strategies as trade secrets, keeping confidential the information that we believe provides us with a competitive advantage. We have ongoing programs designed to maintain the confidentiality of such information.

Our ability to enforce our patents, copyrights, software licenses and other intellectual property is subject to general litigation risks, as well as uncertainty as to the enforceability of various intellectual property rights in various countries. When we seek to enforce our rights, we are often subject to claims that the intellectual property right is invalid, is otherwise not enforceable or is licensed to the party against whom we are asserting a claim. In addition, our assertion of intellectual property rights often results in the other party seeking to assert alleged intellectual property rights of its own against us. Like many companies in the semiconductor and other high-technology industries, we receive claims that we may be infringing others' intellectual property rights. In addition, our sales agreements often contain intellectual property indemnities, such as patent and copyright indemnities, and our customers may assert claims against us for indemnity when they receive claims alleging that our customers' products infringe others' intellectual property rights. When we receive such claims, we refer them to our counsel, and current claims are in various stages of evaluation and negotiation. If we determine that it is necessary or desirable, we may seek licenses for certain intellectual property rights. However, we can give no assurance that we will be able to obtain licenses from any claimant, or that we can accept the terms of any offered licenses. Further, we are not able to resolve every dispute without litigation, which is typically time-consuming and expensive. If we are not ultimately successful in defending ourselves against these claims in litigation, we may not be able to sell a particular product or family of products due to an injunction, or we may have to pay material amounts of damages. See also the information under the heading "Legal Proceedings" in Part I, Item 3 of this Form 10-K.

Compliance with Environmental, Health and Safety Regulations

Intel is committed to achieving high standards of environmental quality and product safety, and strives to provide a safe and healthy workplace for our employees, contractors and the communities in which we do business. We have environmental, health and safety (EHS) policies and expectations that are applied to our global operations. Each of Intel's worldwide manufacturing and assembly/test sites is certified to the International Organization for Standardization (ISO) 14001 environmental management system standard, which requires that a broad range of environmental processes and policies be in place to minimize environmental impact and maintain compliance with environmental regulations. Intel's internal environmental auditing program includes not only compliance components, but also modules on business risk, environmental excellence and management systems. We have internal processes that focus on minimizing and properly managing any hazardous materials used in our facilities and products. We monitor regulatory trends and set company-wide short- and long-term performance targets for key resources and emissions. These targets address several parameters, including energy and water use, climate change, waste recycling and emissions. Intel remains on track to achieve our voluntary commitment to, by 2010, reduce emissions of certain global warming gases by 10% from 1995 levels. Due to Intel's increase in manufacturing since 1995, this equates to an actual reduction in 2004 of more than 90% from what Intel would have emitted without the voluntary reduction. The company also has several key technologies designed to reduce energy use in our products and products using our components and recently added an energy reduction goal to its list of EHS performance indicators. For example, all Intel desktop processors produced in 2003 are capable of taking advantage of the advanced energy savings features of the Instantly Available PC platform, which makes it possible to have a high-performance, feature-rich PC that is power efficient when both active and idle, and remains connected to a network even when powered off.

The manufacture, assembly and testing of Intel products requires the use of hazardous materials that are subject to a broad array of EHS laws and regulations. As Intel continues to advance process technology, the materials, technologies and products themselves become increasingly complex. Our evaluations of new materials for use in R&D, manufacturing, and assembly and test take into account EHS considerations and are a component of Intel's design for EHS processes. Many new materials being evaluated for use may be subject to regulation under existing or future laws and regulations. Failure to comply with any of the applicable laws or regulations could result in fines, suspension of production, alteration of fabrication and assembly processes, curtailment of operations or sales, and legal liability. Intel's failure to properly manage the use, transportation, emission, discharge, storage, recycling or disposal of hazardous materials could subject the company to future liabilities. Existing or future laws and regulations could require Intel to procure pollution abatement or remediation equipment, modify product designs, or incur other expenses associated with the laws and regulations. In addition, restrictions on the use of certain materials in our facilities or products in the future could have a material adverse effect on our operations. Compliance with these complex laws and regulations, as well as internal voluntary programs, is integrated into our manufacturing and assembly and test processes. To our knowledge, compliance with these laws and regulations has had no material effect upon our operations. We also refer to the information under the heading "Legal Proceedings" in Part I, Item 3 of this Form 10-K.

Executive Officers of the Registrant

The following sets forth certain information with regard to executive officers of Intel (ages are as of December 27, 2003):

Andrew S. Grove (age 67) has been a director of Intel since 1974 and Chairman of the Board since 1997. Dr. Grove was Chief Executive Officer from 1987 to 1998, President from 1979 to 1997 and Chief Operating Officer from 1976 to 1987.

Craig R. Barrett (age 64) has been a director of Intel since 1992 and Chief Executive Officer since 1998. Prior to that, Dr. Barrett was President from 1997 to 2002, Chief Operating Officer from 1993 to 1997 and Executive Vice President from 1990 to 1997.

Paul S. Otellini (age 53) has been a director of Intel and President and Chief Operating Officer since 2002. Prior to that, Mr. Otellini was Executive Vice President and General Manager, Intel Architecture Group, from 1998 to 2002; Executive Vice President and General Manager, Sales and Marketing Group, from 1996 to 1998; and Senior Vice President and General Manager, Sales and Marketing Group, from 1993 to 1996.

Andy D. Bryant (age 53) has been Executive Vice President and Chief Financial and Enterprise Services Officer since 2001, and was Senior Vice President and Chief Financial and Enterprise Services Officer from 1999 to 2001. Prior to that, Mr. Bryant was Senior Vice President and Chief Financial Officer in 1999, and Vice President and Chief Financial Officer from 1994 to 1999.

Sean M. Maloney (age 47) has been Executive Vice President and General Manager, Intel Communications Group, since 2001. Prior to that, Mr. Maloney was Executive Vice President and Director, Sales and Marketing Group, in 2001; Senior Vice President and Director, Sales and Marketing Group, from 1999 to 2001; Vice President and Director, Sales and Marketing Group, from 1998 to 1999; and Vice President, Sales, and General Manager, Asia-Pacific Operations, from 1995 to 1998.

Robert J. Baker (age 48) has been Senior Vice President and General Manager, Technology and Manufacturing Group, since 2001, and was Vice President and General Manager, Components Manufacturing, from 2000 to 2001. Prior to that, Mr. Baker managed Fab Sort Manufacturing from 1999 to 2000 and Microprocessor Components Manufacturing from 1996 to 1999.

Sunlin Chou (age 57) has been Senior Vice President and General Manager, Technology and Manufacturing Group, since 1998. Mr. Chou was Vice President, Technology and Manufacturing Group, from 1988 to 1998.

F. Thomas Dunlap, Jr. (age 52) has been Senior Vice President and General Counsel since 2001, and was Vice President and General Counsel from 1987 to 2001. Mr. Dunlap served as Secretary from 1983 to 2002.

Jason Chun Shen Chen (age 42) has been Vice President and Director, Sales and Marketing Group, since April 2003, and was Vice President and Co-General Manager of the Asia-Pacific Sales Region from 1999 to April 2003. Prior to that, Mr. Chen was Director of Distribution Sales for all of Asia-Pacific from 1997 to 1999.

John H. F. Miner (age 48) has been a Vice President of Intel Corporation and President of Intel Capital since April 2003, and was Vice President and General Manager of Intel Capital from 2002 to April 2003. Prior to that, Mr. Miner was Vice President, New Business Group, from 2001 to April 2003; and Vice President and General Manager, Communications Products Group, from 1999 to 2001.

Arvind Sodhani (age 49) has been Vice President and Treasurer since 1990.

Corporate Governance

Corporate governance is typically defined as the system that allocates duties and authority among a company's stockholders, board of directors and management. The stockholders elect the board and vote on extraordinary matters; the board is the company's governing body, responsible for hiring, overseeing and evaluating management, particularly the Chief Executive Officer (CEO); and management runs the company's day-to-day operations. The Board believes that there should be a substantial majority of independent directors on the Board. The Board also believes that it is useful and appropriate to have members of management, including the Chief Executive Officer, as directors.

The Board's general policy, based on experience, is that the positions of Chairman of the Board and Chief Executive Officer should be held by separate persons as an aid in the Board's oversight of management. In addition, the Board has an independent director designated as the Lead Independent Director, who is responsible for coordinating the activities of the other independent directors and performs various other duties. The general authority and responsibilities of the Lead Independent Director are established in a written charter adopted by the Board.

The current Board members include ten independent directors and three members of Intel's senior management. The Board members include Craig R. Barrett, Intel's Chief Executive Officer; Ambassador Charlene Barshefsky, Senior International Partner at the Wilmer, Cutler & Pickering law firm; E. John P. Browne, Group Chief Executive of BP plc; Winston H. Chen, Chairman of Paramitas Foundation; Andrew S. Grove, Intel's Chairman of the Board; D. James Guzy, Chairman of Arbor Company; Reed E. Hundt, Advisor to McKinsey and Company and Venture Partner of Benchmark Capital; Paul S. Otellini, Intel's President and Chief Operating Officer; David S. Pottruck, President and Chief Executive Officer of The Charles Schwab Corporation; Jane E. Shaw, Chairman and Chief Executive Officer of Aerogen, Inc.; John L. Thornton, Professor and Director of Global Leadership at Tsinghua University, Beijing, China; David B. Yoffie, Professor of International Business Administration, Harvard Business School; and Charles E. Young, President Emeritus of the University of Florida and Chancellor Emeritus of the University of California at Los Angeles. Messrs. Chen and Young are not standing for reelection at the next Annual Stockholders' Meeting. The Board also has two Directors Emeriti, Gordon E. Moore and Leslie L. Vadasz, who may participate in Board meetings but do not vote.

"Independent" Directors. Each of the company's directors other than Messrs. Grove, Barrett and Otellini qualify as "independent" in accordance with the published listing requirements of The NASDAQ Stock Market (NASDAQ)*. The NASDAQ independence definition includes a series of objective tests, such as that the director is not an employee of the company and has not engaged in various types of business dealings with the company. In addition, as further required by the NASDAQ rules, the Board of Directors has made a subjective determination as to each independent director that no relationships exist which, in the opinion of the Board, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In making these determinations, the directors reviewed and discussed information provided by the directors and the company with regard to each director's business and personal activities as they may relate to Intel and Intel's management.

In addition, the members of the Audit Committee of the Board also each qualify as "independent" under special standards established by the Securities and Exchange Commission (SEC) for members of audit committees, and the Audit Committee includes at least one member who is determined by the Board to meet the qualifications of an "audit committee financial expert" in accordance with SEC rules, including that the person meets the relevant definition of an "independent" director. E. John P. Browne is the independent director who has been determined to be an audit committee financial expert. Stockholders should understand that this designation is a disclosure requirement of the SEC related to Mr. Browne's experience and understanding with respect to certain accounting and auditing matters. The designation does not impose on Mr. Browne any duties, obligations or liability that are greater than are generally imposed on him as a member of the Audit Committee and Board of Directors, and his designation as an audit committee financial expert pursuant to this SEC requirement does not affect the duties, obligations or liability of any other member of the Audit Committee or Board of Directors.

Board Responsibilities and Structure. The primary responsibilities of the Board of Directors are oversight, counseling and direction to Intel's management in the long-term interests of Intel and its stockholders. The Board's detailed responsibilities include: (a) selecting, regularly evaluating the performance of, and approving the compensation of the Chief Executive Officer and other senior executives; (b) planning for succession with respect to the position of Chief Executive Officer and monitoring management's succession planning for other senior executives; (c) reviewing and, where appropriate, approving Intel's major financial objectives, strategic and operating plans and actions; (d) overseeing the conduct of Intel's business to evaluate whether the business is being properly managed; and (e) overseeing the processes for maintaining Intel's integrity with regard to its financial statements and other public disclosures and compliance with law and ethics. The Chief Executive Officer, working with Intel's other executive officers, has the authority and responsibility for managing Intel's business in a manner consistent with Intel's standards and practices, and in

accordance with any specific plans, instructions or directions of the Board. The Chief Executive Officer and management are responsible for seeking the advice and, in appropriate situations, the approval of the Board with respect to extraordinary actions to be undertaken by Intel.

The Board and its committees meet throughout the year on a set schedule, and also hold special meetings and act by written consent from time to time as appropriate. Board agendas include regularly scheduled sessions for the independent directors to meet without management present, and the Board's Lead Independent Director leads those sessions. The Board has delegated various responsibilities and authority to different Board committees as generally described below. Committees regularly report on their activities and actions to the full Board. Board members have access to all Intel employees outside of Board meetings, and the Board has a program that encourages each director to visit different Intel sites and events worldwide on a regular basis and meet with local management at those sites and events.

Board Committees and Charters. The Board currently has, and appoints the members of, standing Audit, Compensation, Corporate Governance, Executive, Finance and Nominating Committees. Each member of the Audit, Compensation, Corporate Governance and Nominating Committees is an independent director in accordance with NASDAQ standards described above. Each of the Board committees has a written charter approved by the Board. Copies of each charter, including the charter describing the position of Lead Independent Director, are posted on the company's web site at *www.intc.com* under the "Corporate Governance and Social Responsibility" section.

The Audit Committee assists the Board in its general oversight of Intel's financial reporting, internal controls and audit functions, and is directly responsible for the appointment, retention, compensation and oversight of the work of Intel's independent auditors.

The Compensation Committee reviews and approves salaries, equity incentives and other matters relating to executive compensation, and administers Intel's stock option plans, including reviewing and granting stock options to executive officers. The Compensation Committee also reviews and approves various other company compensation policies and matters.

The Corporate Governance Committee reviews and reports to the Board on a periodic basis with regard to matters of corporate governance. The Corporate Governance Committee also reviews and assesses the effectiveness of the Board's Guidelines on Significant Corporate Governance Issues and recommends to the Board proposed revisions to the Guidelines. In addition, the Corporate Governance Committee makes recommendations to the Board regarding the agenda for Intel's annual stockholders' meetings, reviews stockholder proposals and makes recommendations to the Board for action on such proposals.

The Executive Committee may exercise the authority of the Board between Board meetings, except to the extent that the Board has delegated authority to another committee or to other persons, and except as limited by Delaware law.

The Finance Committee reviews and recommends matters related to Intel's capital structure, including the issuance of debt and equity securities; Intel's dividend policy and dividend declarations; banking arrangements, including investment of corporate cash; and management of the corporate debt structure. In addition, the Finance Committee reviews and approves structured finance and other cash management transactions whose authorization is not otherwise approved by the Board or delegated to Intel's management.

The Nominating Committee makes recommendations to the Board regarding the size and composition of the Board. The Nominating Committee is responsible for reviewing with the Board from time to time the appropriate skills and characteristics required of Board members in the context of the current make-up of the Board. This assessment includes issues of diversity in numerous factors such as age; understanding of and experience in manufacturing, technology, finance and marketing; and international experience and culture. These factors, and others as considered useful by the Committee, are reviewed in the context of an assessment of the perceived needs of the Board at a particular point in time. As a result, the priorities and emphasis of the Committee and of the Board may change from time to time to take into account changes in business and other trends, and the portfolio of skills and experience of current and prospective Board members. The Nominating Committee establishes procedures for the nomination process, recommends candidates for election to the Board and also nominates officers for election by the Board. Consideration of new Board nominee candidates typically involves a series of internal discussions, review of information concerning candidates and interviews with selected candidates. Candidates for nomination to the Board typically are suggested by Board members or by employees. With regard to the company's newest directors, Ambassador Barshefsky was initially suggested as a candidate by an executive officer of the company, and Mr. Thornton was initially suggested as a candidate by a non-management director. In 2003, the company did not employ a search firm or pay fees to other third parties in connection with seeking or evaluating Board nominee candidates. The Nominating Committee will consider candidates proposed by stockholders, and has from time to time received unsolicited candidate proposals from stockholders. Candidates proposed by stockholders are evaluated by the Committee using the same criteria as for other candidates.

Board members also sit on the Investment Policy Committee for Intel's U.S. employee retirement plans. This committee includes Intel management representatives, and is responsible for adopting and amending investment policies as well as selecting and monitoring service providers for the plans. The committee also selects the investment alternatives offered under Intel's 401(k) Savings Plan.

Attenaance at Board, Committee and Annual Stockholders' Meetings. All directors are expected to attend each meeting of the Board and the committees on which he or she serves, and are also expected to attend the Annual Stockholders' Meeting.

The Board does not have a formal policy that seeks to limit the number of board seats held by an independent director, but the Board's guideline of 100% attendance at meetings reflects the Board's expectation that each director will meet his or her commitments to the position. The time commitments of directors vary substantially with regard to their individual involvement with their primary positions; their involvement with other commercial, charitable and other organizations; and otherwise. The Board believes that a limitation on board seats held by a director will not adequately express the key functional point about the director's time commitment to Intel.

Intel has a policy, and an approval process, that generally limits each employee to serving on no more than one company board as a personal, non-Intel activity. The approval process considers both the time commitment involved and the potential for business conflicts between Intel and the other company. This policy is applicable to Intel's three management directors and its other officers.

Corporate Governance Guidelines. The Board has adopted a set of Guidelines on Significant Corporate Governance Issues, and the Board's Corporate Governance Committee is responsible for overseeing the Guidelines and reporting and making recommendations to the Board concerning corporate governance matters. The Guidelines are posted on the company's web site at *www.intc.com* under the "Corporate Governance and Social Responsibility" section. Among other matters, the Guidelines include the following items concerning the Board of Directors:

- The Board believes that there should be a substantial majority of independent directors on the Board. The Board's general policy, based on experience, is that the positions of Chairman of the Board and Chief Executive Officer should be held by separate persons as an aid in the Board's oversight of management. The Board has an independent director designated as Lead Independent Director, who is responsible for coordinating the activities of the other independent directors and performs various other duties.

- Independent directors meet on a regular basis apart from other Board members and management representatives, and the Lead Independent Director is responsible for setting the agenda and running the meetings.

- All directors stand for reelection every year.

- The Board has adopted a retirement policy for officers and directors. Under the policy, independent directors may not stand for reelection after age 72, and management directors, other than former Chief Executive Officers, may not stand for reelection after age 65. Following Dr. Barrett's tenure, the Chief Executive Officer may continue as CEO no later than the annual meeting at which the person is age 60; however, a former CEO may continue to be employed by the company in another capacity beyond that time, including until age 72 as a director and as Chairman of the Board. Other Corporate Officers may continue as such no later than age 65.

- Board compensation should be a mix of cash and equity-based compensation. Management directors will not be paid for Board membership in addition to their regular employee compensation. Independent directors may not receive consulting, advisory or other compensatory fees from the company in addition to their Board compensation. To the extent practicable, independent directors who are affiliated with the company's service providers will undertake to ensure that their compensation from such providers does not include amounts connected to payments by the company.

- Members of the Board must act at all times in accordance with the requirements of Intel's Corporate Business Principles, which are applicable to each director in connection with his or her activities relating to Intel. This obligation includes adherence to Intel's policies with respect to conflicts of interest, confidentiality, protection of Intel's assets, ethical conduct in business dealings, and respect for and compliance with applicable law. Any waiver of the requirements of the Corporate Business Principles with respect to any individual director or executive officer is reported to, and subject to the approval of, the Board of Directors.

- The Audit, Compensation, Corporate Governance and Nominating Committees consist entirely of independent directors.

- The annual cycle of agenda items for Board meetings is expected to change on a periodic basis to reflect Board requests and changing business and legal issues. The Board will have regularly scheduled presentations from Finance, Sales and Marketing, and the major business segments and operations of the company. The Board's annual agenda will include, among other items, the long-term strategic plan for the company, capital projects, budget matters and management succession.

- The Board has access to contact and meet with any Intel employee. The Board has a program for members, when traveling, to make arrangements in advance to visit Intel sites and meet with local management and other employees on a worldwide basis.

- The Chief Executive Officer reports at least annually to the Board on succession planning and management development.

- At least annually, the Board evaluates the performance of the Chief Executive Officer and other senior management personnel.

- The Board has a process whereby the Board and its members are subject to periodic self-evaluation and self-assessment.

- The Board works with management to schedule new-director orientation programs and director continuing education programs. The orientation programs are designed to familiarize new directors with the company's businesses, strategies and challenges, and to assist new directors in developing and maintaining skills necessary or appropriate for the performance of their responsibilities. Continuing education programs for Board members may include a mix of in-house and third-party presentations and programs.

Directors and officers are encouraged to be stockholders of the company through their participation in the company's stock option and employee stock participation plans. Stock ownership guidelines have been established by the Board of Directors for independent directors and corporate officers to better ensure that they each maintain an equity stake in the company, and by doing so appropriately link their interests with those of the other stockholders. These guidelines provide that, within a five-year period following appointment or election, the covered individuals should attain and hold an investment position (not including unexercised stock options) of no less than a specified number of shares of Intel stock (for officers, approximating three to five times the sum of their base salary and annual incentive target, depending on the individual's scope of responsibilities, and a similar guideline for independent directors). Directors and officers may not invest in (purchase or otherwise receive, or write) derivatives of Intel securities, e.g., puts and calls on Intel securities (with limited exceptions) or enter into any "short sales" or "short positions" with respect to Intel securities. A short position is one in which the person will profit if the market price of Intel securities either remains the same or decreases. Intel considers it inappropriate and contrary to the interests of Intel and its stockholders for directors and officers to take investment positions when the person would obtain a personal benefit in such a case.

ITEM 2. PROPERTIES

At December 27, 2003, we owned the major facilities described below:

No. of Bldgs.	Location	Total Sq. Ft.	Use
121	United States	27,092,000	Executive and administrative offices, wafer fabrication, research and development, sales and marketing, computer and service functions, boards and systems manufacturing, and warehousing.
9	Ireland	3,443,000	Wafer fabrication, warehousing and administrative offices.
12	Malaysia[A]	2,223,000	Components assembly and testing, boards and systems manufacturing, research and development, warehousing and administrative offices.
16	Israel[B]	1,978,000	Wafer fabrication, research and development, warehousing and administrative offices.
5	Philippines[C]	1,518,000	Components assembly and testing, warehousing and administrative offices.
4	Costa Rica	863,000	Components assembly and testing, warehousing and administrative offices.
4	People's Republic of China[D]	685,000	Components assembly and testing, research and development, and administrative offices.
1	India	271,000	Sales and marketing, research and development, and administrative offices.
1	United Kingdom	175,000	Sales and marketing and administrative offices.
3	Japan	158,000	Sales and marketing and administrative offices.
1	Germany	80,000	Sales and marketing and administrative offices.

(A) *Leases on portions of the land used for these facilities expire in 2033 through 2057.*

(B) *Leases on portions of the land used for these facilities expire in 2039.*

(C) *Leases on portions of the land used for these facilities expire in 2046.*

(D) *Leases on portions of the land used for these facilities expire in 2046 through 2053.*

As of December 27, 2003, we also leased 63 major facilities in the U.S. totaling approximately 2,735,000 square feet and 51 facilities in other countries totaling approximately 1,920,000 square feet. These leases expire at varying dates through 2021 and include renewals at our option. Leased facilities in the U.S. decreased during 2003, primarily due to the expiration or termination of leases on facilities no longer needed. We are seeking to sublease approximately 700,000 square feet of building space. We believe that our existing facilities are suitable and adequate for our present purposes, and that, except as we have discussed above, the productive capacity in such facilities is substantially being utilized or we have plans to utilize it. We also have approximately 240,000 square feet of building space at one international site under construction for research and development purposes. For information regarding environmental proceedings related to certain facilities, refer to the heading "Legal Proceedings" in Part I, Item 3 of this Form 10-K.

We do not identify or allocate assets or depreciation by operating segment. Information on net property, plant and equipment by country is included under the heading "Note 22: Operating Segment and Geographic Information" in Part II, Item 8 of this Form 10-K.

ITEM 3. LEGAL PROCEEDINGS

A. Tax Matters

In August 2003, in connection with the Internal Revenue Service (IRS) regular examination of Intel's tax returns for the years 1999 and 2000, the IRS proposed certain adjustments to the amounts reflected by Intel on these returns as a tax benefit for its export sales. If the IRS issues formal assessments consistent with the notices and ultimately prevails in its position, Intel's federal income tax liability for these years would increase by approximately $600 million, plus interest. The IRS may make similar claims for years subsequent to 2000 in future audits.

Intel disputes the proposed adjustments and intends to pursue this matter through applicable IRS and judicial procedures, as appropriate. Although the final resolution of the proposed adjustments is uncertain, based on currently available information, management believes that the ultimate outcome will not have a material adverse effect on the company's financial position, cash flows or overall trends in results of operations. In the event of an unfavorable resolution, there exists the possibility of a material adverse impact on the results of operations of the period in which the matter is ultimately resolved, or an unfavorable outcome becomes probable and reasonably estimable.

B. Litigation

Intel currently is a party to various legal proceedings, including those noted below. While management presently believes that the ultimate outcome of these proceedings, individually and in the aggregate, will not have a material adverse effect on our financial position or overall trends in results of operations, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. An unfavorable ruling could include money damages or, in cases for which injunctive relief is sought, an injunction prohibiting Intel from selling one or more products. Were an unfavorable ruling to occur, there exists the possibility of a material adverse impact on the net income of the period in which the ruling occurs or future periods.

Intergraph Corporation v. Intel
U.S. District Court, Northern District of Alabama, Northeastern Division
U.S. District Court, Eastern District of Texas

In 1997, Intergraph Corporation filed suit in Federal District Court in Alabama, generally alleging, among other claims, that Intel infringed certain Intergraph patents. In August 2001, Intergraph filed a second suit in the U.S. District Court for the Eastern District of Texas, alleging that the Intel® Itanium® processor infringes two Intergraph microprocessor-related patents, and seeking an injunction and unspecified damages. In April 2002, Intel and Intergraph announced that they entered into a settlement agreement, pursuant to which they agreed to settle the Alabama lawsuit and dismiss it with prejudice.

Under the settlement agreement, the Texas case would proceed to trial. If the patents in the Texas case were found to be infringed, not invalid and enforceable, Intel would pay Intergraph $150 million within 30 days of the entry of a final judgment. If Intergraph prevailed on either patent on appeal, the settlement agreement provides that Intel would pay Intergraph an additional $100 million and would receive a license for the patents at issue in the case.

In October 2002, the Texas District Court ruled that Intel infringed both patents at issue in that case. Pursuant to the settlement agreement, Intel paid Intergraph $150 million. Intel then appealed the trial court's decision. In February 2004, the Court of Appeals for the Federal Circuit found that the District Court erred in construing a claim term, revised the claim construction, vacated the District Court ruling and remanded the case to the District Court to determine in the first instance whether the Intel Itanium processor infringes the patents. Intel is currently evaluating the impact that the Court of Appeals' opinion has on the 2002 settlement agreement.

Intergraph Corporation v. Dell Inc., et al.
U.S. District Court, Eastern District of Texas

In December 2002, Intergraph filed suit in the Eastern District of Texas against Dell Inc., Gateway Inc. and Hewlett-Packard Company, alleging infringement of three of Intergraph's patents. These three patents are a subset of the patents that were the subject of a now settled lawsuit that Intergraph had filed against Intel in Alabama. In May 2003, Dell filed its answer and counterclaim and named Intel as well as Intergraph in a counterclaim for declaratory judgment. None of the other defendants have named Intel as a counter-defendant. The claim against Intel does not seek any monetary or other specific relief. Rather, Dell seeks a judicial interpretation of the April 2002 settlement and license agreement between Intel and Intergraph insofar as that agreement relates to any

express and implied licenses and patent exhaustion defenses Dell has raised to defend the Intergraph claims. Dell has also issued a request for indemnity from Intel for any damages awarded against Dell, although this issue has not been made an element of the pending litigation. Intel intends to participate vigorously in the defense of all relevant claims.

In re Intel Corporation Securities Litigation (Consolidated), U.S. Dist. Ct., Northern Calif.
Dr. Jayant S. Patel, et al. v. Gordon Moore, et al., Calif. Superior Ct., Santa Clara County
Howard Lasker, et al. v. Gordon Moore, et al., Del. Chancery Ct., New Castle County

In 2001, various plaintiffs filed five class-action lawsuits against Intel alleging violations of the Securities Exchange Act of 1934. These complaints were consolidated in an amended complaint filed in the U.S. District Court for the Northern District of California. The lawsuit alleged that purchasers of Intel stock between July 19, 2000 and September 29, 2000 were misled by false and misleading statements by Intel and certain of its officers and directors concerning the company's business and financial condition. In July 2003, the court granted Intel's motion to dismiss the plaintiffs' second amended complaint in its entirety with prejudice, and the plaintiffs did not appeal the court's dismissal of the suit.

In addition, various plaintiffs filed stockholder derivative complaints in California Superior Court and Delaware Chancery Court against the company's directors and certain officers, alleging that they mismanaged the company and otherwise breached their fiduciary obligations to the company. The plaintiffs in the California action filed the original and two successive amended complaints, and the California Superior Court sustained Intel's demurrers on each of these complaints. Following the court's dismissal without prejudice of these complaints, the plaintiffs notified the court and Intel in June 2003 that they would not file a fourth complaint, and they signed a stipulation withdrawing their lawsuit with prejudice, which the court approved. In December 2003, the plaintiffs in the Delaware action withdrew their complaint and the case was dismissed with prejudice.

Deanna Neubauer et al. v. Intel Corporation, Gateway Inc., Hewlett-Packard Co. and HPDirect, Inc.,
Third Judicial Circuit Court, Madison County, Illinois

In June 2002, various plaintiffs filed a lawsuit in the Third Judicial Circuit Court, Madison County, Illinois, against Intel, Hewlett-Packard Company, HPDirect, Inc. and Gateway Inc., alleging that the defendants' advertisements and statements misled the public by suppressing and concealing the alleged material fact that systems that use the Intel® Pentium 4® processor are less powerful and slower than systems using the Intel® Pentium® III processor and a competitor's processors. The plaintiffs claim that their lawsuit should be treated as a nationwide class action. The plaintiffs seek unspecified damages, and attorneys' fees and costs. The company disputes the plaintiffs' claims and intends to defend the lawsuit vigorously.

C. Environmental Proceedings

Intel has been named to the California and U.S. Superfund lists for three of our sites and has completed, along with two other companies, a Remedial Investigation/Feasibility study with the U.S. Environmental Protection Agency (EPA) to evaluate the groundwater in areas adjacent to one of our former sites. The EPA has issued a Record of Decision with respect to a groundwater cleanup plan at that site, including expected costs of completion. Under the California and U.S. Superfund statutes, liability for cleanup of this site and the adjacent area is joint and several. The company, however, has reached agreement with those same two companies that significantly limits the company's liabilities under the proposed cleanup plan. Also, the company has completed extensive studies at our other sites and is engaged in cleanup at several of these sites. In the opinion of management, the potential losses to the company in excess of amounts already accrued arising out of these matters would not have a material adverse effect on the company's financial position or overall trends in results of operations, even if joint and several liability were to be assessed.

The estimate of the potential impact on the financial position or overall results of operations for the above legal and environmental proceedings could change in the future.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

None.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

The information regarding market, market price range and dividend information may be found in "Financial Information by Quarter (Unaudited)" in Item 8 on page 85 of this Form 10-K. Additional information concerning dividends may be found in the following sections of this Form 10-K: "Selected Financial Data" in Item 6 and "Consolidated Statements of Cash Flows" and "Consolidated Statements of Stockholders' Equity" in Item 8.

In each quarter during 2002 and 2003, we declared and paid a cash dividend of $0.02 per common share, for a total of $0.08 in each year. We have paid a cash dividend in each of the past 45 consecutive quarters. In January 2004, our Board of Directors approved an increase in the quarterly cash dividend from $0.02 per share to $0.04 per share, effective for the first quarter 2004 dividend.

As of January 30, 2004, there were approximately 235,000 registered holders of record of Intel's common stock.

ITEM 6. SELECTED FINANCIAL DATA

Ten Years Ended December 27, 2003

(In Millions)	Net Revenue	Gross Margin	Research & Development	Purchased In-Process Research & Development	Impairment of Goodwill	Amortization of Goodwill	Amortization and Impairment of Acquisition-Related Intangibles and Costs
2003	$30,141	$17,094	$4,360	$ 5	$617	—	$301
2002	$26,764	$13,318	$4,034	$ 20	—	—	$548
2001	$26,539	$13,052	$3,796	$198	$ 98	$1,612	$628
2000	$33,726	$21,076	$3,897	$109	—	$1,310	$276
1999	$29,389	$17,553	$3,111	$392	—	$ 307	$104
1998	$26,273	$14,185	$2,509	$165	—	$ 17	$ 39
1997	$25,070	$15,125	$2,347	—	—	—	—
1996	$20,847	$11,683	$1,808	—	—	—	—
1995	$16,202	$ 8,391	$1,296	—	—	—	—
1994	$11,521	$ 5,945	$1,111	—	—	—	—

(In Millions—Except Per Share Amounts)	Operating Income	Net Income	Basic Earnings Per Share[1]	Diluted Earnings Per Share[2]	Weighted Average Diluted Shares Outstanding	Dividends Declared Per Share	Dividends Paid Per Share
2003	$ 7,533	$ 5,641	$0.86	$0.85	6,621	$.080	$.080
2002	$ 4,382	$ 3,117	$0.47	$0.46	6,759	$.080	$.080
2001	$ 2,256	$ 1,291	$0.19	$0.19	6,879	$.080	$.080
2000	$10,395	$10,535	$1.57	$1.51	6,986	$.070	$.070
1999	$ 9,767	$ 7,314	$1.10	$1.05	6,940	$.055	$.055
1998	$ 8,379	$ 6,068	$0.91	$0.86	7,035	$.025	$.033
1997	$ 9,887	$ 6,945	$1.06	$0.97	7,179	$.029	$.028
1996	$ 7,553	$ 5,157	$0.78	$0.73	7,101	$.024	$.023
1995	$ 5,252	$ 3,566	$0.54	$0.50	7,072	$.019	$.018
1994	$ 3,387	$ 2,288	$0.34	$0.33	6,992	$.014	$.014

(In Millions—Except Employees)	Net Investment in Property, Plant & Equipment	Total Assets	Long-Term Debt & Put Warrants	Stockholders' Equity	Additions to Property, Plant & Equipment	Employees at Year-End (In Thousands)
2003	$16,661	$47,143	$ 936	$37,846	$3,656	79.7
2002	$17,847	$44,224	$ 929	$35,468	$4,703	78.7
2001	$18,121	$44,395	$1,050	$35,830	$7,309	83.4
2000	$15,013	$47,945	$ 707	$37,322	$6,674	86.1
1999	$11,715	$43,849	$1,085	$32,535	$3,403	70.2
1998	$11,609	$31,471	$ 903	$23,377	$4,032	64.5
1997	$10,666	$28,880	$2,489	$19,295	$4,501	63.7
1996	$ 8,487	$23,735	$1,003	$16,872	$3,024	48.5
1995	$ 7,471	$17,504	$1,125	$12,140	$3,550	41.6
1994	$ 5,367	$13,816	$1,136	$ 9,267	$2,441	32.6

[1] *Amortization of goodwill reduced basic earnings per share in 2001 by $0.23 ($0.19 in 2000 and $0.05 in 1999). Goodwill is no longer amortized, beginning in 2002.*

[2] *Amortization of goodwill reduced diluted earnings per share in 2001 by $0.22 ($0.18 in 2000 and $0.05 in 1999).*

In addition, the ratio of earnings to fixed charges for each of the five years in the period ended December 27, 2003 was as follows:

Fiscal Year				
2003	2002	2001	2000	1999
72x	32x	18x	171x	166x

Fixed charges consist of interest expense and the estimated interest component of rent expense.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

We begin Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) with Intel's overall strategy and the strategy for our major business units to give the reader an overview of the goals of our business and the direction in which our business and products are moving. This is followed by a discussion of the Critical Accounting Estimates that we believe are important to understanding the assumptions and judgments incorporated in our reported financial results. In the next section, beginning on page 35, we discuss our Results of Operations for 2003 compared to 2002, and for 2002 compared to 2001, beginning with an Overview. We then provide an analysis of changes in our balance sheet and cash flows, and discuss our financial commitments in the sections entitled "Financial Condition," "Contractual Obligations" and "Off-Balance-Sheet Arrangements." On page 46, we conclude this MD&A with our "Business Outlook" section, discussing our outlook for 2004.

This MD&A should be read in conjunction with the other sections of this Annual Report on Form 10-K, including "Item 1: Business"; "Item 6: Selected Financial Data"; and "Item 8: Financial Statements and Supplementary Data." The various sections of this MD&A contain a number of forward-looking statements, all of which are based on our current expectations and could be affected by the uncertainties and risk factors described throughout this filing and particularly in the "Business Outlook" section. Our actual results may differ materially, and these forward-looking statements do not reflect the potential impact of any divestitures, mergers, acquisitions or other business combinations that had not been completed as of February 18, 2004.

Strategy

Our goal is to be the preeminent building block supplier to the worldwide Internet economy. As part of our overall strategy to compete in each relevant market segment, we use our core competencies and financial resources, as well as our global presence and brand recognition. Our global marketing strategy is designed to associate our brands with advanced technology and innovation. In addition, under our Intel Capital program, we make equity investments in companies around the world to further our strategic objectives and support our key business initiatives.

Our primary focus is on developing advanced integrated silicon technology solutions, which we believe will provide the performance and technology features necessary to help accelerate the convergence of computing and communications capabilities. Convergence refers to having computing and communications capabilities in an integrated product solution. We also provide key components for networking and communications infrastructures used to connect technology users. We believe users of computing and communications devices want not only higher performance but also other capabilities such as multithreaded or multitasking capability, seamless networking connectivity, improved security, reliability, ease of use and interoperability among devices. It is our goal to incorporate features addressing these capabilities in our various products to meet user demands.

Each of our operating segments uses its core competencies in the design and manufacture of integrated circuits, as well as key silicon and platform capabilities, to provide building blocks for technology solutions. The Intel Architecture business provides the advanced technologies to support the desktop, mobile and enterprise computing platforms. During 2003, our Intel Communications Group (ICG) focused on wired and wireless network connectivity products, and provided key components for networking and communications infrastructure devices and other industrial and commercial purposes. Finally, during 2003, our Wireless Communications and Computing Group (WCCG) focused on component-level products and platform solutions for the wireless handheld communications and computing market segments.

As we move to each succeeding generation of manufacturing process technology, we use less space per transistor, which enables us to fit more transistors on an equivalent size chip, decrease the size of the chip or offer an increased number of integrated features. This decrease in size can also result in faster microprocessors and semiconductor products that consume less power and/or products that cost less to manufacture.

In December 2003, we announced that we would be consolidating our communications-related businesses into a single organization, the Intel Communications Group. We believe that as computing and communications converge, the consolidation of ICG and WCCG will give us the opportunity to better coordinate product planning and customer focus between our communications infrastructure and wireless client efforts going forward. This reorganization was not effective until fiscal 2004. Because the reporting period for this Form 10-K is as of December 27, 2003, the communications-related businesses discussed below and the results of operations for our operating segments in this MD&A are presented under the organizational structure that existed as of December 27, 2003.

Intel Architecture Business

The Intel Architecture business supports the desktop, mobile and enterprise computing platforms. As devices take advantage of converged computing and communications capabilities, our goal is to continue to deliver processors with higher performance and/or advanced technology features such as HT Technology, which can enable multithreading and multitasking, and the features offered with our Intel® Centrino™ mobile technology, which can enhance the mobile computing experience. In addition, we believe that system security and reliability features at the hardware level will facilitate an enhanced computing experience for end users.

For the desktop platform, our strategy is to introduce microprocessors and chipsets with higher performance and/or advanced technology features tailored to the needs of different market segments using a tiered branding approach. For the mobile platform, our strategy is to deliver products optimized for some or all of the four mobility vectors: performance, battery life, form factor (the physical size and shape of a device) and wireless connectivity. Our strategy for the enterprise platform is to provide processors and chipsets with high performance and/or advanced technology features, as well as competitive price for performance for entry-level to high-end servers and workstations.

For the desktop performance market segment, we offer the Intel® Pentium® 4 processor to meet the computing needs of users both at home and at work. These processors are optimized to deliver high performance as well as added features across a broad range of business and consumer applications. For the performance desktop, we offer the Pentium® 4 processor with HT Technology. When used in a computer system with the other features required to take advantage of this technology, HT Technology allows a multithreaded software program to run as though it uses two processors, even though it uses only one processor. Our current versions of the Pentium 4 processor with HT Technology support the 800-MHz system bus, which allows for faster data transfer into and out of the processor. For the desktop value market segment, we offer the Intel® Celeron® processor, designed to meet the core computing needs and affordability requirements of value-conscious PC users.

For the mobile market segment, we offer processors optimized for performance mobility and portability users, with form factors from sub-notebook and tablet PCs to thin-and-light and full-size notebook PCs. In 2003, for performance mobility users, we introduced Intel Centrino mobile technology, our first computing technology designed and optimized specifically for the four key vectors of mobility. Intel Centrino mobile technology consists of an Intel® Pentium® M processor and the Intel® 855 chipset family, both offered by the Mobile Platforms Group within the Intel Architecture business, as well as a wireless network connection, which is based on the 802.11 industry standard, from ICG. For portability PC users—who want systems with near-desktop features, including high performance, larger screens, full-size keyboards and multiple hard drives—we offer the Mobile Intel® Pentium® 4 processor. In addition, for the mobile value market segment, we offer the mobile Intel Celeron processor.

The Intel Architecture business also supports the enterprise platform by offering products that address various levels of data processing and compute-intensive applications. Our Intel® Xeon™ processor family of products supports a range of entry-level to high-end technical and commercial computing applications for the workstation and server market segments, while our Intel® Itanium® processor family of products supports an even higher level of computing performance for data processing, the handling of high transaction volumes and other compute-intensive applications for enterprise-class servers, as well as supercomputing solutions. The Intel® Xeon™ processor with HT Technology is aimed at two-way servers, also known as dual-processing (DP) servers, and workstations. For servers based on four or more processors, we offer the Intel® Xeon™ processor MP with HT Technology. For the enterprise-class market segment, we offer the Intel® Itanium® 2 processor. We believe that technology industry product developments and the convergence of computing and communications will increase demand for our higher performance enterprise platform products. In particular, we anticipate increased demand for our products to support new developments in data traffic management, storage, and wireless computing and communications needs.

Intel Communications Group

Within ICG, our strategy is to be the leading supplier of silicon and integrated networking and communications building blocks for original equipment manufacturers (OEMs) and other systems builders. We are developing products that we believe will help to build out the Internet: products designed for wired and wireless connectivity; the communications infrastructure, including network and embedded processors; and networked storage. Our strategy for Ethernet connectivity is to expand our product portfolio in the local area network (LAN) market segment and to address the metropolitan area network (MAN) and networked storage market segments. Within the LAN and MAN market segments, we are investing in Gigabit Ethernet, 10-Gigabit Ethernet and wireless technologies based on

industry standards for wireless 802.11 (WLAN, or "WiFi") mobile applications and the emerging standard supporting 802.16 (or WiMAX) for broadband connectivity. In network processing, we deliver products that are basic building blocks for modular communications platforms. These products include advanced, programmable processors used to manage and direct data moving across the Internet and corporate networks. We also offer embedded processors that can be used for modular communications platform applications as well as for industrial equipment and point-of-sale systems. The modular communications platform is supported by solutions such as the Advanced Telecommunications Computing Architecture (ATCA) for building standards-based wireless base station equipment and high-speed interconnect technologies such as PCI Express and Advanced Switching. In the networked storage market segment, we are developing products that allow storage resources to be added at any location on either of the two most prevalent types of storage networks: Ethernet or Fibre Channel. The transition to our internal manufacturing processes is a key factor in our execution of these strategies. Although third-party foundry manufacturers currently perform a significant portion of ICG's manufacturing, we will be transitioning more of the manufacturing of our communications products onto 130-nanometer and 90-nanometer process technologies, which will enable us to build more of our communications products internally.

Wireless Communications and Computing Group

Within WCCG, our current products include flash memory, application and cellular processors based on Intel XScale® microarchitecture, and cellular baseband chipsets. Our strategy for our flash memory products is to offer a broad range of memory densities, leading-edge packaging technology and high-performance functionality. In addition to having offerings meeting the needs of our cellular customers, we plan to further expand our customer base beyond the core cellular market segment to applications such as personal digital assistants (PDAs), set-top boxes, MP3 music players and networking equipment. In our flash memory product portfolio, we currently offer NOR flash memory products such as Intel StrataFlash® Wireless Memory, which uses two-bit-per-cell technology to provide a single-chip solution for fast code execution with higher storage densities and 1.8-volt operation optimized for advanced mobile phone designs. In application and cellular processing, Intel XScale technology provides the processing capability in data-enabled mobile phones and PDAs. Addressing the trend toward convergence in computing and communications, we offer the PXA800 cellular processor family, which combines baseband communications features with memory and applications processing onto a single microchip. We also offer stacked packaging solutions (stacking an applications processor on top of memory) as well as packaging that stacks several memory chips together, allowing our customers to decrease the size of their products as well as helping to reduce their time-to-market. Finally, the Intel® Personal Internet Client Architecture (Intel® PCA) outlines an architecture for communications, application and memory subsystems for data-enabled mobile phones and portable handheld devices. We believe that the Intel PCA scalable platform can speed application development and allow faster time-to-market for our customers.

Critical Accounting Estimates

The methods, estimates and judgments we use in applying our accounting policies have a significant impact on the results we report in our financial statements, which we discuss under the heading "Results of Operations" following this section of our MD&A. Some of our accounting policies require us to make difficult and subjective judgments, often as a result of the need to make estimates of matters that are inherently uncertain. Our most critical accounting estimates include the assessment of recoverability of goodwill, which impacts goodwill impairments; valuation of non-marketable equity securities, which impacts net gains (losses) on equity securities when we record impairments; valuation of inventory, which impacts gross margin; assessment of recoverability of long-lived assets, which primarily impacts gross margin when we impair manufacturing assets or accelerate their depreciation; and recognition and measurement of current and deferred income tax assets and liabilities, which impacts our tax provision. Below, we discuss these policies further, as well as the estimates and judgments involved. We also have other policies that we consider key accounting policies, such as our policies for revenue recognition, including the deferral of revenue on sales to distributors; however, these policies do not meet the definition of critical accounting estimates, because they do not generally require us to make estimates or judgments that are difficult or subjective.

Goodwill. Goodwill is initially recorded when the purchase price paid for an acquisition exceeds the estimated fair value of the net identified tangible and intangible assets acquired. We perform an annual review in the fourth quarter of each year, or more frequently if indicators of potential impairment exist, to determine if the recorded goodwill is impaired. Our impairment review process compares the fair value of the reporting unit to its carrying value, including the goodwill related to the reporting unit. To determine the fair value, our review process uses the income method and is based on a discounted future cash flow approach that uses estimates including the following for the reporting units: revenue, based on assumed market segment growth rates and Intel's assumed market segment share; estimated costs; and appropriate discount rates based on the particular business's weighted average cost of capital. Our estimates of market segment growth, our market segment share and costs are based on historical data, various internal estimates and a variety of external sources, and are developed as part our routine long-range planning process. In addition to being used in our goodwill impairment analysis, the same estimates are used in the planning for our long-term manufacturing capacity needs as part of our capital budgeting process and for both long-term and short-term business planning and forecasting. We test the reasonableness of the inputs and outcomes of our discounted cash flow analysis by comparison to available and comparable market data. In determining the carrying value of the reporting unit, we must include an allocation of our manufacturing assets because of the interchangeable nature of our manufacturing capacity. This allocation is based on each reporting unit's relative percentage of utilization of our manufacturing assets. During the fourth quarter of 2003, the company completed its most recent review, resulting in a $611 million non-cash goodwill impairment charge related to the WCCG reporting unit (see "Note 16: Goodwill" in the Notes to the Consolidated Financial Statements and the WCCG discussion in the "Results of Operations" section of this MD&A). A substantial majority of our remaining recorded goodwill is related to the ICG reporting unit. The estimates we used in our most recent review for ICG assume that we will gain market segment share in the future and that the communications business will experience a gradual recovery and return to growth from the current trends. We may incur charges for the impairment of goodwill in the future if the communications sector does not recover as we expect, if we fail to deliver new products for ICG, if the products fail to gain expected market acceptance, if we fail to achieve our assumed revenue growth rates or assumed gross margin, or if interest rates increase significantly.

Non-Marketable Equity Securities. At December 27, 2003, the carrying value of our portfolio of strategic investments in non-marketable equity securities, excluding equity derivatives, totaled $665 million ($730 million at December 28, 2002). Under our Intel Capital program, we make equity investments in companies around the world to further our strategic objectives and support our key business initiatives. The Intel Capital program focuses on investing in companies and initiatives to stimulate growth in the Internet economy and its infrastructure, create new business opportunities for Intel and expand global markets for our products. The investments may support, among other things, Intel product initiatives, emerging trends in the technology industry or worldwide Internet deployment. This strategic investment program helps advance our overall mission to be the preeminent supplier of building blocks to the worldwide Internet economy.

We invest in companies that develop software, hardware and other technologies or provide services supporting technologies. Our current investment focus areas include: enabling mobile and Internet client devices, helping to create the digital home, advancing high-performance communications infrastructure and developing the next generation of silicon production technologies. Our focus areas tend to develop and change over time due to rapid advancements in technology.

We typically invest in non-marketable equity securities of private companies and contribute a portion of the funds required for them to grow. Our investment portfolio ranges from early-stage companies that are often still defining their strategic direction to more mature companies whose products or technologies may directly support an Intel product or initiative. We invest for strategic reasons, with each investment also evaluated for potential financial returns. The program seeks to invest in companies and businesses that can succeed and have an impact on their market segment. However, these types of investments involve a great deal of risk, and there can be no assurance that any specific company, whether at an early or mature stage, or somewhere in between, will grow or will become successful, and consequently, we could lose all or part of our investment. When the strategic objectives of an investment have been achieved, or if the investment or business diverges from our strategic objectives, we may decide to dispose of the investment. However, our investments in non-marketable equity securities are not liquid, and there can be no assurance that we will be able to dispose of these investments on favorable terms or at all.

As of December 27, 2003, we had invested $124 million in non-voting stock of Elpida Memory, Inc., a Japanese provider of Dynamic Random Access Memory (DRAM). This investment is intended to help align Elpida's product roadmap, as appropriate, with our roadmap and is part of our investment strategy to support the development and supply of DRAM products. No other investment in our non-marketable portfolio was individually significant.

Our ability to recover our strategic investments in non-marketable equity securities and to earn a return on these investments is primarily dependent on how successfully these companies are able to execute to their business plans and how well their products are accepted, as well as their ability to obtain venture capital funding to continue operations, to grow and to take advantage of liquidity events. In the current equity market environment, their ability to obtain additional funding as well as to take advantage of liquidity events, such as initial public offerings (IPOs), mergers and private sales, remains constrained.

We review all of our investments quarterly for impairment; however, for non-marketable equity securities, the impairment analysis requires significant judgment to identify events or circumstances that would likely have a significant adverse effect on the fair value of the investment. The indicators that we use to identify those events or circumstances include (a) the investee's revenue and earnings trends relative to predefined milestones and overall business prospects, (b) the technological feasibility of the investee's products and technologies, (c) the general market conditions in the investee's industry, and (d) the investee's liquidity, debt ratios and the rate at which the investee is using its cash.

Investments identified as having an indicator of impairment are subject to further analysis to determine if the investment is other than temporarily impaired, in which case we write the investment down to its impaired value. When an investee is not considered viable from a financial or technological point of view, we write down the entire investment since we consider the estimated fair market value to be nominal. If an investee obtains additional funding at a valuation lower than our carrying amount or requires a new round of equity funding to stay in operation and the new funding does not appear imminent, we presume that the investment is other than temporarily impaired, unless specific facts and circumstances indicate otherwise.

We have experienced substantial impairments in our portfolio of non-marketable equity securities as equity markets declined significantly over the past few years. If the level of IPO market activity does not increase and the availability of venture capital funding for technology investments does not improve, our non-marketable investments may be adversely affected. As companies within our portfolio attempt to raise additional funds, the funds may not be available to them or they may receive lower valuations, with less favorable investment terms than in previous financings, and the investments would likely become impaired. However, we are not able to determine at the present time which specific investments are likely to be impaired in the future, or the extent or timing of individual impairments. Impairments of investments in our portfolio, primarily impairments of non-marketable equity securities, were $319 million in 2003 ($524 million in 2002 and $1.1 billion in 2001).

Inventory. The valuation of inventory requires us to estimate obsolete or excess inventory as well as inventory that is not of saleable quality. The determination of obsolete or excess inventory requires us to estimate the future demand for our products within specific time horizons, generally six months or less. The estimates of future demand that we use in the valuation of inventory are the basis for our published revenue forecast, which is also consistent with our short-term manufacturing plan. If our demand forecast for specific products is greater than actual demand and we fail to reduce manufacturing output accordingly, we could be required to record additional inventory reserves, which would have a negative impact on our gross margin.

Long-Lived Assets. We assess the impairment of long-lived assets when events or changes in circumstances indicate that the carrying value of the assets or the asset grouping may not be recoverable. Factors that we consider in deciding when to perform an impairment review include significant under-performance of a business or product line in relation to expectations, significant negative industry or economic trends, and significant changes or planned changes in our use of the assets. Recoverability of assets that will continue to be used in our operations is measured by comparing the carrying amount of the asset grouping to the related total future net cash flows. If an asset grouping's carrying value is not recoverable through the related cash flows, the asset grouping is considered to be impaired. The impairment is measured by the difference between the asset grouping's carrying amount and its fair value, based on the best information available, including market prices or discounted cash flow analysis.

Impairments of long-lived assets are determined for groups of assets related to the lowest level of identifiable independent cash flows. Due to our asset usage model and the interchangeable nature of our semiconductor manufacturing capacity, we must make subjective judgments in determining the independent cash flows that can be related to specific asset groupings. In addition, as we make manufacturing process conversions and other factory planning decisions, we must make subjective judgments regarding the remaining useful lives of assets, primarily process-specific semiconductor manufacturing tools and building improvements. When we determine that the useful lives of assets are shorter than we had originally estimated, and there are sufficient cash flows to support the carrying value of the assets, we accelerate the rate of depreciation charges in order to fully depreciate the assets over their new shorter useful lives.

Income Taxes. We must make certain estimates and judgments in determining income tax expense for financial statement purposes. These estimates and judgments occur in the calculation of certain tax assets and liabilities, which arise from differences in the timing of recognition of revenue and expense for tax and financial statement purposes.

We must assess the likelihood that we will be able to recover our deferred tax assets. If recovery is not likely, we must increase our provision for taxes by recording a valuation allowance against the deferred tax assets that we estimate will not ultimately be recoverable. As of December 27, 2003, we believed that all of the deferred tax assets recorded on our balance sheet would ultimately be recovered However, should there be a change in our ability to recover our deferred tax assets, our tax provision would increase in the period in which we determine that the recovery is not probable.

In addition, the calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize liabilities for anticipated tax audit issues in the U.S. and other tax jurisdictions based on our estimate of whether, and the extent to which, additional taxes will be due. If we ultimately determine that payment of these amounts is unnecessary, we reverse the liability and recognize a tax benefit during the period in which we determine that the liability is no longer necessary. We record an additional charge in our provision for taxes in the period in which we determine that the recorded tax liability is less than we expect the ultimate assessment to be. For a discussion of current tax matters, see "Note 21: Contingencies" in the Notes to Consolidated Financial Statements.

Results of Operations

Overview

In 2003, we saw a substantial improvement in our Intel Architecture business compared to 2002, and as we look ahead to the rest of 2004, we are planning for growth in annual revenue and further progress in overall gross profit margin. Our growth continues to be largely dependent on the success of our microprocessor business. Revenue from sales of microprocessors within our Intel Architecture business represented approximately 73% of our consolidated net revenue in 2003. Rapid technological advances characterize the semiconductor industry. Therefore, we must continue to deliver leading-edge products that appeal to users of technology by integrating higher performance and/or added features into our products. In addition, growth in sales of microprocessors is dependent on continued sales growth in emerging markets in both Asia and Europe, which have been growing faster on a percentage basis than our other regions. In 2003, 72% of our sales came from geographies outside of the Americas. Finally, growth in sales of microprocessors depends on continued business and consumer investment in technologies that use our microprocessors in mature markets.

We plan to continue to streamline operations and refocus on core strategic areas within our communications-related businesses. In line with this effort, in December 2003, we announced that we would be consolidating communications-related businesses within ICG and WCCG into a single organization, the Intel Communications Group, effective for 2004. We believe that as wireless LAN and cellular technologies come together, the combination of these organizations gives us the opportunity to better coordinate product planning and customer focus. The losses in our flash memory business have been disappointing. However, we intend to use leading technology products and manufacturing processes to turn this business around. In addition, our networking business has experienced the negative effect of an overall decline in the telecommunications industry in the last few years; however, we have been cutting costs and trimming the losses in this business, and believe that this market segment will eventually improve.

Sustaining or growing our profitability depends on our ability to obtain continuing benefits from the productive use of our manufacturing assets, in particular our new equipment used for 90-nanometer process technology and 300mm wafers, as we build more of our mainstream products with these technologies. We consider our manufacturing capability to be a competitive advantage, and our success is dependent on our continued ability to lower our unit costs through manufacturing efficiencies. Because we have high fixed costs, our profitability could be negatively affected if we do not achieve sufficient sales-volume growth. Despite the economic downturn of the last few years, we continued to, and currently plan to continue to, invest in capital equipment and increase research and development spending with the goal of delivering leading-edge products on advanced manufacturing processes.

The following table sets forth certain consolidated statements of income data as a percentage of net revenue for the periods indicated:

	2003	2002	2001
Net revenue	**100.0%**	**100.0%**	**100.0%**
Cost of sales	43.3%	50.2%	50.8%
Gross margin	**56.7%**	**49.8%**	**49.2%**
Research and development	14.5%	15.1%	14.3%
Marketing, general and administrative	14.2%	16.2%	16.8%
Impairment of goodwill	2.0%	—	.5%
Amortization of goodwill	—	—	6.0%
Amortization and impairment of acquisition-related intangibles and costs	1.0%	2.0%	2.4%
Purchased in-process research and development	—	.1%	.7%
Operating income	**25.0%**	**16.4%**	**8.5%**

The following table sets forth information on our geographic regions for the periods indicated:

(Dollars in Millions)	2003 Revenue	2003 % of Total	2002 Revenue	2002 % of Total	2001 Revenue	2001 % of Total
Americas	$ 8,403	28%	$ 8,648	32%	$ 9,382	35%
Asia-Pacific	12,161	40%	10,073	38%	8,308	31%
Europe	6,868	23%	6,139	23%	6,500	25%
Japan	2,709	9%	1,904	7%	2,349	9%
Total	**$30,141**	**100%**	**$26,764**	**100%**	**$26,539**	**100%**

Our net revenue for 2003 was $30.1 billion, an increase of 13% compared to 2002. This increase in net revenue was primarily from our Intel Architecture business, which had increased sales of microprocessors and chipsets, accompanied by slightly higher net revenue for ICG. Net revenue was lower for WCCG.

Our Asia-Pacific region's revenue made up the largest portion of our total revenue and increased 21% in 2003 compared to 2002, reflecting growth in local consumption and Asia's continued growth as a global manufacturing and design center. Revenue in Europe improved, increasing 12% in 2003 compared to 2002. Japan experienced substantial improvement with increased revenue of 42%, primarily driven by retail sales as well as higher notebook exports by Japanese manufacturers. Revenue from the Americas region continued to decrease as a percent of our total revenue and declined 3% in 2003 compared to 2002. In 2003, we continued to experience growth in emerging markets in Asia and Europe, and began to see some evidence of higher technology infrastructure spending in mature markets in Europe and the U.S.

Our overall gross margin percentage increased to 56.7% for 2003 from 49.8% in 2002. Improved gross margin within the Intel Architecture business as well as a shift in the total company revenue mix to the higher margin Intel Architecture business contributed to our improved total gross margin. Improvement in the Intel Architecture gross margin was partially offset by a decline in the gross margin percentage for WCCG. The gross margin percentage for ICG was flat in 2003 compared to 2002. See the "Business Outlook" section below for a discussion of gross margin expectations.

Our net revenue for 2002 was $26.8 billion, approximately flat compared to $26.5 billion in 2001. Increased revenue in the Intel Architecture business due to strength in sales of microprocessors and chipsets was offset by significantly lower revenue for ICG. Net revenue for WCCG was flat from 2001 to 2002.

In 2002, revenue from our Asia-Pacific region increased 21% from 2001 and surpassed revenue from the Americas for the first time. The growth in Asia was offset by declines in our other geographies. Japan declined 19% due to weakened economic conditions. The Americas region decreased 8%, and Europe decreased 6%.

Our overall gross margin percentage in 2002 was approximately flat at 49.8% compared to 49.2% in 2001. The Intel Architecture business gross margin percentage was also relatively flat in 2002 compared to 2001. WCCG experienced a slightly lower gross margin percentage while ICG experienced a slightly higher gross margin percentage. Our gross margin percentage in 2002 was also negatively impacted by the $106 million charge related to the decision to wind down our web hosting business.

Intel Architecture Business

The revenue and operating income for the Intel Architecture operating segment for the three years ended December 27, 2003 were as follows:

(In Millions)	2003	2002	2001
Microprocessor revenue	$21,867	$18,658	$17,878
Chipset, motherboard and other revenue	4,235	3,658	3,568
Total revenue	$26,102	$22,316	$21,446
Operating income	$10,411	$ 6,592	$ 6,277

Net revenue for the Intel Architecture operating segment increased by $3.8 billion, or 17%, in 2003 compared to 2002. Revenue from sales of microprocessors increased 17% while revenue from sales of chipsets and motherboards increased 16%. The increase in Intel Architecture revenue was primarily due to significantly higher unit sales and to a lesser extent due to a slightly higher average selling price for microprocessors, as well as significantly higher unit sales of chipsets in 2003. During the year, we rapidly ramped the new Intel Centrino mobile technology and the Pentium M processor for mobile computers. We also saw increased sales of Pentium 4 processors with HT Technology and higher sales of Intel Xeon processors in the server market segment.

Operating income increased by $3.8 billion, or 58%, in 2003 compared to 2002. The increase was primarily due to the impact of higher revenue, lower unit costs for microprocessors and chipsets, and charges for under-utilized factory capacity that were lower than in 2002 by approximately $150 million. These improvements were partially offset by approximately $390 million of higher start-up costs in 2003 related to the ramp of 90-nanometer technology on 300-millimeter wafer manufacturing.

For 2002, net revenue for the Intel Architecture operating segment increased by $870 million, or 4%, compared to 2001. Revenue from sales of microprocessors increased 4%, and revenue from sales of chipsets and motherboards increased 3%. The increase in microprocessor revenue was primarily due to higher unit volumes, partially offset by lower average selling prices. The increase in revenue from chipsets and motherboards was primarily due to significantly higher unit volumes of motherboards.

Operating income for the Intel Architecture business increased by $315 million, or 5%, in 2002 compared to 2001. The increase was primarily due to the impact of higher revenue and approximately $720 million of lower start-up costs related to the 0.13-micron technology manufacturing ramp. These positive impacts were partially offset by higher unit costs for microprocessors. Operating income for 2002 was reduced by a $155 million charge related to the Intergraph Corporation litigation settlement agreement (see "Note 21: Contingencies" in the Notes to Consolidated Financial Statements).

Intel Communications Group

The revenue and operating loss for the ICG operating segment for the three years ended December 27, 2003 were as follows:

(In Millions)	2003	2002	2001
Revenue	$2,147	$2,080	$2,580
Operating loss	$ (426)	$ (622)	$ (735)

Net revenue increased by $67 million, or 3%, in 2003 compared to 2002. Revenue increased for wireless connectivity products, including the wireless component of our Intel Centrino mobile technology, and for embedded processing components. These increases were partially offset by lower revenue from sales of telecommunications-related board products and lower revenue from wired Ethernet connectivity products due to the continuing shift in product mix to LAN on motherboard products.

The operating loss decreased to $426 million in 2003 from a $622 million loss in 2002, primarily due to a decrease in operating expenses of $194 million in 2003 as we continued our efforts to streamline operations and refocus on our core strategic areas. In addition, operating results improved due to higher revenue from sales of embedded processing components and lower unit costs of microcontrollers. These improvements were partially offset by the mix shift to lower margin wired Ethernet connectivity products. Finally, in the current competitive environment, sales of wireless connectivity products in support of expanded adoption of Intel Centrino mobile technology increased the operating loss in 2003.

For 2002, net revenue decreased by $500 million, or 19%, compared to 2001, primarily due to lower overall unit volumes for telecommunications-related products, consistent with the decline in industry-wide demand for these products. In addition, net revenue for wired Ethernet connectivity products decreased, even as units increased, due to the shift in product mix from adapter cards to LAN on motherboard products.

Despite the decline in net revenue for ICG, 2002 net operating results improved, with a loss of $622 million compared to a loss of $735 million in 2001. The impact of lower revenue was more than offset by the impact of operating expenses, which were lower by approximately $137 million, as well as by reduced inventory write-downs in 2002 compared to 2001 and a mix shift to higher margin products, including embedded processing components.

Wireless Communications and Computing Group

The revenue and operating loss for the WCCG operating segment for the three years ended December 27, 2003 were as follows:

(In Millions)	2003	2002	2001
Revenue	$1,857	$2,239	$2,232
Operating loss	$ (432)	$ (287)	$ (249)

Net revenue decreased by $382 million, or 17%, in 2003 compared to 2002 due to lower unit sales of flash memory products. In 2003, revenue for flash memory products was negatively affected by lost business as a result of the pricing strategy on certain products. Revenue from sales of application processors for data-enabled cellular phones and handheld computing devices increased.

The operating loss increased by $145 million to a loss of $432 million in 2003 compared to a loss of $287 million in 2002, primarily due to lower revenue for flash memory products and the impact of higher inventory write-offs.

Net revenue was flat from 2001 to 2002. Revenue for flash memory products was slightly lower due to a decrease in average selling prices stemming from competitive pricing pressures, mostly offset by an increase in unit volumes. Revenue on higher volumes of application processors and baseband chipsets offset the lower revenue from flash memory products.

The net operating loss increased by $38 million to a loss of $287 million in 2002 compared to a loss of $249 million in 2001. Lower average selling prices in 2002 for flash memory products were partially offset by the impact of charges for under-utilized factory capacity that were reduced by approximately $170 million. Higher revenue and lower costs for application processors and baseband chipsets offset a portion of the negative impact for flash memory products.

Operating Expenses

Operating expenses for the three years ended December 27, 2003 were as follows:

(In Millions)	2003	2002	2001
Research and development	$4,360	$4,034	$3,796
Marketing, general and administrative	$4,278	$4,334	$4,464
Impairment of goodwill	$ 617	$ —	$ 98
Amortization of goodwill	$ —	$ —	$1,612
Amortization and impairment of acquisition-related intangibles and costs	$ 301	$ 548	$ 628
Purchased in-process research and development	$ 5	$ 20	$ 198

Research and development spending increased $326 million, or 8%, in 2003 compared to 2002, and increased $238 million, or 6%, in 2002 compared to 2001. The increase in 2003 compared to 2002 was primarily due to higher expenses for product development programs in the Intel Architecture business and higher spending on the development of manufacturing process technologies, including the 65-nanometer process technology, as well as higher profit-dependent compensation expenses. The increase in 2002 compared to 2001 was primarily due to higher spending on the development of manufacturing process technologies, including the 90-nanometer process technology.

Marketing, general and administrative expenses were flat in 2003 compared to 2002. We lowered our discretionary spending and other expenses as we reduced headcount and refocused on core strategic areas. This decrease in expenses was offset by higher marketing expenses due to the launch of the Intel Centrino mobile technology brand in 2003; increased profit-dependent compensation expenses; and higher spending for the Intel Inside® cooperative advertising program, primarily due to higher microprocessor revenue. Marketing, general and administrative expenses decreased $130 million, or 3%, in 2002 compared to 2001, primarily due to the impact of lower spending within ICG and for certain new business initiatives as we reduced headcount or exited certain businesses, as well as lower overall discretionary spending related to cost containment programs. The spending decreases were partially offset by higher expenses for the Intel Inside cooperative advertising program due to higher microprocessor revenue and the impact of our customers using a slightly higher percentage of their available program funds.

During the fourth quarter of 2003, the company completed its annual impairment review for goodwill and found indicators of impairment for the WCCG reporting unit. The WCCG business, comprised primarily of flash memory products and cellular baseband chipsets, has not performed as management had expected. In the fourth quarter of 2003, it became apparent that WCCG was now expected to grow more slowly than previously projected. A slower-than-expected rollout of products and slower-than-expected customer acceptance of our products in the baseband chipset business, as well as a delay in the transition to next-generation phone networks, have pushed out the forecasts for sales of products for high-end data cell phones. These factors resulted in lower growth expectations for the reporting unit and triggered a $611 million charge for impairment of goodwill. Also during 2003, the company recorded a $6 million charge for impairment of the goodwill related to one of the company's seed businesses. Seed businesses support the company's strategic initiatives. In 2001, goodwill of $1.6 billion was amortized, and there was a $98 million charge for goodwill impairment related to prior-year acquisitions. Beginning in 2002, goodwill is no longer amortized.

Amortization and impairment of acquisition-related intangibles and costs was $301 million in 2003, decreasing from $548 million in 2002 and $628 million in 2001, as intangible assets related to prior acquisitions became fully amortized. The 2002 amount included $127 million of impairments ($26 million in 2001). No impairments were recorded in 2003. Amortization and impairment of both goodwill and acquisition-related costs for all periods are included in the calculation of the operating loss for the "all other" category for segment reporting purposes.

Gains (Losses) on Equity Securities, Interest and Other, and Taxes

Losses on equity securities, net, interest and other, net and taxes for the three years ended December 27, 2003 were as follows:

(In Millions)	2003	2002	2001
Losses on equity securities, net	$ (283)	$ (372)	$ (466)
Interest and other, net	$ 192	$ 194	$ 393
Provision for taxes	$1,801	$1,087	$ 892

Losses on equity securities and certain equity derivatives for 2003 were $283 million compared to $372 million for 2002. The net loss for 2003 included impairment charges of approximately $319 million, primarily related to non-marketable equity securities, compared to impairment charges of approximately $524 million in 2002. The decrease in the impairment charges in 2003 reflected the decrease in the total carrying amount of the non-marketable equity investment portfolio. The impairment charges in 2002 were partially offset by net gains of approximately $57 million related to equity security trading assets and $110 million of net gains on related equity derivatives. The $57 million net gains included a gain of approximately $120 million, resulting from the designation of formerly restricted equity investments as trading assets as they became marketable. The cumulative difference between their cost and fair market value at the time they became marketable was recorded as a gain in 2002. For 2001, the net loss of $466 million included impairments of $1.1 billion, partially offset by net gains on transactions of $517 million and net mark-to-market gains on equity security trading assets and derivatives of $90 million.

Our effective income tax rate was 24.2% in 2003, 25.9% in 2002 and 40.9% in 2001. The decrease in the effective tax rate in 2003 was primarily attributed to tax benefits of $758 million related to divestitures that closed during the year. Although the pre-tax losses on the divestitures for financial statement purposes were not significant, the company was able to recognize tax losses because the tax basis in the stock of the companies sold exceeded the book basis. The impact of these benefits was partially offset by the non-deductible goodwill impairment and a higher percentage of profits in higher tax jurisdictions. The decrease in the effective rate in 2002 compared to 2001 was primarily attributed to a decrease in non-deductible acquisition-related costs, including amortization of goodwill, and tax benefits of $75 million related to divestitures during 2002, partially offset by a greater portion of our profits being generated in higher tax jurisdictions. See "Business Outlook" for a discussion of our income tax rate expectations.

Financial Condition

Our financial condition remains strong. At December 27, 2003, cash, short-term investments and fixed income instruments included in trading assets totaled $15.9 billion, up from $12.2 billion at December 28, 2002. At December 27, 2003, total short-term and long-term debt was $1.2 billion and represented 3% of stockholders' equity. At December 28, 2002, total debt was $1.4 billion and represented 4% of stockholders' equity.

For 2003, cash provided by operating activities was $11.5 billion, compared to $9.1 billion in 2002 and $8.8 billion in 2001. Cash was provided by net income adjusted for non-cash-related items. Working capital uses of cash included increases in accounts receivable and inventories, and a decrease in income taxes payable. Accounts receivable increased over December 2002 levels, primarily due to higher revenue. The days' sales outstanding also increased to 36 days from 34 days at December 2002. For 2003, our three largest customers accounted for approximately 42% of net revenue, with one of these customers accounting for approximately 19% of revenue and another customer accounting for approximately 15%. For 2002, our three largest customers accounted for approximately 38% of net revenue (35% of net revenue for 2001). Additionally, these three largest customers accounted for approximately 43% of net accounts receivable at December 27, 2003 (approximately 39% at December 28, 2002 and December 29, 2001). Overall inventory levels were higher by 11% at the end of 2003 compared to 2002 as we ramped new products for sale in 2004. The decrease in the accrual for income taxes payable was primarily due to the impact of tax benefits related to divestitures in the fourth quarter of 2003. Working capital sources of cash included an increase in accrued compensation and benefits, largely due to higher accruals for employee bonuses related to our higher level of profitability in 2003.

We used $7.1 billion in net cash for investing activities during 2003, compared to $5.8 billion during 2002 and $330 million during 2001. The increase in cash generated from operations compared to 2002 resulted in net purchases of available-for-sale investments in 2003. Improved corporate credit profiles facilitated a slight shift in our portfolio of investments in debt securities to longer term maturities. Additionally, during 2003 we used $450 million in cash to acquire stock rights exchangeable into approximately 33.9 million shares of Micron Technology, Inc. Capital expenditures decreased to $3.7 billion in 2003 as we continued to invest in capital equipment and construction, primarily for additional microprocessor manufacturing capacity, but at a lower rate than in the prior two years. Capital expenditures were $4.7 billion in 2002 and $7.3 billion in 2001. The increase in cash used for investing activities in 2002 compared to 2001 reflected the relatively large net sales and maturities of available-for-sale investments that occurred in 2001.

We used $3.9 billion in net cash for financing activities in 2003, relatively flat compared to the prior year, which had been up slightly compared to 2001. The major financing use of cash in all three years was for the repurchase of shares. In 2003, we purchased 176 million shares of common stock for $4 billion ($4 billion in 2002 and 2001). At December 27, 2003, approximately 414 million shares remained available for repurchase under the existing repurchase authorization. Another major financing use of cash in all three years was for the payment of dividends. Payment of dividends was $524 million in 2003 ($533 million in 2002 and $538 million in 2001). In January 2004, our Board of Directors approved an increase in the quarterly cash dividend from $0.02 per share to $0.04 per share, effective for the first-quarter 2004 dividend. Financing sources of cash during 2003 were primarily $967 million in proceeds from the sale of shares pursuant to employee stock benefit plans ($681 million in 2002 and $762 million in 2001).

Another potential source of liquidity is authorized borrowings, including commercial paper, of $3 billion. Maximum borrowings under our commercial paper program during 2003 were approximately $30 million, although no commercial paper was outstanding at the end of the period. We also maintain the ability to issue an aggregate of approximately $1.4 billion in debt, equity and other securities under U.S. Securities and Exchange Commission shelf registration statements.

We believe that we have the financial resources needed to meet business requirements for the next 12 months, including capital expenditures for the expansion or upgrading of worldwide manufacturing and assembly and test capacity, working capital requirements, the dividend program, potential stock repurchases and potential future acquisitions or strategic investments.

Contractual Obligations

The following table summarizes our significant contractual obligations at December 27, 2003, and the effect such obligations are expected to have on our liquidity and cash flows in future periods. This table excludes amounts already recorded on our balance sheet as current liabilities at December 27, 2003.

	Payments Due by Period				
(In Millions)	Total	Less than 1 year	1–3 years	3–5 years	More than 5 years
Operating lease obligations	$ 503	$ 101	$ 135	$ 64	$ 203
Capital purchase obligations[1]	1,474	1,368	106	—	—
Other purchase obligations and commitments[2]	317	173	144	—	—
Long-term debt obligations	1,017	81	102	198	636
Total[3]	**$ 3,311**	**$ 1,723**	**$ 487**	**$ 262**	**$ 839**

[1] *Capital purchase obligations represent commitments for construction or purchase of property, plant and equipment. They are not recorded as liabilities on our balance sheet as of December 27, 2003, as we have not yet received the related goods or taken title to the property.*

[2] *Other purchase obligations and commitments include payments due under various types of licenses and non-contingent joint funding obligations. Joint funding obligations are agreements to fund various projects with other companies, such as co-marketing and co-development initiatives.*

[3] *Total does not include contractual obligations recorded on the balance sheet as current liabilities, or certain purchase obligations as discussed below.*

Purchase orders or contracts for the purchase of raw materials and other goods and services are not included in the table above. We are not able to determine the aggregate amount of such purchase orders that represent contractual obligations, as purchase orders may represent authorizations to purchase rather than binding agreements. For the purposes of this table, contractual obligations for purchase of goods or services are defined as agreements that are enforceable and legally binding on Intel and that specify all significant terms, including: fixed or minimum quantities to be purchased; fixed, minimum or variable price provisions; and the approximate timing of the transaction. Our purchase orders are based on our current manufacturing needs and are fulfilled by our vendors within short time horizons. We do not have significant agreements for the purchase of raw materials or other goods specifying minimum quantities or set prices that exceed our expected requirements for three months. We also enter into contracts for outsourced services; however, the obligations under these contracts were not significant and the contracts generally contain clauses allowing for cancellation without significant penalty.

Contractual obligations that are contingent upon the achievement of certain milestones are not included in the table above. These include contingent joint funding obligations, milestone-based equity investment funding, and acquisition-related deferred cash compensation contingent on future employment. These arrangements are not considered contractual obligations until the milestone is met by the third party. As of December 27, 2003, assuming all future milestones were met, additional required payments would be approximately $60 million.

The expected timing of payment of the obligations discussed above is estimated based on current information. Timing of payments and actual amounts paid may be different depending on the time of receipt of goods or services or changes to agreed-upon amounts for some obligations. Amounts disclosed as contingent or milestone-based obligations are dependent on the achievement of the milestones or the occurrence of the contingent events and can vary significantly.

Off-Balance-Sheet Arrangements

As of December 27, 2003, we did not have any significant off-balance-sheet arrangements, as defined in Item 303(a)(4)(ii) of SEC Regulation S-K.

Employee Stock Options

Our stock option program is a broad-based, long-term retention program that is intended to attract and retain talented employees and align stockholder and employee interests. The program currently consists of two plans: one under which officers, key employees and non-employee directors may be granted options to purchase shares of our stock (1984 Plan), and a broad-based plan under which options may be granted to all employees other than officers and directors (1997 Plan). Substantially all of our employees participate in one of the plans. Options granted by the company expire no later than 10 years from the grant date. During 2003, options granted to existing and newly hired employees generally vest in increments over four or five years from the date of grant, and certain grants to key employees have delayed vesting generally beginning six years from the date of grant. Our 1984 Stock Option Plan, as amended, expires in May 2004, and our 1997 Stock Option Plan, as amended, expires in January 2007. We presently expect to propose a new equity plan for stockholder vote at our May 2004 Annual Stockholders' Meeting. Contingent on stockholder approval, this new equity plan would replace both the expiring 1984 Plan and the 1997 Plan, which would be terminated early.

We have a goal to keep the potential incremental dilution related to our option program to a long-term average of less than 2% annually. The dilution percentage is calculated using the new option grants for the year, net of options forfeited by employees leaving the company and options expired, divided by the total outstanding shares at the beginning of the year.

Options granted to employees, including officers, and non-employee directors from 1999 through 2003 are summarized as follows:

(Shares in Millions)	2003	2002	2001	2000	1999
Total options granted[1]	110	174	238	163	81
Less options forfeited[1]	(40)	(44)	(47)	(31)	(25)
Net options granted	70	130	191	132	56
Net grants as % of outstanding shares[2]	1.1%	1.9%	2.8%	2.0%	0.9%
Grants to listed officers[3] as % of total options granted	2.4%	1.7%	0.8%	0.4%	0.9%
Grants to listed officers as % of outstanding shares	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Cumulative options held by listed officers as % of total options outstanding	2.1%	2.1%	2.0%	2.4%	2.9%

[1] *Excluding options assumed in connection with acquisitions.*

[2] *Outstanding shares as of the beginning of each period.*

[3] *"Listed officers" are defined as our Chief Executive Officer and each of the four other most highly compensated executive officers serving at the end of each year presented.*

In accordance with a policy established by the Compensation Committee of the Board of Directors, total options granted to the listed officers may not exceed 5% of total options granted in any year. During 2003, options granted to listed officers amounted to 2.4% of the grants made to all employees. In 2003 and 2002, in addition to grants made in connection with annual performance reviews, we made further grants to key officers, including listed officers, and other senior-level employees in recognition of their future potential in leading the company. All stock option grants to executive officers are made after a review by, and with the approval of, the Compensation Committee. All members of the Compensation Committee are independent directors, as defined in the applicable rules for issuers traded on The NASDAQ Stock Market*.

For additional information regarding stock option plan activity for the past three years, see the reconciliation of options outstanding in "Note 12: Employee Stock Benefit Plans" in Notes to Consolidated Financial Statements. Information regarding our stock option plans should be read in conjunction with the information appearing under the heading "Report of the Compensation Committee on Executive Compensation" in our 2004 Proxy Statement, which is incorporated by reference.

In-the-money and out-of-the-money† option information as of December 27, 2003 was as follows:

	Exercisable		Unexercisable		Total	
(Shares in Millions)	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
In-the-money	282.0	$ 16.28	416.7	$ 22.77	698.7	$ 20.15
Out-of-the-money	45.5	$ 46.80	105.9	$ 51.93	151.4	$ 50.39
Total options outstanding	**327.5**	**$ 20.53**	**522.6**	**$ 28.68**	**850.1**	**$ 25.54**

† *Out-of-the-money options have an exercise price equal to or above $31.36, the closing price of Intel stock at the end of fiscal 2003, as reported on The NASDAQ Stock Market*.*

Options granted to listed officers as a group during 2003 were as follows:

Number of Securities Underlying Option Grants	Percent of Total Options Granted to Employees	Exercise Price Per Share	Expiration Date	Potential Realizable Values at Assumed Annual Rates of Stock Price Appreciation for Option Term†	
				5%	10%
2,650,000	2.4%	$16.42–$18.63	2013	$ 28,824,400	$ 73,046,800

† *Represents gains that could accrue for these options, assuming that the market price of Intel common stock appreciates over a period of 10 years at annualized rates of 5% and 10% from the date of grant. If the stock price does not increase above the exercise price, the realized value from these options would be zero.*

Option exercises during 2003 and option values for listed officers as a group as of December 27, 2003 were as follows:

Shares Acquired on Exercise	Value Realized	Number of Shares Underlying Unexercised Options at December 27, 2003		Values of Unexercised In-the-Money Options at December 27, 2003†	
		Exercisable	Unexercisable	Exercisable	Unexercisable
2,088,000	$ 31,490,300	8,003,400	10,180,800	$ 151,004,500	$ 82,736,800

† *These amounts represent the difference between the exercise price and $31.36, the closing price of Intel stock at the end of fiscal 2003, for all in-the-money options held by the listed officers.*

Information as of December 27, 2003 regarding equity compensation plans approved and not approved by stockholders is summarized in the following table (shares in millions):

Plan Category	(A) Number of Shares to be Issued Upon Exercise of Outstanding Options	(B) Weighted Average Exercise Price of Outstanding Options	(C) Number of Shares Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Shares Reflected in Column A)
Equity compensation plans approved by shareholders	166.5	$16.21	232.4[1]
Equity compensation plans not approved by shareholders	674.2	$27.98	380.4[2]
Total	**840.7[3]**	**$25.65**	**612.8**

[1] *Includes 146.5 million shares available for future issuance under our 1984 Stock Option Plan, as amended, generally used for grants to officers and directors. This plan expires in 2004. Also includes 85.9 million shares available under our 1976 Employee Stock Participation Plan.*

[2] *Shares available under our 1997 Stock Option Plan, used for grants to employees other than officers and directors. The remaining shares available for issuance under the 1997 Plan approximate the shares expected to be needed through its expiration in 2007. Any new plans, and any material amendments to existing plans, will be submitted for stockholder approval under the rules of The NASDAQ Stock Market*.*

[3] *Total excludes 9.4 million shares issuable under outstanding options, with a weighted average exercise price of $15.60, originally granted under plans we assumed in connection with acquisitions. We do not intend to grant further options under these plans.*

Business Outlook

As we look ahead to the rest of 2004, we are planning for growth in annual revenue and further progress in gross profit margin. We expect continued growth in the total number of computers using the Intel Pentium 4 processor as well as increasing acceptance of our Pentium M processor, the processor integral to Intel Centrino mobile technology. Demand for our flash memory products is uncertain in the highly competitive cellular handset market segment. Revenue growth for our flash memory products is largely dependent on customer demand for higher density flash memory and continued end user adoption of new leading-edge cellular handsets. The outlook for the telecommunications industry continues to be soft. In this environment, revenue growth for our networking and communications business is largely dependent on our securing design wins for new products, and OEMs taking these product designs to production.

Our financial results are substantially dependent on sales of microprocessors and related components by the Intel Architecture operating segment. Revenue is partly a function of the mix of microprocessor types and speeds sold, as well as the mix of related chipsets and motherboards, all of which are difficult to forecast. Because of the wide price differences among performance desktop, value desktop, mobile and server microprocessors, the mix of types of microprocessors sold affects the average price that we will realize and has a large impact on our revenue and gross margin. Microprocessor revenue is also dependent on the availability of other parts of the system platform, including chipsets, motherboards, operating system software and application software. Revenue is also affected by our sales of other semiconductor and non-semiconductor products, and is subject to the impact of economic conditions in various geographic regions.

Our gross margin expectation for 2004 is 62% plus or minus a few points. The 62% midpoint is five points higher than the 2003 gross margin of 57%. The gross margin expectation reflects the substantial year-to-year growth that we have seen in the Intel Architecture business and the impact of spreading our fixed costs over a greater number of units. Gross margin should also benefit from the productive use of 90-nanometer technology and 300mm wafers, as we build more of our mainstream products with these technologies. Our gross margin varies primarily with revenue levels, which are dependent on unit volumes and prices as well as the mix of types and speeds of processors sold, and the mix of microprocessors, related chipsets and motherboards, and other semiconductor and non-semiconductor products. Variability of other factors will also continue to affect cost of sales and the gross margin percentage, including unit costs and yield issues associated with production at our factories, timing and execution of the manufacturing ramp including the ramp of the 90-nanometer process technology on 300mm wafers, excess manufacturing capacity, the reusability of factory equipment, impairment of manufacturing or assembly and test assets, excess inventory, inventory obsolescence and variations in inventory valuation.

We have significantly expanded our semiconductor manufacturing and assembly and test capacity over the last few years, and we continue to plan capacity based on the assumed continued success of our overall strategy and the acceptance of our products in specific market segments. We currently expect that capital spending will be between $3.6 billion and $4.0 billion in 2004, compared to $3.7 billion in 2003. The midpoint of this range, $3.8 billion, is only slightly higher than in 2003. Most of the capital spending for 2004 will go to building or equipping our 300mm wafer facilities. The efficiencies of 300mm wafers translate into more capacity for less invested capital. In terms of end use, about 85% of the budget is directed to manufacturing capability, the same portion as in 2003. We expect more than half of the capital spending to go toward fabrication (fab) manufacturing equipment, and more than a quarter to land and construction. The remaining portion is expected to be spent on other machinery and equipment. In terms of technology, the emphasis in capital spending is shifting to smaller geometries. Over 60% of the 2004 budget for fab manufacturing equipment is expected to be invested in manufacturing processes of 65 nanometer and smaller. This capital spending plan is dependent on expectations regarding production efficiencies and delivery times of various machinery and equipment, and construction schedules for new facilities. If the demand for our products does not grow and continue to move toward higher performance products in the various market segments, revenue and gross margin would be adversely affected, manufacturing and/or assembly and test capacity would be under-utilized, and the rate of capital spending could be further reduced. We could be required to record an impairment of our manufacturing or assembly and test equipment and/or facilities, or factory planning decisions may cause us to record accelerated depreciation. However, in the long term, revenue and gross margin may also be adversely affected if we do not add capacity fast enough to meet increased market demand.

Depreciation for 2004 is expected to be approximately $4.6 billion, compared to $4.7 billion in 2003.

Our industry is characterized by very short product life cycles, and our continued success is dependent on technological advancement, including developing and implementing new processes and strategic products for specific market segments. Because we consider it imperative to maintain a strong research and development program, spending for research and development in 2004 is

expected to increase to approximately $4.8 billion from $4.4 billion in 2003. The expected increase is primarily driven by development of our next-generation 65-nanometer process technology, as well as designing future microprocessors and communications initiatives. We also intend to continue spending to promote our products and to increase the value of our product brands.

Based on acquisitions completed through February 18, 2004, we expect amortization of acquisition-related intangibles and costs to be approximately $170 million in 2004.

We currently expect our tax rate to be approximately 32% for 2004. The estimated effective tax rate is based on current tax law and the current expected income, and assumes that the company continues to receive the tax benefit for export sales (see "Note 21: Contingencies" in Notes to Consolidated Financial Statements). The tax rate may be affected by the closing of acquisitions or divestitures, the jurisdictions in which profits are determined to be earned and taxed, and the ability to realize deferred tax assets.

As of December 27, 2003, we have approximately $3.7 billion of goodwill remaining on our balance sheet, substantially all of which is related to the ICG operating segment. If we fail to deliver new products for ICG, if the products fail to gain expected market acceptance, or if market conditions in the communications business fail to improve, our revenue and cost forecasts may not be achieved and we may incur additional charges for impairment of goodwill.

At the end of 2003, we held non-marketable equity securities with a carrying value of $665 million. If the level of IPO market activity does not increase and the availability of venture capital funding for technology investments does not improve, our non-marketable investments may be adversely affected. As companies within our portfolio attempt to raise additional funds, the funds may not be available to them, or they may receive lower valuations, with less favorable investment terms than in previous financings, and our investments would likely become impaired. However, we are not able to determine at the present time which specific investments are likely to be impaired in the future, or the extent or timing of individual impairments.

We are currently a party to various legal proceedings and claims, including claims related to taxes. Management does not believe that the ultimate outcome of these legal proceedings and claims will have a material adverse effect on our financial position or overall trends in results of operations. However, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. An unfavorable ruling could include monetary damages, additional taxes owed or, in cases where injunctive relief is sought, an injunction prohibiting Intel from selling one or more products. If an unfavorable ruling were to occur in any specific period, there exists the possibility of a material adverse impact on the results of operations of that period or future periods. Management believes that, given our current liquidity and cash and investment balances, even an adverse judgment would not have a material impact on cash and investments or liquidity.

We operate globally, with sales offices and research and development activities as well as manufacturing and assembly and test facilities, in many countries, and, as a result, we are subject to risks and factors associated with doing business outside the U.S. Global operations involve inherent risks that include currency controls and fluctuations, tariff and import regulations, and regulatory requirements that may limit our or our customers' ability to manufacture, assemble and test, design, develop or sell products in particular countries. If terrorist activity, armed conflict, civil or military unrest, or political instability occurs in the U.S., Israel or other locations, such events may disrupt manufacturing, assembly and test, logistics, security and communications, and could also result in reduced demand for Intel's products. The impacts of major health concerns, or of large-scale outages or interruptions of service from utility or other infrastructure providers on Intel, its suppliers, customers or other third parties could also adversely affect our business and impact customer order patterns. We could also be affected if labor issues disrupt our transportation arrangements or those of our customers or suppliers. On a worldwide basis, we regularly review our key infrastructure, systems, services and suppliers, both internally and externally, to seek to identify significant vulnerabilities as well as areas of potential business impact if a disruptive event were to occur. Once we identify a significant vulnerability, we assess the risks, and as we consider it to be appropriate, we initiate actions intended to reduce the risks and their potential impact. However, there can be no assurance that we have identified all significant risks or that we can mitigate all identified risks with reasonable effort.

Our future results of operations and the other forward-looking statements contained in this filing, including this MD&A, involve a number of risks and uncertainties—in particular, the statements regarding our goals and strategies, new product introductions, plans to cultivate new businesses, market segment share and growth rate assumptions, future economic conditions and recovery in the communications businesses, revenue, pricing, gross margin and costs, capital spending, depreciation and amortization, research and development expenses, potential impairment of investments, the tax rate, and pending tax and legal proceedings. In addition to various factors that we have discussed above, a number of other factors could cause actual results to differ materially from our expectations.

Demand for our products, which impacts our revenue and gross margin percentage, is affected by business and economic conditions, as well as computing and communications industry trends and the development and timing of introduction of compelling software applications and operating systems that take advantage of the features of our products. Demand for our products is also affected by changes in customer order patterns, such as changes in the levels of inventory maintained by our customers and the timing of customer purchases. Revenue and gross margin could also be affected by competitive factors, such as competing chip architectures and manufacturing technologies, competing software-compatible microprocessors, pricing pressures and other competitive factors, as well as market acceptance of our new products in specific market segments, the availability of sufficient inventory to meet demand and the availability of externally purchased components. Our future revenue is also dependent on continuing technological advancement, including developing and implementing new processes and strategic products, as well as the timing of new product introductions, sustaining and growing new businesses, and integrating and operating any acquired businesses. Our results could also be affected by adverse effects associated with product defects and errata (deviations from published specifications) and by litigation involving intellectual property, stockholder, consumer and other issues.

We believe that we have the product offerings, facilities, personnel, and competitive and financial resources for continued business success, but future revenue, costs, gross margins and profits are all influenced by a number of factors, including those discussed above, all of which are inherently difficult to forecast.

Status of Business Outlook and Related Risk Factor Statements

We expect that our corporate representatives will from time to time meet privately with investors, investment analysts, the media and others, and may reiterate the forward-looking statements contained in the "Business Outlook" section and elsewhere in this Form 10-K, including any such statements that are incorporated by reference in this Form 10-K. At the same time, we will keep this Form 10-K and our then current Business Outlook publicly available on our Investor Relations web site (www.intc.com). The public can continue to rely on the Business Outlook published on the web site as representing our current expectations on matters covered, unless we publish a notice stating otherwise. The statements in Business Outlook and other forward-looking statements in this Form 10-K are subject to revision during the course of the year in our quarterly earnings releases and SEC filings, our mid-quarter business updates and at other times.

We intend to publish a Mid-Quarter Business Update on March 4, 2004. From the close of business on February 27, 2004 until publication of the Update, we will observe a "Quiet Period" during which the Business Outlook and other forward-looking statements first published in our earnings press release on January 14, 2004, as reiterated or updated, as applicable, in this Form 10-K, should be considered historical, speaking as of prior to the Quiet Period only and not subject to update. During the Quiet Period, our representatives will not comment on the Business Outlook or our financial results or expectations.

A Quiet Period operating in similar fashion with regard to the Business Outlook and our Form 10-K will begin at the close of business on March 12, 2004 and will extend until the day that our next quarterly Earnings Release is published, presently scheduled for April 13, 2004.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to financial market risks, including changes in currency exchange rates, interest rates and marketable equity security prices. To mitigate these risks, we may utilize derivative financial instruments, among other strategies. We do not use derivative financial instruments for speculative purposes. All of the potential changes noted below are based on sensitivity analyses performed on our financial positions at December 27, 2003. Actual results may differ materially.

Currency Exchange Rates. We generally hedge currency risks of non-U.S. dollar-denominated investments in debt securities with offsetting currency borrowings, currency forward contracts or currency interest rate swaps. Gains and losses on these non-U.S.-currency investments would generally be offset by corresponding losses and gains on the related hedging instruments, resulting in negligible net exposure.

A substantial majority of our revenue, expense and capital purchasing activities are transacted in U.S. dollars. However, we do enter into transactions in other currencies, primarily the Euro and certain other European and Asian currencies. To protect against reductions in value and the volatility of future cash flows caused by changes in currency exchange rates, we have established balance sheet and forecasted transaction hedging programs. Currency forward contracts are utilized in these hedging programs. Our hedging programs reduce, but do not always entirely eliminate, the impact of currency exchange rate movements. We considered the historical trends in currency exchange rates and determined that it was reasonably possible that adverse changes in exchange rates of 20% for all currencies could be experienced in the near term. Such adverse changes, after taking into account hedges and offsetting positions, would have resulted in an adverse impact on income before taxes of less than $10 million as of the end of each of 2003 and 2002.

Interest Rates. The primary objective of our investments in debt securities is to preserve principal while maximizing yields, without significantly increasing risk. To achieve this objective, the returns on a substantial majority of our marketable investments in long-term fixed rate debt securities are swapped to U.S. dollar LIBOR-based returns. We considered the historical volatility of the three-month LIBOR rate experienced in prior years and determined that it was reasonably possible that an adverse change of 80 basis points, approximately 68% of the rate at the end of 2003, could be experienced in the near term. A hypothetical 0.80% (80-basis-point) increase in interest rates, after taking into account hedges and offsetting positions, would have resulted in a decrease in the fair value of our investment securities of approximately $10 million or less as of the end of each of 2003 and 2002.

Marketable Equity Security Prices. We have a portfolio of equity investments that includes marketable strategic equity securities, trading assets and derivative equity instruments such as warrants and options, as well as non-marketable equity investments. We invest in companies that develop software, hardware and other technologies or provide services supporting technologies. This strategic investment program helps advance our overall mission to be the preeminent supplier of building blocks to the worldwide Internet economy. Our current investment focus areas include: enabling mobile and Internet client devices, helping to create the digital home, advancing high-performance communications infrastructure and developing the next generation of silicon production technologies. Our focus areas tend to develop and change over time due to rapid advancements in the technology field.

To the extent that our marketable portfolio of investments continues to have strategic value, we typically do not attempt to reduce or eliminate our market exposure. For those securities that we no longer consider strategic, we evaluate market and economic factors in our decision on the timing of disposal and whether it is possible and appropriate to hedge the equity market risk. As of December 27, 2003, the fair value of our portfolio of marketable equity investments and equity derivative instruments, including hedging positions, was $591 million.

To assess the market price sensitivity of our marketable portfolio, we analyzed the historical movements over the past several years of high-technology stock indices that we considered appropriate. Based on the analysis of these indices, we estimated that it was reasonably possible that the prices of the stocks in our portfolio could experience a 30% adverse change in the near term. However, our marketable portfolio is substantially concentrated in one company, which will affect the marketable portfolio's price volatility. We currently have an investment in Micron Technology, Inc. of approximately $458 million, or 77% of the total marketable value including equity derivative instruments. The investment in Micron is part of our strategy to support the development and supply of Dynamic Random Access Memory (DRAM) products. We analyzed the historical volatility of Micron's stock, and if the stock behaves with the same price volatility that it has in the past, we could experience a 60% loss. If we apply a 60% hypothetical change to the entire portfolio, the hypothetical loss would be significantly larger than the loss assuming a 30% decline.

The table below presents the fair value and hypothetical loss for our marketable portfolio given the specified percentage decreases in equity prices. The estimated decreases reflect the impact of hedges and offsetting positions, and are not necessarily indicative of future performance. Actual results may differ materially.

(In Millions)	Fair Value	Hypothetical Loss	
		30% Decrease	60% Decrease
December 27, 2003	$ 591	$ (161)	$ (318)
December 28, 2002†	$ 335	$ (30)	$ —

† *A 60% loss was not calculated as of December 28, 2002, as we did not have a similarly concentrated investment.*

Non-Marketable Equity Securities. Our strategic investments in non-marketable equity securities would also be affected by an adverse movement of equity market prices, although the impact cannot be directly quantified. Such a movement and the related underlying economic conditions would negatively affect the prospects of the companies we invest in, their ability to raise additional capital and the likelihood of our being able to realize our investments through liquidity events such as initial public offerings, mergers and private sales. These types of investments involve a great deal of risk, and there can be no assurance that any specific company will grow or will become successful; consequently, we could lose all or part of our investment. At December 27, 2003, our strategic investments in non-marketable equity securities had a carrying amount of $665 million, excluding equity derivatives that were subject to mark-to-market requirements.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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INTEL CORPORATION
CONSOLIDATED STATEMENTS OF INCOME

Three Years Ended December 27, 2003
(In Millions—Except Per Share Amounts)

	2003	2002	2001
Net revenue	**$30,141**	**$26,764**	**$26,539**
Cost of sales	13,047	13,446	13,487
Gross margin	**17,094**	**13,318**	**13,052**
Research and development	4,360	4,034	3,796
Marketing, general and administrative	4,278	4,334	4,464
Impairment of goodwill	617	—	98
Amortization of goodwill	—	—	1,612
Amortization and impairment of acquisition-related intangibles and costs	301	548	628
Purchased in-process research and development	5	20	198
Operating expenses	**9,561**	**8,936**	**10,796**
Operating income	**7,533**	**4,382**	**2,256**
Losses on equity securities, net	(283)	(372)	(466)
Interest and other, net	192	194	393
Income before taxes	**7,442**	**4,204**	**2,183**
Provision for taxes	1,801	1,087	892
Net income	**$ 5,641**	**$ 3,117**	**$ 1,291**
Basic earnings per common share	**$ 0.86**	**$ 0.47**	**$ 0.19**
Diluted earnings per common share	**$ 0.85**	**$ 0.46**	**$ 0.19**
Weighted average common shares outstanding	**6,527**	**6,651**	**6,716**
Weighted average common shares outstanding, assuming dilution	**6,621**	**6,759**	**6,879**

See accompanying notes.

INTEL CORPORATION
CONSOLIDATED BALANCE SHEETS

December 27, 2003 and December 28, 2002 (In Millions—Except Par Value)	2003	2002
Assets		
Current assets:		
Cash and cash equivalents	$ 7,971	$ 7,404
Short-term investments	5,568	3,382
Trading assets	2,625	1,801
Accounts receivable, net of allowance for doubtful accounts of $55 ($57 in 2002)	2,960	2,574
Inventories	2,519	2,276
Deferred tax assets	969	1,136
Other current assets	270	352
Total current assets	**22,882**	**18,925**
Property, plant and equipment, net	**16,661**	**17,847**
Marketable strategic equity securities	**514**	**56**
Other long-term investments	**1,866**	**1,178**
Goodwill	**3,705**	**4,330**
Other assets	**1,515**	**1,888**
Total assets	**$47,143**	**$44,224**
Liabilities and stockholders' equity		
Current liabilities:		
Short-term debt	$ 224	$ 436
Accounts payable	1,660	1,543
Accrued compensation and benefits	1,559	1,287
Accrued advertising	716	622
Deferred income on shipments to distributors	633	475
Other accrued liabilities	1,302	1,075
Income taxes payable	785	1,157
Total current liabilities	**6,879**	**6,595**
Long-term debt	**936**	**929**
Deferred tax liabilities	**1,482**	**1,232**
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.001 par value, 50 shares authorized; none issued	—	—
Common stock, $0.001 par value, 10,000 shares authorized; 6,487 issued and outstanding (6,575 in 2002) and capital in excess of par value	6,754	7,641
Acquisition-related unearned stock compensation	(20)	(63)
Accumulated other comprehensive income	96	43
Retained earnings	31,016	27,847
Total stockholders' equity	**37,846**	**35,468**
Total liabilities and stockholders' equity	**$47,143**	**$44,224**

See accompanying notes.

INTEL CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

Three Years Ended December 27, 2003 (In Millions)	2003	2002	2001
Cash and cash equivalents, beginning of year	**$ 7,404**	**$ 7,970**	**$ 2,976**
Cash flows provided by (used for) operating activities:			
Net income	5,641	3,117	1,291
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation	4,651	4,676	4,131
Impairment of goodwill	617	—	98
Amortization of goodwill	—	—	1,612
Amortization and impairment of intangibles and other acquisition-related costs	419	668	717
Purchased in-process research and development	5	20	198
Losses on equity securities, net	283	372	466
Loss on investment in Convera	—	—	196
Net loss on retirements and impairments of property, plant and equipment	217	301	119
Deferred taxes	391	110	(519)
Tax benefit from employee stock plans	216	270	435
Changes in assets and liabilities:			
Trading assets	(511)	(444)	898
Accounts receivable	(430)	30	1,561
Inventories	(245)	(26)	24
Accounts payable	116	(226)	(673)
Accrued compensation and benefits	276	107	(524)
Income taxes payable	(361)	175	(270)
Other assets and liabilities	230	(21)	(971)
Total adjustments	5,874	6,012	7,498
Net cash provided by operating activities	**11,515**	**9,129**	**8,789**
Cash flows provided by (used for) investing activities:			
Additions to property, plant and equipment	(3,656)	(4,703)	(7,309)
Acquisitions, net of cash acquired	(61)	(57)	(883)
Purchases of available-for-sale investments	(11,662)	(6,309)	(7,141)
Maturities and sales of available-for-sale investments	8,488	5,634	15,398
Other investing activities	(199)	(330)	(395)
Net cash used for investing activities	**(7,090)**	**(5,765)**	**(330)**
Cash flows provided by (used for) financing activities:			
Increase (decrease) in short-term debt, net	(152)	(101)	23
Additions to long-term debt	—	55	306
Repayments of debt	(137)	(18)	(10)
Proceeds from sales of shares through employee stock benefit plans and other	967	681	762
Repurchase and retirement of common stock	(4,012)	(4,014)	(4,008)
Payment of dividends to stockholders	(524)	(533)	(538)
Net cash used for financing activities	**(3,858)**	**(3,930)**	**(3,465)**
Net increase (decrease) in cash and cash equivalents	**567**	**(566)**	**4,994**
Cash and cash equivalents, end of year	**$ 7,971**	**$ 7,404**	**$ 7,970**
Supplemental disclosures of cash flow information:			
Cash paid during the year for:			
Interest	$ 59	$ 66	$ 53
Income taxes	$ 1,567	$ 475	$ 1,208

See accompanying notes.

INTEL CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

Three Years Ended December 27, 2003 (In Millions—Except Per Share Amounts)	Common Stock and Capital in Excess of Par Value		Acquisition-Related Unearned Stock Compensation	Accumulated Other Comprehensive Income	Retained Earnings	Total
	Number of Shares	Amount				
Balance at December 30, 2000	**6,721**	**$ 8,486**	**$ (97)**	**$ 195**	**$ 28,738**	**$ 37,322**
Components of comprehensive income:						
Net income	—	—	—	—	1,291	1,291
Change in net unrealized holding gain on available-for-sale investments, net of tax	—	—	—	(163)	—	(163)
Change in net unrealized holding loss on derivatives, net of tax	—	—	—	(7)	—	(7)
Total comprehensive income						1,121
Proceeds from sales of shares through employee stock benefit plans, tax benefit of $435 and other	81	1,197	—	—	—	1,197
Issuance of common stock and assumption of stock options in connection with acquisitions, net	21	817	(255)	—	—	562
Amortization of acquisition-related unearned stock compensation	—	—	174	—	—	174
Repurchase and retirement of common stock	(133)	(1,667)	—	—	(2,341)	(4,008)
Cash dividends declared ($0.08 per share)	—	—	—	—	(538)	(538)
Balance at December 29, 2001	**6,690**	**8,833**	**(178)**	**25**	**27,150**	**35,830**
Components of comprehensive income:						
Net income	—	—	—	—	3,117	3,117
Change in net unrealized holding gain on available-for-sale investments, net of tax	—	—	—	(19)	—	(19)
Change in net unrealized holding gain on derivatives, net of tax	—	—	—	43	—	43
Minimum pension liability in excess of plan assets, net of tax	—	—	—	(6)	—	(6)
Total comprehensive income						3,135
Proceeds from sales of shares through employee stock benefit plans, tax benefit of $270 and other	68	951	—	—	—	951
Amortization of acquisition-related unearned stock compensation, net of adjustments	—	(16)	115	—	—	99
Repurchase and retirement of common stock	(183)	(2,127)	—	—	(1,887)	(4,014)
Cash dividends declared ($0.08 per share)	—	—	—	—	(533)	(533)
Balance at December 28, 2002	**6,575**	**7,641**	**(63)**	**43**	**27,847**	**35,468**
Components of comprehensive income:						
Net income	—	—	—	—	5,641	5,641
Change in net unrealized holding gain on available-for-sale investments, net of tax	—	—	—	22	—	22
Change in net unrealized holding gain on derivatives, net of tax	—	—	—	26	—	26
Minimum pension liability in excess of plan assets, net of tax	—	—	—	5	—	5
Total comprehensive income						5,694
Proceeds from sales of shares through employee stock benefit plans, tax benefit of $216 and other	88	1,183	—	—	—	1,183
Amortization of acquisition-related unearned stock compensation, net of adjustments	—	(6)	43	—	—	37
Repurchase and retirement of common stock	(176)	(2,064)	—	—	(1,948)	(4,012)
Cash dividends declared ($0.08 per share)	—	—	—	—	(524)	(524)
Balance at December 27, 2003	**6,487**	**$ 6,754**	**$ (20)**	**$ 96**	**$ 31,016**	**$ 37,846**

See accompanying notes.

Note 1: Basis of Presentation

Intel Corporation has a fiscal year that ends on the last Saturday in December. Fiscal year 2003, a 52-week year, ended on December 27, 2003. Fiscal year 2002 was a 52-week year that ended on December 28, and fiscal year 2001, also a 52-week year, ended on December 29. The next 53-week year will end on December 31, 2005.

The consolidated financial statements include the accounts of Intel and its wholly owned subsidiaries. Intercompany accounts and transactions have been eliminated. Partially owned, non-controlled equity affiliates are accounted for under the equity method. Accounts denominated in non-U.S. currencies have been remeasured using the U.S. dollar as the functional currency. Certain amounts reported in previous years have been reclassified to conform to the 2003 presentation.

Note 2: Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the U.S. requires management to make estimates and judgments that affect the amounts reported in the financial statements and accompanying notes. The accounting estimates that require management's most difficult and subjective judgments include the assessment of recoverability of property, plant, and equipment and goodwill; the valuation of non-marketable equity securities and inventory; and the recognition and measurement of income tax assets and liabilities. The actual results experienced by the company may differ from management's estimates.

Cash and Cash Equivalents

Highly liquid debt securities with insignificant interest rate risk and with original maturities from the date of purchase of three months or less are classified as cash and cash equivalents.

Investments

Trading Assets. Trading assets are stated at fair value, with gains or losses resulting from changes in fair value recognized currently in earnings. The company elects to classify as trading assets a portion of its marketable debt securities. For these debt securities, gains or losses from changes in fair value due to interest rate and currency market fluctuations, offset by losses or gains on related derivatives, are included in interest and other, net. A portion of the company's marketable equity securities may from time to time be classified as trading assets, if the company no longer deems the investments to be strategic in nature at the time of trading asset designation, and has the ability and intent to mitigate equity market risk through sale or the use of derivative instruments. For these marketable equity securities, gains or losses from changes in fair value, primarily offset by losses or gains on related derivative instruments, are included in gains (losses) on equity securities, net. Also included in trading assets is a marketable equity portfolio held to generate returns that seek to offset changes in liabilities related to the equity market risk of certain deferred compensation arrangements. Gains or losses from changes in fair value of these equity securities, offset by losses or gains on the related liabilities, are included in interest and other, net. The company also uses fixed income investments and derivative instruments to seek to offset the remaining portion of the changes in the compensation liabilities.

Available-for-Sale Investments. Investments designated as available-for-sale include marketable debt and equity securities. Investments that are designated as available-for-sale as of the balance sheet date are reported at fair value, with unrealized gains and losses, net of tax, recorded in stockholders' equity. The cost of securities sold is based on the specific identification method. Realized gains and losses on the sale of debt securities are recorded in interest and other, net. Realized gains or losses on the sale or exchange of equity securities and declines in value judged to be other than temporary are recorded in gains (losses) on equity securities, net. Marketable equity securities are presumed to be impaired if the fair value is less than the cost basis continuously for six months, absent compelling evidence to the contrary.

Debt securities with original maturities greater than three months and remaining maturities less than one year are classified as short-term investments. Debt securities with remaining maturities greater than one year are classified as long-term investments.

The company acquires certain equity investments for the promotion of business and strategic objectives, and to the extent that these investments continue to have strategic value, the company typically does not attempt to reduce or eliminate the inherent market risks through hedging activities. The marketable portion of these investments is included in marketable strategic equity securities.

Non-Marketable Equity Securities and Other Investments. Non-marketable equity securities and other investments are accounted for at historical cost or, if Intel has significant influence over the investee, using the equity method of accounting. Intel's proportionate share of income or losses from investments accounted for under the equity method, and any gain or loss on disposal, are recorded in interest and other, net. Non-marketable equity securities, equity-method investments and other investments are included in other assets. All of the company's investments are subject to a periodic impairment review; however, for non-marketable equity securities, the impairment analysis requires significant judgment to identify events or circumstances that would likely have a significant adverse effect on the fair value of the investment. The indicators Intel uses to identify those events and circumstances include the investee's revenue and earnings trends relative to predefined milestones and overall business prospects; the technological feasibility of the investee's products and technologies; the general market conditions in the investee's industry; and the investee's liquidity, debt ratios and the rate at which the investee is using cash. Investments identified as having an indicator of impairment are subject to further analysis to determine if the investment is other than temporarily impaired, in which case the investment is written down to its impaired value. When an investee is not considered viable from a financial or technological point of view, the entire investment is written down, since the estimated fair market value is considered to be nominal. If an investee obtains additional funding at a valuation lower than Intel's carrying amount or requires a new round of equity funding to stay in operation, and the new funding does not appear imminent, it is presumed that the investment is other than temporarily impaired, unless specific facts and circumstances indicate otherwise. Impairment of non-marketable equity securities is recorded in gains (losses) on equity securities, net.

Securities Lending

From time to time, the company enters into securities lending agreements with financial institutions, generally to facilitate hedging transactions. Selected securities are loaned and are secured by collateral in the form of cash or securities. The loaned securities continue to be carried as investment assets on the balance sheet. Cash collateral is recorded as an asset with a corresponding liability. For lending agreements collateralized by securities, the collateral is not recorded as an asset or a liability, unless the collateral is repledged. See "Note 5: Borrowings."

Fair Values of Financial Instruments

Fair values of cash equivalents approximate cost due to the short period of time to maturity. Fair values of short-term investments, trading assets, long-term investments, marketable strategic equity securities, certain non-marketable investments, short-term debt, long-term debt, swaps, currency forward contracts, equity options and warrants are based on quoted market prices or pricing models using current market rates. Debt securities are generally valued using discounted cash flows in a yield-curve model based on LIBOR. Equity options and warrants are priced using a Black-Scholes option pricing model. For the company's portfolio of non-marketable equity securities, management believes that the carrying value of the portfolio approximates the fair value at December 27, 2003 and December 28, 2002. This estimate takes into account the decline of the equity and venture capital markets over the last few years, the impairment analyses performed and the impairments recorded during 2003 and 2002. All of the estimated fair values are management's estimates; however, when there is no readily available market, the estimated fair values may not necessarily represent the amounts that could be realized in a current transaction, and these fair values could change significantly.

Derivative Financial Instruments

The company's primary objective for holding derivative financial instruments is to manage currency, interest rate and some equity market risks. The company's derivative instruments are recorded at fair value and are included in other current assets, other assets, other accrued liabilities or debt. The company's accounting policies for these instruments are based on whether they meet the company's criteria for designation as hedging transactions, either as cash flow or fair value hedges. A hedge of the exposure to variability in the cash flows of an asset or a liability, or of a forecasted transaction, is referred to as a cash flow hedge. A hedge of the exposure to changes in fair value of an asset or a liability, or of an unrecognized firm commitment, is referred to as a fair value hedge. The criteria for designating a derivative as a hedge include the instrument's effectiveness in risk reduction and, in most cases, a one-to-one matching of the derivative instrument to its underlying transaction. Gains and losses from changes in fair values of derivatives that are not designated as hedges for accounting purposes are recognized currently in earnings, and generally offset changes in the values of related assets, liabilities or debt.

As part of its strategic investment program, the company also acquires equity derivative instruments, such as warrants and equity conversion rights associated with debt instruments, that are not designated as hedging instruments. The gains or losses from changes in fair values of these equity derivatives are recognized in gains (losses) on equity securities, net.

Currency Risk. The company transacts business in various currencies other than the U.S. dollar, primarily the Euro and certain other European and Asian currencies. The company has established balance sheet and forecasted transaction risk management programs to protect against reductions in fair value and volatility of future cash flows caused by changes in exchange rates. The forecasted transaction risk management program includes anticipated transactions such as operating costs and expenses and capital purchases. The company may use currency forward contracts, currency options, currency interest rate swaps and currency borrowings in these risk management programs. These programs reduce, but do not always entirely eliminate, the impact of currency exchange movements.

Currency forward contracts and currency options that are used to hedge exposures to variability in anticipated non-U.S.-dollar-denominated cash flows are designated as cash flow hedges. The maturities of these instruments are generally less than 24 months. For these derivatives, the gain or loss from the effective portion of the hedge is reported as a component of other comprehensive income in stockholders' equity and is reclassified into earnings in the same period or periods in which the hedged transaction affects earnings, and within the same income statement line item as the impact of the hedged transaction. The gain or loss from the ineffective portion of the hedge in excess of the cumulative change in the present value of future cash flows of the hedged item, if any, is recognized in interest and other, net during the period of change.

Currency interest rate swaps and currency forward contracts are used to offset the currency risk of non-U.S.-dollar-denominated debt securities classified as trading assets, as well as other assets and liabilities denominated in various currencies. The maturities of these instruments are generally less than 12 months, except for derivatives hedging equity investments, which are generally five years or less. Changes in fair value of the underlying assets and liabilities are generally offset by the changes in fair value of the related derivatives, with the resulting net gain or loss, if any, recorded in interest and other, net.

Interest Rate Risk. The company's primary objective for holding investments in debt securities is to preserve principal while maximizing yields, without significantly increasing risk. To achieve this objective, the returns on a substantial majority of the company's investments in long-term fixed-rate marketable debt securities are swapped to U.S. dollar LIBOR-based returns, using interest rate swaps and currency interest rate swaps in transactions that are not designated as hedges for accounting purposes. The floating interest rates on the swaps are reset on a monthly, quarterly or semiannual basis. Changes in fair value of the debt securities classified as trading assets are generally offset by changes in fair value of the related derivatives, resulting in negligible net impact. The net gain or loss, if any, is recorded in interest and other, net.

The company may also enter into interest rate swap agreements to modify the interest characteristics of a portion of its outstanding long-term debt. These transactions are designated as fair value hedges. The gains or losses from the changes in fair value of the interest rate swaps, as well as the offsetting change in the hedged fair value of the long-term debt, are recognized in interest expense.

Equity Market Risk. The company may enter into transactions designated as fair value hedges using equity options, swaps or forward contracts to hedge the equity market risk of marketable securities in its portfolio of strategic equity investments once the securities are no longer considered to have strategic value. The gain or loss from the change in fair value of these equity derivatives, as well as the offsetting change in hedged fair value of the underlying equity securities, are recognized currently in gains (losses) on equity securities, net. The company may use equity derivatives in transactions not designated as hedges to offset the change in fair value of certain equity securities classified as trading assets. The company may or may not enter into transactions to reduce or eliminate the market risks of its investments in strategic equity derivatives, including warrants.

Measurement of Effectiveness of Hedge Relationships. For currency forward contracts, effectiveness of the hedge is measured using spot rates for hedging strategies related to long-term capital purchases, and using forward rates for all other strategies, to value the forward contract and the underlying hedged transaction. For currency options and equity options, effectiveness is measured by the change in the option's intrinsic value, which represents the change from the spot price of the underlying hedged transaction compared to the option's strike price. Changes in time value of these options are not included in the assessment of effectiveness. For interest rate swaps, effectiveness is measured by offsetting the change in fair value of the long-term debt with the change in fair value of the interest rate swap.

Any ineffective portion of the hedges, as well as amounts not included in the assessment of effectiveness, are recognized currently in interest and other, net or in gains (losses) on equity securities, net, depending on the nature of the underlying asset or liability. If a

cash flow hedge were to be discontinued because it is probable that the original hedged transaction will not occur as anticipated, the unrealized gains or losses on the related derivative would be reclassified into earnings. Subsequent gains or losses on the related derivative instrument would be recognized in income in each period until the instrument matures, is terminated or is sold.

For all periods presented, the portion of hedging instruments' gains or losses excluded from the assessment of effectiveness and the ineffective portions of hedges had an insignificant impact on earnings for both cash flow and fair value hedges. There was no significant impact to results of operations from discontinued cash flow hedges as a result of forecasted transactions that did not occur. For all periods presented, insignificant amounts of deferred gains or losses were reclassified from accumulated other comprehensive income to depreciation expense related to the company's foreign currency capital purchase hedging program. The company estimates that less than $10 million of net derivative gains included in other comprehensive income will be reclassified into earnings within the next 12 months.

Inventories

Inventory cost is computed on a currently adjusted standard basis (which approximates actual cost on an average or first-in, first-out basis). Work in process and finished goods inventory are determined to be saleable based on a demand forecast within a specific time horizon, generally six months or less. Inventory in excess of saleable amounts is not valued, and the remaining inventory is valued at the lower of cost or market. Inventories at fiscal year-ends were as follows:

(In Millions)	2003	2002
Raw materials	$ 333	$ 223
Work in process	1,490	1,365
Finished goods	696	688
Total inventories	**$ 2,519**	**$ 2,276**

Property, Plant and Equipment

Property, plant and equipment, net at fiscal year-ends was as follows:

(In Millions)	2003	2002
Land and buildings	$ 12,651	$ 11,374
Machinery and equipment	24,233	22,800
Construction in progress	1,808	2,738
	38,692	**36,912**
Less accumulated depreciation	(22,031)	(19,065)
Total property, plant and equipment, net	**$ 16,661**	**$ 17,847**

Property, plant and equipment is stated at cost. Depreciation is computed for financial reporting purposes principally using the straight-line method over the following estimated useful lives: machinery and equipment, 2–4 years; buildings, 4–40 years. Reviews are regularly performed to determine whether facts and circumstances exist which indicate that the carrying amount of assets may not be recoverable or that the useful life is shorter than originally estimated. The company assesses the recoverability of its assets by comparing the projected undiscounted net cash flows associated with the related asset or group of assets over their remaining lives against their respective carrying amounts. Impairment, if any, is based on the excess of the carrying amount over the fair value of those assets (see "Note 19: Impairment of Long-Lived Assets"). If assets are determined to be recoverable, but the useful lives are shorter than originally estimated, the net book value of the assets is depreciated over the newly determined remaining useful lives.

Goodwill

Effective the beginning of 2002, the company discontinued amortizing the remaining goodwill balances under the provisions of Statement of Financial Accounting Standards (SFAS) No. 142, "Goodwill and Other Intangible Assets." All remaining and future acquired goodwill is subject to an impairment test in the fourth quarter of each year, or earlier if indicators of potential impairment exist, using a fair-value-based approach. See "Note 16: Goodwill" for a discussion of goodwill impairments.

Upon adoption of SFAS No. 141, "Business Combinations," workforce-in-place no longer meets the definition of an identifiable intangible asset for acquisitions qualifying as business combinations. As a result, as of the beginning of 2002, the net book value of the company's remaining workforce-in-place of $39 million, along with associated deferred tax liabilities of $19 million, was reclassified to goodwill

For 2001, reported net income of $1,291 million would have increased by $1,556 million to $2,847 million, adjusted for the exclusion of goodwill and workforce-in-place amortization, net of tax effect. Reported basic earnings per share of $0.19 in 2001 would have increased by $0.23 per share to $0.42 per share, and reported diluted earnings per share of $0.19 would have increased by $0.22 per share to $0.41 per share.

Identified Intangible Assets

Acquisition-related intangibles include developed technology, trademarks, customer lists and workforce-in-place, and are amortized on a straight-line basis over periods ranging from 2–6 years. Intellectual property assets primarily represent rights acquired under technology licenses and are amortized over the periods of benefit, ranging from 2–10 years, generally on a straight-line basis. All identified intangible assets are classified within other assets on the balance sheet. In the quarter following the period in which identified intangible assets become fully amortized, the fully amortized balances are removed from the gross asset and accumulated amortization amounts.

The company performs a quarterly review of its identified intangible assets to determine if facts and circumstances exist which indicate that the useful life is shorter than originally estimated or that the carrying amount of assets may not be recoverable. If such facts and circumstances do exist, the company assesses the recoverability of identified intangible assets by comparing the projected undiscounted net cash flows associated with the related asset or group of assets over their remaining lives against their respective carrying amounts. Impairment, if any, is based on the excess of the carrying amount over the fair value of those assets.

Revenue Recognition

The company recognizes net revenue when the earnings process is complete, as evidenced by an agreement with the customer, transfer of title and acceptance, if applicable, as well as fixed pricing and probable collectibility. Because of frequent sales price reductions and rapid technology obsolescence in the industry, sales made to distributors under agreements allowing price protection and/or right of return are deferred until the distributors sell the merchandise. Shipping charges billed to customers are included in net revenue, and the related shipping costs are included in cost of sales.

Product Warranty

The company generally sells products with a limited warranty of product quality and a limited indemnification of customers against intellectual property infringement claims related to the company's products. The company accrues for known warranty and indemnification issues if a loss is probable and can be reasonably estimated, and accrues for estimated incurred but unidentified issues based on historical activity. The accrual and the related expense for known issues were not significant during the periods presented. Due to product testing, the short time between product shipment and the detection and correction of product failures, and a low historical rate of payments on indemnification claims, the accrual and related expense for estimated incurred but unidentified issues were not significant during the periods presented.

Advertising

Cooperative advertising obligations are accrued and the costs expensed at the same time the related revenue is recognized. All other advertising costs are expensed as incurred. Cooperative advertising expenses are recorded as marketing, general and administrative expense to the extent that an advertising benefit separate from the revenue transaction can be identified and the cash paid does not exceed the fair value of that advertising benefit received. Any excess of cash paid over the fair value of the advertising benefit received is recorded as a reduction of revenue. Advertising expense was $1.8 billion in 2003 ($1.7 billion in 2002 and $1.6 billion in 2001).

Employee Stock Benefit Plans

The company has employee stock benefit plans, which are described more fully in "Note 12: Employee Stock Benefit Plans." The company's stock option plans are accounted for under the intrinsic value recognition and measurement principles of APB Opinion No. 25, "Accounting for Stock Issued to Employees," and related Interpretations. Because the exercise price of all options granted under these stock option plans was equal to the market price of the underlying common stock (defined as the average of the high and low trading prices reported by The NASDAQ Stock Market*) on the grant date, no stock-based employee compensation, other than acquisition-related compensation, is recognized in net income. The following table illustrates the effect on net income and earnings per share if the company had applied the fair value recognition provisions of SFAS No. 123, "Accounting for Stock-Based Compensation," as amended, to options granted under the stock option plans and rights to acquire stock granted under the company's Stock Participation Plan, collectively called "options." For purposes of this pro-forma disclosure, the value of the options is estimated using a Black-Scholes option pricing model and amortized ratably to expense over the options' vesting periods. Because the estimated value is determined as of the date of grant, the actual value ultimately realized by the employee may be significantly different.

(In Millions—Except Per Share Amounts)	2003	2002	2001
Net income, as reported	$5,641	$3,117	$1,291
Less: Total stock-based employee compensation expense determined under the fair value method for all awards, net of tax	991	1,170	1,037
Pro-forma net income	$4,650	$1,947	$ 254
Reported basic earnings per common share	$ 0.86	$ 0.47	$ 0.19
Reported diluted earnings per common share	$ 0.85	$ 0.46	$ 0.19
Pro-forma basic earnings per common share	$ 0.71	$ 0.29	$ 0.04
Pro-forma diluted earnings per common share	$ 0.71	$ 0.29	$ 0.04

It is the company's policy under SFAS No. 123 to periodically make adjustments to pro-forma compensation expense to reflect forfeitures. Based on recent forfeiture data, the company reversed previously recognized pro-forma compensation expense and related tax effects totaling $190 million in 2003 ($87 million in 2002 and $93 million in 2001).

SFAS No. 123 requires the use of option pricing models that were not developed for use in valuing employee stock options. The Black-Scholes option pricing model was developed for use in estimating the fair value of short-lived exchange-traded options that have no vesting restrictions and are fully transferable. In addition, option pricing models require the input of highly subjective assumptions, including the option's expected life and the price volatility of the underlying stock. Because the company's employee stock options have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in the opinion of management, the existing models do not necessarily provide a reliable single measure of the fair value of employee stock options. See "Note 12: Employee Stock Benefit Plans" for a discussion of the assumptions used in the option pricing model and estimated fair value of employee stock options.

Recent Accounting Pronouncements

The Financial Accounting Standards Board (FASB) issued Interpretation No. 46 (FIN 46), "Consolidation of Variable Interest Entities," in January 2003 and amended the Interpretation in December 2003. FIN 46 requires an investor with a majority of the variable interests (primary beneficiary) in a variable interest entity (VIE) to consolidate the entity and also requires majority and significant variable interest investors to provide certain disclosures. A VIE is an entity in which the voting equity investors do not have a controlling financial interest or the equity investment at risk is insufficient to finance the entity's activities without receiving additional subordinated financial support from the other parties. Development-stage entities that have sufficient equity invested to finance the activities they are currently engaged in and entities that are businesses, as defined in the Interpretation, are not considered VIEs. The provisions of FIN 46 were effective immediately for all arrangements entered into with new VIEs created after January 31, 2003, and Intel has elected to apply the remaining provisions of the Interpretation for the period ending December 27, 2003. Intel has completed a review of its investments in both non-marketable and marketable equity securities as well as other arrangements to determine whether Intel is the primary beneficiary of any VIEs. The review did not identify any VIEs that would require consolidation or any significant exposure to VIEs that would require disclosure.

Note 3: Earnings Per Share

The shares used in the computation of the company's basic and diluted earnings per common share were as follows:

(In Millions)	2003	2002	2001
Weighted average common shares outstanding	**6,527**	**6,651**	**6,716**
Dilutive effect of employee stock options	94	108	163
Weighted average common shares outstanding, assuming dilution	**6,621**	**6,759**	**6,879**

Weighted average common shares outstanding, assuming dilution, include the incremental shares that would be issued upon the assumed exercise of stock options. For 2003, approximately 418 million of the company's stock options were excluded from the calculation of diluted earnings per share because the exercise prices of the stock options were greater than or equal to the average price of the common shares, and therefore their inclusion would have been anti-dilutive (387 million in 2002 and 211 million in 2001). These options could be dilutive in the future if the average share price increases and is equal to or greater than the exercise price of these options.

Note 4: Common Stock Repurchase Program

The company has an ongoing authorization, as amended, from the Board of Directors to repurchase up to 2.3 billion shares of Intel's common stock in open market or negotiated transactions. During 2003, the company repurchased 176 million shares of common stock at a cost of $4 billion. During 2002, the company repurchased 183 million shares of common stock at a cost of $4 billion (133 million shares at a cost of $4 billion during 2001). Since the program began in 1990, the company has repurchased and retired approximately 1.9 billion shares at a cost of $34 billion. As of December 27, 2003, approximately 414 million shares remained available for repurchase under the existing repurchase authorization.

Note 5: Borrowings

Short-Term Debt

Short-term debt at fiscal year-ends was as follows:

(In Millions)	2003	2002
Drafts payable (non-interest-bearing)	$ 143	$ 211
Floating rate obligations under securities lending agreements	—	84
Current portion of long-term debt	81	141
Total short-term debt	**$ 224**	**$ 436**

Obligations under securities lending agreements had an average rate of 1.25% as of December 28, 2002. The company also borrows under a commercial paper program. Maximum borrowings under the company's commercial paper program reached $30 million during 2003 and $240 million during 2002, and cannot exceed authorized borrowings of $3 billion. No commercial paper was outstanding as of December 27, 2003 or December 28, 2002. The company's commercial paper is rated A-1+ by Standard & Poor's and P-1 by Moody's.

Long-Term Debt

Long-term debt at fiscal year-ends was as follows:

(In Millions)	2003	2002
Payable in U.S. dollars:		
Puerto Rico bonds adjustable 2003, due 2013 at 3.9%–4.25%	$ —	$ 116
Zero coupon senior exchangeable notes due 2004	41	118
Other U.S. dollar debt	1	3
Payable in other currencies:		
Euro debt due 2004–2018 at 2.3%–11%	975	833
	1,017	1,070
Less current portion of long-term debt	(81)	(141)
Total long-term debt	**$ 936**	**$ 929**

In 2003, the company redeemed bonds with a principal amount of $110 million. The bonds were issued by the Puerto Rico Industrial, Tourist, Educational, Medical and Environmental Control Facilities Financing Authority, and the company had guaranteed payment of principal and interest.

Holders of the company's zero coupon senior exchangeable notes (Intel notes) had the right, prior to January 12, 2004, to exchange their Intel notes for Samsung Electronics Co., Ltd. convertible notes (Samsung notes) owned by Intel. The exchangeable notes were issued in order to partially mitigate the equity market risk of Intel's investment in the Samsung notes, and the exchange option has been accounted for as an equity derivative and marked-to-market with the fair value recorded in long-term debt. During 2003, the holders exchanged Intel notes with a principal amount of $57 million ($122 million in 2002). In accordance with the terms of the Intel notes, the company delivered a portion of its investment in the Samsung notes with a face value of approximately $29 million to the holders in exchange for Intel notes ($61 million in 2002). The carrying value of the debt instrument, excluding the portion allocated to the equity derivative, is being accreted to its remaining principal amount of $21 million through interest expense over the period to its maturity. The Intel notes are classified as short-term debt at December 27, 2003. Subsequent to December 27, 2003, substantially all of the remaining Intel note holders have exercised their right to exchange their Intel notes for Samsung notes owned by Intel.

The Euro borrowings were made in connection with the financing of manufacturing facilities and equipment in Ireland, and Intel has invested the proceeds in Euro-denominated instruments of similar maturity to hedge currency and interest rate exposures.

As of December 27, 2003, aggregate debt maturities were as follows: 2004—$81 million; 2005—$48 million; 2006—$54 million; 2007—$58 million; 2008—$140 million; and thereafter—$636 million.

Note 6: Investments

Trading Assets

Trading assets outstanding at fiscal year-ends were as follows:

	2003		2002	
(In Millions)	Net Unrealized Gains	Estimated Fair Value	Net Unrealized Gains (Losses)	Estimated Fair Value
Debt instruments	$ 174	$ 2,321	$ 64	$ 1,460
Equity securities	—	—	63	98
Equity securities offsetting deferred compensation	60	304	(1)	243
Total trading assets	**$ 234**	**$ 2,625**	**$ 126**	**$ 1,801**

Net holding gains (losses) on fixed income debt instruments classified as trading assets were $208 million in 2003, $79 million in 2002 and $(21) million in 2001. Net holding gains (losses) on the related derivatives were $(192) million in 2003, $(75) million in 2002 and $21 million in 2001. These amounts were included in interest and other, net in the consolidated statements of income.

Net holding gains on equity security trading assets were $77 million in 2003, $57 million in 2002 and $72 million in 2001. The $57 million net gain in 2002 includes a gain of $120 million that resulted from the designation of formerly restricted equity investments as trading assets as they became marketable. The cumulative difference between their cost and fair market value at the time they became marketable was recorded as a gain in 2002. Net holding gains (losses) on the related derivatives were $(84) million in 2003, $110 million in 2002 and $18 million in 2001. These gains and losses were included within losses on equity securities, net in the consolidated statements of income.

Certain equity securities within the trading asset portfolio are maintained to generate returns that seek to offset changes in liabilities related to the equity market risk of certain deferred compensation arrangements. These deferred compensation liabilities were $427 million in 2003 and $336 million in 2002, and are included in other accrued liabilities on the consolidated balance sheets. Net holding gains (losses) on equity securities offsetting deferred compensation arrangements were $52 million in 2003, $(64) million in 2002 and $(45) million in 2001, and were included within interest and other, net in the consolidated statements of income.

Available-for-Sale Investments

Available-for-sale investments at December 27, 2003 were as follows:

(In Millions)	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Commercial paper	$ 9,948	$ —	$ (1)	$ 9,947
Bank time deposits	1,900	—	—	1,900
Floating rate notes	1,078	—	—	1,078
Loan participations	985	—	—	985
Corporate bonds	703	—	—	703
Marketable strategic equity securities	467	47	—	514
Preferred stock and other equity	224	9	—	233
Other debt securities	352	—	—	352
Total available-for-sale investments	**15,657**	**56**	**(1)**	**15,712**
Less amounts classified as cash equivalents	(7,764)	—	—	(7,764)
	$ 7,893	**$ 56**	**$ (1)**	**$ 7,948**

Available-for-sale investments at December 28, 2002 were as follows:

(In Millions)	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Commercial paper	$ 6,935	$ 1	$ —	$ 6,936
Bank time deposits	2,121	1	—	2,122
Loan participations	862	—	—	862
Corporate bonds	838	—	—	838
Floating rate notes	781	—	(1)	780
Preferred stock and other equity	140	—	—	140
Other debt securities	71	—	—	71
Marketable strategic equity securities	38	19	(1)	56
Total available-for-sale investments	**11,786**	**21**	**(2)**	**11,805**
Less amounts classified as cash equivalents	(7,189)	—	—	(7,189)
	$ 4,597	**$ 21**	**$ (2)**	**$ 4,616**

The company sold available-for-sale securities with a fair value at the date of sale of $39 million in 2003, $114 million in 2002 and $1.3 billion in 2001. The gross realized gains on these sales totaled $16 million in 2003, $15 million in 2002 and $548 million in 2001. The company realized gross losses on sales of less than $1 million in 2003, $39 million in 2002 and $187 million in 2001. The company recognized gains on shares exchanged in third-party merger transactions of $7 million in 2003, $1 million in 2002 and $156 million in 2001. The company recognized impairment losses on available-for-sale and non-marketable investments of $319 million in 2003, $524 million in 2002 and $1.1 billion in 2001.

The amortized cost and estimated fair value of available-for-sale investments in debt securities at December 27, 2003, by contractual maturity, were as follows:

(In Millions)	Cost	Estimated Fair Value
Due in 1 year or less	$ 13,120	$ 13,119
Due in 1–2 years	842	842
Due in 2–5 years	378	378
Due after 5 years	626	626
Total investments in available-for-sale debt securities	**$ 14,966**	**$ 14,965**

Note 7: Fair Values of Financial Instruments

The estimated fair values of financial instruments outstanding at fiscal year-ends were as follows:

	2003		2002	
(In Millions—Assets (Liabilities))	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
Cash and cash equivalents	$ 7,971	$ 7,971	$ 7,404	$ 7,404
Short-term investments	$ 5,568	$ 5,568	$ 3,382	$ 3,382
Trading assets	$ 2,625	$ 2,625	$ 1,801	$ 1,801
Marketable strategic equity securities	$ 514	$ 514	$ 56	$ 56
Other long-term investments	$ 1,866	$ 1,866	$ 1,178	$ 1,178
Non-marketable equity investments	$ 665	$ 665	$ 730	$ 730
Other non-marketable investments	$ 32	$ 32	$ 92	$ 92
Derivatives recorded as assets	$ 134	$ 134	$ 278	$ 278
Derivatives recorded as liabilities	$ (178)	$ (178)	$ (89)	$ (89)
Short-term debt	$ (224)	$ (224)	$ (436)	$ (432)
Long-term debt	$ (936)	$ (936)	$ (929)	$ (929)

Note 8: Concentrations of Credit Risk

Financial instruments that potentially subject the company to concentrations of credit risk consist principally of investments in debt securities, derivative financial instruments and trade receivables. Intel generally places its investments with high-credit-quality counterparties and, by policy, limits the amount of credit exposure to any one counterparty based on Intel's analysis of that counterparty's relative credit standing. Investments in debt securities with original maturities of greater than six months consist primarily of A and A2 or better rated financial instruments and counterparties. Investments with original maturities of up to six months consist primarily of A-1 and P-1 or better rated financial instruments and counterparties. Government regulations imposed on investment alternatives of Intel's non-U.S. subsidiaries, or the absence of A and A2 rated counterparties in certain countries, result in some minor exceptions, which are reviewed and approved by the Board of Directors annually. Credit rating criteria for derivative instruments are similar to those for investments. The amounts subject to credit risk related to derivative instruments are generally limited to the amounts, if any, by which a counterparty's obligations exceed the obligations of Intel with that counterparty. At December 27, 2003, debt investments were placed with approximately 220 different counterparties. Intel's practice is to obtain and secure available collateral from counterparties against obligations, including securities lending transactions, whenever Intel deems appropriate.

A majority of the company's trade receivables are derived from sales to original equipment manufacturers and original design manufacturers of computer systems, cellular handsets and handheld computing devices, networking and communications equipment, and peripherals. The company's three largest customers accounted for approximately 42% of net revenue for 2003, an increase from 38% for 2002 (35% of net revenue for 2001). At December 27, 2003, the three largest customers accounted for approximately 43% of net accounts receivable (39% of net accounts receivable at December 28, 2002).

The company has adopted credit policies and standards intended to accommodate industry growth and inherent risk. Management believes that credit risks are moderated by the financial stability of the company's end customers and the diverse geographic sales areas. To assess the credit risk of counterparties, a quantitative and qualitative analysis is performed. From this analysis, credit limits are established and a determination is made whether one or more credit support devices, such as obtaining some form of third-party guaranty or standby letter of credit, or obtaining credit insurance for all or a portion of the account balance, is necessary.

Note 9: Interest and Other, Net

(In Millions)	2003	2002	2001
Interest income	$ 248	$ 298	$ 615
Interest expense	(62)	(84)	(56)
Loss on investment in Convera	—	—	(196)
Other, net	6	(20)	30
Total	**$ 192**	**$ 194**	**$ 393**

Effective as of the beginning of 2001, the company adopted SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities," as amended. The cumulative effect of the adoption of SFAS No. 133 was an increase in income before taxes of $45 million, which was included in other, net for 2001.

During 2001, Intel recorded a loss of approximately $39 million as its proportionate share of the net loss of Convera Corporation, accounted for as an equity-method investment, and recognized a combined net loss of $157 million on the impairment and subsequent sale of the remaining investment in Convera.

Note 10: Comprehensive Income

The components of other comprehensive income and related tax effects were as follows:

(In Millions)	2003	2002	2001
Change in net unrealized holding gain on investments, net of tax of $(18), $24 and $187 in 2003, 2002 and 2001, respectively	$ 33	$ (44)	$(347)
Less: adjustment for net gain or loss on investments included in net income, net of tax of $5, $(14) and $(99) in 2003, 2002 and 2001, respectively	(11)	25	184
Change in net unrealized holding gain on derivatives, net of tax of $(15), $(23) and $4 in 2003, 2002 and 2001, respectively	27	43	(7)
Less: adjustment for amortization of net gain on derivatives included in net income, net of tax	(1)	—	—
Minimum pension liability, net of tax of $(2) and $2 in 2003 and 2002, respectively	5	(6)	—
	$ 53	**$ 18**	**$(170)**

The components of accumulated other comprehensive income, net of tax, were as follows:

(In Millions)	2003	2002
Accumulated net unrealized holding gain on available-for-sale investments	$ 35	$ 13
Accumulated net unrealized holding gain on derivatives	62	36
Accumulated minimum pension liability	(1)	(6)
Total accumulated other comprehensive income	**$ 96**	**$ 43**

Note 11: Provision for Taxes

Income before taxes and the provision for taxes consisted of the following:

(Dollars in Millions)	2003	2002	2001
Income (loss) before taxes:			
U.S.	$5,705	$2,165	$ (350)
Non-U.S.	1,737	2,039	2,533
Total income before taxes	**$7,442**	**$4,204**	**$2,183**
Provision for taxes:			
Federal:			
Current	$ 808	$ 542	$ 903
Deferred	420	91	(417)
	1,228	633	486
State:			
Current	223	143	142
Non-U.S.:			
Current	379	292	366
Deferred	(29)	19	(102)
	350	311	264
Total provision for taxes	**$1,801**	**$1,087**	**$ 892**
Effective tax rate	**24.2%**	**25.9%**	**40.9%**

The tax benefit associated with dispositions from employee stock plans reduced taxes currently payable for 2003 by $216 million ($270 million for 2002 and $435 million for 2001).

The difference between the tax provision at the statutory federal income tax rate and the tax provision attributable to income before income taxes was as follows:

(In Percentages)	2003	2002	2001
Statutory federal income tax rate	35.0%	35.0%	35.0%
Increase (reduction) in rate resulting from:			
State taxes, net of federal benefits	1.9	2.2	4.2
Non-U.S. income taxed at different rates	(2.8)	(5.9)	(15.4)
Non-deductible acquisition-related costs and goodwill impairments	3.1	1.3	30.6
Tax benefit related to divestitures	(10.2)	(1.8)	—
Export sales benefit	(2.5)	(3.0)	(11.2)
Other	(0.3)	(1.9)	(2.3)
Income tax rate	**24.2%**	**25.9%**	**40.9%**

The company reduced its tax provision for 2003 by approximately $758 million due to the tax benefits related to the sale of certain businesses and assets through the sale of stock of acquired companies ($75 million in 2002). See "Note 14: Business Combinations and Divestitures."

The company reduced its tax provision for 2001 by $100 million due to an increase in the tax benefit related to export sales for 2000 including the impact of a revision in the tax law. This change in estimated taxes was reflected in the federal tax return for 2000 filed in 2001.

During 2001, the Internal Revenue Service (IRS) commenced an examination of Intel's tax returns for the years 1999 and 2000. In August 2003, the IRS proposed certain adjustments to the amounts reflected by Intel on these returns as a tax benefit for its export sales (see "Note 21: Contingencies"). In January 2004, the IRS commenced an examination of Intel's tax returns for the years 2001 and 2002. Although the outcome of tax audits is always uncertain, based on currently available information, management believes that the ultimate outcome will not have a material adverse effect on the company's financial position, cash flows or overall trends in results of operations.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

Significant components of the company's deferred tax assets and liabilities at fiscal year-ends were as follows:

(In Millions)	2003	2002
Deferred tax assets		
Accrued compensation and benefits	$ 218	$ 199
Accrued advertising	107	96
Deferred income	245	199
Inventory valuation	156	184
Impairment losses on equity investments	106	319
Other, net	137	139
	969	1,136
Deferred tax liabilities		
Depreciation	(1,272)	(948)
Acquired intangibles	(68)	(120)
Unremitted earnings of certain subsidiaries	(86)	(112)
Unrealized gains on investments	(50)	(45)
Other, net	(6)	(7)
	(1,482)	(1,232)
Net deferred tax liability	**$ (513)**	**$ (96)**

U.S. income taxes were not provided for on a cumulative total of approximately $7.0 billion of undistributed earnings for certain non-U.S. subsidiaries. The company intends to reinvest these earnings indefinitely in operations outside the U.S.

Note 12: Employee Stock Benefit Plans

Stock Option Plans

The company has a stock option plan under which officers, key employees and non-employee directors may be granted options to purchase shares of the company's authorized but unissued common stock. This plan expires in May 2004. The company also has a broad-based stock option plan under which stock options may be granted to all employees other than officers and directors. This plan expires in January 2007. As of December 27, 2003, substantially all of our employees were participating in one of the stock option plans. The company presently expects to propose a new equity plan for stockholder vote at its May 2004 Annual Stockholders' Meeting. Contingent on stockholder approval, this new equity plan would replace both of the existing plans. The company's Executive Long-Term Stock Option Plan, under which certain key employees, including officers, were granted stock options, terminated in 1998. In prior years, Intel also assumed the stock option plans and the outstanding options of certain acquired companies. No additional stock grants will be made under the Executive Long-Term Stock Option Plan or the assumed plans. Options granted by Intel currently expire no later than 10 years from the grant date. Options granted in 2003 to existing and newly hired employees generally vest in increments over four or five years from the date of grant, and certain grants to key employees have delayed vesting, generally beginning six years from the date of grant. Additional information with respect to stock option plan activity is as follows:

		Outstanding Options	
(Shares in Millions)	Shares Available for Grant	Number of Shares	Weighted Average Exercise Price
December 30, 2000	**347.6**	**638.2**	**$ 24.16**
Supplemental grant	(51.9)	51.9	$ 25.69
2002 merit grant	(67.6)	67.6	$ 24.37
Other grants	(118.6)	118.6	$ 25.48
Options assumed in acquisitions	—	9.0	$ 19.25
Exercises	—	(68.0)	$ 6.06
Cancellations	45.1	(48.8)	$ 35.01
Additional shares reserved	900.0	—	—
December 29, 2001	**1,054.6**	**768.5**	**$ 25.33**
Supplemental grant	(118.1)	118.1	$ 20.23
Other grants	(55.5)	55.5	$ 25.43
Exercises	—	(51.4)	$ 6.79
Cancellations	40.8	(45.3)	$ 33.56
December 28, 2002	**921.8**	**845.4**	**$ 25.31**
Grants	(109.9)	109.9	$ 20.22
Exercises	—	(63.7)	$ 10.08
Cancellations	40.0	(41.5)	$ 30.49
Reduction in shares available for grant	(325.0)	—	—
December 27, 2003	**526.9**	**850.1**	**$ 25.54**
Options exercisable at:			
December 29, 2001		230.9	$ 11.27
December 28, 2002		274.0	$ 16.57
December 27, 2003		327.5	$ 20.53

In December 2003, the Board of Directors approved a reduction in the number of shares authorized for issuance under the broad-based stock option plan, reducing the number of shares available for issuance by 325 million. This amount was not expected to be utilized for future grants, after taking into account the current average run-rate of grants per year and the remaining life of the plan.

In November 2002, a supplemental stock option grant was given to employees who had previously been granted options in 2001 and 2000 that had exercise prices above the November 2002 market price. This 2002 supplemental grant was made in order to retain employees, due to competitive market conditions and a decline in the company's stock price. The 2002 supplemental options vest in equal amounts over four years. A supplemental stock grant was also made in 2001, vesting in equal amounts in 2002 and 2003.

During 2001, the company granted merit-based options that would typically have been granted in 2002, in order to enhance the potential long-term retention value of these stock options. This grant is referred to in the table above as "2002 merit grant." The 2002 merit grant vests in 2007, on about the same date that the options would vest if they had been granted in 2002. Merit grants made in 2002, included in "other grants" in the table above, were reduced by the shares granted in this early grant program during 2001.

The range of option exercise prices for options outstanding at December 27, 2003 was $0.01 to $87.90. This range reflects the impact of options assumed with acquired companies in addition to the fluctuating price of Intel common stock.

The following table summarizes information about options outstanding at December 27, 2003:

	Outstanding Options			Exercisable Options	
Range of Exercise Prices	Number of Shares (In Millions)	Weighted Average Contractual Life (In Years)	Weighted Average Exercise Price	Number of Shares (In Millions)	Weighted Average Exercise Price
$0.01–$17.40	115.4	3.0	$ 8.57	94.3	$ 7.13
$17.41–$20.17	193.6	6.3	$ 18.48	103.2	$ 18.34
$20.23–$24.35	263.1	8.0	$ 22.38	37.6	$ 20.97
$24.37–$31.35	126.6	7.1	$ 28.63	46.9	$ 26.44
$31.37–$45.16	70.4	7.1	$ 37.06	30.5	$ 38.46
$45.96–$87.90	81.0	6.3	$ 61.96	15.0	$ 63.74
Total	**850.1**	**6.5**	**$ 25.54**	**327.5**	**$ 20.53**

These options will expire if not exercised at specific dates through October 2013. Option exercise prices for options exercised during the three-year period ended December 27, 2003 ranged from $0.01 to $36.47.

Stock Participation Plan

In addition to the employee stock option plans, the company has a Stock Participation Plan, under which eligible employees may purchase shares of Intel's common stock at 85% of the average of the high and low stock price reported on The NASDAQ Stock Market* at specific, predetermined dates. Approximately 75% of the company's employees were participating in the Stock Participation Plan as of December 27, 2003. Of the 944 million shares authorized to be issued under the plan, 85.9 million shares remained available for issuance at December 27, 2003. Employees purchased 23.8 million shares in 2003 (17.0 million in 2002 and 13.0 million in 2001) for $328 million ($338 million in 2002 and $351 million in 2001).

SFAS No. 123 Assumptions and Fair Value

The effect on net income and earnings per share if the company had applied the recognition provision of SFAS No. 123 is reported in "Note 2: Accounting Policies."

The weighted average estimated fair value of employee stock options granted during 2003 was $9.02 ($10.89 in 2002 and $12.62 in 2001). The fair value of options granted in 2003, 2002 and 2001 was estimated at the date of grant using the following weighted average assumptions:

	2003	2002	2001
Expected life (in years)	4.4	6.0	6.0
Risk-free interest rate	2.2%	3.7%	4.9%
Volatility	.54	.49	.47
Dividend yield	.4%	.3%	.3%

An analysis of historical information is used to determine the company's assumptions, to the extent that historical information is relevant, based on the terms of the grants being issued in any given period. The expected life for options granted in 2003 reflects

options granted to existing employees that now generally vest ratably over four years from the date of grant. Options granted to existing employees during 2002 and prior years generally vest five years from the date of grant.

Under the Stock Participation Plan, rights to purchase shares are granted during the first and third quarter of each year. The estimated weighted average value of rights granted under the Stock Participation Plan during 2003 was $5.65 ($7.23 during 2002 and $8.97 in 2001). The fair value of rights granted during 2003, 2002 and 2001 was estimated at the date of grant using the following weighted average assumptions:

	2003	2002	2001
Expected life (in years)	.5	.5	.5
Risk-free interest rate	1.1%	1.8%	4.1%
Volatility	.50	.50	.54
Dividend yield	.4%	.3%	.3%

Note 13: Retirement Benefit Plans

Profit Sharing Plans

The company provides tax-qualified profit-sharing retirement plans for the benefit of eligible employees, former employees and retirees in the U.S. and certain other countries. The plans are designed to provide employees with an accumulation of funds for retirement on a tax-deferred basis and provide for annual discretionary employer contributions. Amounts to be contributed are determined by the Chief Executive Officer of the company under delegation of authority from the Board of Directors, pursuant to the terms of the Profit Sharing Plan. Substantially all of the assets as of December 27, 2003 have been allocated to an equity index fund managed by an outside fund manager, consistent with the investment policy for the Profit Sharing Plan.

The company also provides a non-qualified profit-sharing retirement plan for the benefit of eligible employees in the U.S. This plan is designed to permit certain discretionary employer contributions and to permit employee deferral of a portion of salaries in excess of certain tax limits and deferral of bonuses. This plan is unfunded.

The company expensed $302 million for the qualified and non-qualified profit-sharing retirement plans in 2003 ($303 million in 2002 and $190 million in 2001). The company expects to fund approximately $291 million for the 2003 contribution to the qualified plan and to allocate approximately $3 million for the non-qualified profit-sharing retirement plan.

Contributions made by the company on behalf of the employees vest based on the employee's years of service. Vesting begins after three years of service in 20% annual increments until the employee is 100% vested after seven years.

Pension and Postretirement Benefit Plans

U.S. Pension Benefits. The company provides a tax-qualified defined-benefit pension plan for the benefit of eligible employees and retirees in the U.S. The plan provides for a minimum pension benefit that is determined by a participant's years of service, final average compensation (taking into account the participant's social security wage base) and the value of the company's contributions, plus earnings, in the Profit Sharing Plan. If the pension benefit exceeds the participant's balance in the Profit Sharing Plan, the participant will receive a combination of pension and profit-sharing amounts equal to the pension benefit. However, the participant will receive only the benefit from the Profit Sharing Plan if such benefit is greater than the value of the pension benefit. The U.S defined-benefit plan's projected benefit obligation assumes future contributions to the Profit Sharing Plan, and if the company does not continue to contribute to or significantly reduces contributions to the Profit Sharing Plan, the U.S. defined-benefit plan projected benefit obligation could increase significantly. Historically, the company has contributed 8% to 12.5% of participants' eligible compensation to the Profit Sharing Plan on an annual basis. The benefit obligation and related assets under this plan have been measured as of November 30, 2003.

Non-U.S. Pension Benefits. The company also provides defined-benefit pension plans in certain other countries. The company deposits funds for certain of these plans, consistent with the requirements of local law, with insurance companies, third-party trustees, or into government-managed accounts, and/or accrues for the unfunded portion of the obligation. The assumptions used in calculating

the obligation for the non-U.S. plans depend on the local economic environment. The benefit obligations and related assets under these plans have been measured as of December 27, 2003.

Postretirement Medical Benefits. Upon retirement, eligible U.S. employees are credited with a defined dollar amount based on years of service. These credits can be used to pay all or a portion of the cost to purchase coverage in an Intel-sponsored medical plan.

Funding Policy. The company's practice is to fund the various pension plans in amounts at least sufficient to meet the minimum requirements of U.S. federal laws and regulations or applicable local laws and regulations. The assets of the various plans are invested in corporate equities, corporate debt securities, government securities and other institutional arrangements. The portfolio of each plan depends on plan design and applicable local laws. Depending on the design of the plan, and local custom and market circumstances, the minimum liabilities of a plan may exceed qualified plan assets. The company accrues for all such liabilities.

Benefit Obligation and Plan Assets

The changes in the benefit obligations, plan assets and funded status for the plans described above were as follows:

	U.S. Pension Benefits		Non-U.S. Pension Benefits		Postretirement Medical Benefits	
(In Millions)	2003	2002	2003	2002	2003	2002
Change in projected benefit obligation:						
Beginning projected benefit obligation	$ 28	$ 15	$ 242	$ 194	$ 132	$ 101
Service cost	5	3	26	23	12	10
Interest cost	3	2	18	14	10	8
Plan participants' contributions	—	—	3	4	—	—
Actuarial (gain) loss	14	9	(15)	8	28	16
Currency exchange rate changes	—	—	37	8	—	—
Benefits paid to plan participants	(1)	(1)	(5)	(9)	(4)	(3)
Ending projected benefit obligation	**$ 49**	**$ 28**	**$ 306**	**$ 242**	**$ 178**	**$ 132**

	U.S. Pension Benefits		Non-U.S. Pension Benefits		Postretirement Medical Benefits	
(In Millions)	2003	2002	2003	2002	2003	2002
Change in plan assets:						
Beginning fair value of plan assets	$ 23	$ 11	$ 140	$ 133	$ 1	$ —
Actual return on plan assets	2	(3)	18	(16)	—	—
Employer contributions	6	16	15	23	3	3
Plan participants' contributions	—	—	3	4	2	1
Currency exchange rate changes	—	—	23	5	—	—
Benefits paid to participants	(1)	(1)	(4)	(9)	(4)	(3)
Ending fair value of plan assets	**$ 30**	**$ 23**	**$ 195**	**$ 140**	**$ 2**	**$ 1**

	U.S. Pension Benefits		Non-U.S. Pension Benefits		Postretirement Medical Benefits	
(In Millions)	2003	2002	2003	2002	2003	2002
Funded status:						
Ending funded status	$ (19)	$ (5)	$(111)	$(102)	$(176)	$(131)
Unrecognized transition obligation	—	—	2	2	—	—
Unrecognized net actuarial (gain) loss	18	7	32	40	33	6
Unrecognized prior service cost	1	2	—	—	36	40
Net amount recognized	**$ —**	**$ 4**	**$ (77)**	**$ (60)**	**$(107)**	**$ (85)**

The amounts recognized on the balance sheet for the plans described above were as follows:

(In Millions)	U.S. Pension Benefits 2003	U.S. Pension Benefits 2002	Non-U.S. Pension Benefits 2003	Non-U.S. Pension Benefits 2002	Postretirement Medical Benefits 2003	Postretirement Medical Benefits 2002
Amounts recognized in the balance sheet:						
Prepaid benefit cost	$ —	$ 4	$ 25	$ 14	$ —	$ —
Accrued benefit liability	—	—	(103)	(82)	(107)	(85)
Deferred tax asset	—	—	—	2	—	—
Accumulated other comprehensive income	—	—	1	6	—	—
Net amount recognized	**$ —**	**$ 4**	**$ (77)**	**$ (60)**	**$(107)**	**$ (85)**

The accumulated benefit obligations for the plans were as follows:

(In Millions)	U.S. Pension Benefits 2003	U.S. Pension Benefits 2002	Non-U.S. Pension Benefits 2003	Non-U.S. Pension Benefits 2002	Postretirement Medical Benefits 2003	Postretirement Medical Benefits 2002
Accumulated benefit obligation	$ 28	$ 17	$ 224	$ 167	$ 178	$ 132

Included in the aggregate data in the tables below are the aggregate amounts applicable to the company's pension plans with accumulated benefit obligations in excess of plan assets as well as plans with projected benefit obligations in excess of plan assets. Amounts related to such plans were as follows:

(In Millions)	U.S. Pension Benefits 2003	U.S. Pension Benefits 2002	Non-U.S. Pension Benefits 2003	Non-U.S. Pension Benefits 2002
Plans with accumulated benefit obligations in excess of plan assets:				
Accumulated benefit obligations	—	—	$ 148	$ 68
Plan assets	—	—	$ 87	$ 25
Plans with projected benefit obligations in excess of plan assets:				
Projected benefit obligations	$ 49	$ 28	$ 306	$ 242
Plan assets	$ 30	$ 23	$ 195	$ 140

Assumptions

Weighted-average actuarial assumptions used to determine benefit obligations for the plans were as follows:

	U.S. Pension Benefits 2003	U.S. Pension Benefits 2002	Non-U.S. Pension Benefits 2003	Non-U.S. Pension Benefits 2002	Postretirement Medical Benefits 2003	Postretirement Medical Benefits 2002
Discount rate	6.0%	7.0%	5.5%	7.9%	6.0%	7.0%
Expected return on plan assets	8.0%	8.5%	6.7%	9.2%	—	—
Rate of compensation increase	5.0%	5.0%	3.5%	6.8%	—	—
Future profit-sharing contributions	6.0%	6.0%	—	—	—	—

Weighted-average actuarial assumptions used to determine costs for the plans were as follows:

	U.S. Pension Benefits		Non-U.S. Pension Benefits		Postretirement Medical Benefits	
	2003	2002	2003	2002	2003	2002
Discount rate	7.0%	7.0%	5.5%	7.9%	6.0%	7.0%
Expected return on plan assets	8.0%	8.5%	6.7%	9.2%	—	—
Rate of compensation increase	5.0%	5.0%	3.5%	6.8%	—	—
Future profit-sharing contributions	6.0%	6.0%	—	—	—	—

Asset return assumptions are derived following actuarial and statistical methodologies, from an analysis of long-term historical data relevant to the country where each plan is in effect and the investments applicable to the plan. Plans are subject to regulation under local law, which may directly or indirectly affect the types of investments that a plan may hold.

Net Periodic Benefit Cost

The net periodic benefit cost for the plans included the following components:

	U.S. Pension Benefits			Non-U.S. Pension Benefits			Postretirement Medical Benefits		
(In Millions)	2003	2002	2001	2003	2002	2001	2003	2002	2001
Service cost	$ 7	$ 6	$ 3	$ 27	$ 22	$ 34	$ 12	$ 10	$ 9
Interest cost	2	2	1	18	14	13	10	8	7
Expected return on plan assets	(2)	(1)	(1)	(1)	(12)	(15)	—	—	—
Amortization of prior service cost	1	—	—	—	—	1	4	4	4
Recognized net actuarial (gain) loss	1	—	—	1	—	1	—	—	—
Net periodic benefit cost	**$ 9**	**$ 7**	**$ 3**	**$ 45**	**$ 24**	**$ 34**	**$ 26**	**$ 22**	**$ 20**

U.S. Plan Assets

The company's U.S. Pension Plan asset allocation at the end of fiscal 2003 and 2002 was 100% allocated to equity securities. The target allocation for 2004 is expected to remain the same. The expected long-term rate of return for these equity securities is 8%. The company's long-term investment goal is to provide a basic level of benefits through the U.S. Pension Plan guarantee, with an opportunity for participants to accumulate funds in excess of amounts guaranteed by the U.S. Pension Plan through asset accumulation in the Profit Sharing Plan. The U.S. plan assets are invested in equity securities, primarily in large, diversified domestic and multinational U.S. equities, which seek to match the performance of the Standard and Poor's 500 Index*. The company believes that investing in large, multinational companies achieves adequate diversity, in that such companies represent a wide range of industries, and many of those companies derive a significant portion of their revenue from non-U.S. sources or otherwise reflect market conditions throughout the world. When deemed appropriate, a portion of the fund may be invested in futures contracts for the purpose of acting as a temporary substitute for investment in equity securities. The fund does not engage in speculative futures transactions.

In order to determine the expected long-term rate of return for the U.S. plan assets, the company used actuarial and statistical methods to estimate the likely results over a 20-year time horizon. The analysis was based on historical equity market returns during the period from 1926 to 2002. Management selected a rate of return within the likely range reflecting a conservative view of future expected returns.

Funding Expectation for 2004

No further contributions are required during 2004 under applicable law for the U.S. Pension Plan. The company intends to make voluntary contributions so that assets exceed the Accumulated Benefit Obligation at the end of the year. Employer contributions to the Postretirement Medical Benefits Plan are expected to be approximately $4 million during 2004.

Note 14: Business Combinations and Divestitures

All of the company's qualifying business combinations have been accounted for using the purchase method of accounting. Consideration includes the cash paid and the value of any stock issued and options assumed, less any cash acquired, and excludes contingent employee compensation payable in cash and any debt assumed. The company accounts for the intrinsic value of stock options assumed related to future services as unearned compensation within stockholders' equity (see "Note 18: Acquisition-Related Unearned Stock Compensation").

During 2003, the company completed one acquisition qualifying as a business combination in exchange for total cash consideration of approximately $21 million. There were no acquisitions qualifying as business combinations in 2002. The acquisitions in 2001 were entered into primarily to expand Intel's optical, wired Ethernet, wireless connectivity and telecommunications capabilities. The operating results of all of the significant businesses acquired in 2003 and 2001 have been included in the results of the Intel Communications Group (ICG) operating segment from the date of acquisition.

The following table summarizes the company's business combinations completed in 2001:

(In Millions)	Consideration	Purchased In-Process Research & Development	Goodwill	Identified Intangibles	Form of Consideration
Xircom, Inc.	$ 517	$ 53	$ 336	$ 154	Cash and options assumed
VxTel Inc.	$ 381	$ 68	$ 277	$ —	Cash and options assumed
Cognet, Inc.	$ 156	$ 9	$ 93	$ 20	Cash, common stock and options assumed
LightLogic, Inc.	$ 409	$ 46	$ 295	$ 9	Common stock and options assumed
Other	$ 228	$ 22	$ 153	$ —	Cash, common stock and options assumed

Other business combinations in the above summary represent seven business combination transactions in 2001 that were not individually significant.

Purchase consideration for acquisitions in 2001 included 21.0 million unregistered shares of Intel common stock. Of these shares, 5.2 million were contingent upon the continued employment of certain employees and/or meeting performance criteria, and approximately 4.8 million of the contingent shares have subsequently been issued. An additional 900,000 registered shares were issuable to certain employees contingent upon meeting certain performance criteria. Of these shares, approximately 700,000 were subsequently issued, and approximately 200,000 were forfeited, as certain milestones had not been met. For consideration payable in shares that is contingent on employment, the value is included in purchase consideration. Although included in the total consideration disclosed, the fair value of such stock compensation is allocated to unearned stock compensation (see Note 18: "Acquisition-Related Unearned Stock Compensation") and is not included in the allocation of purchase price to assets acquired. For the 2001 acquisitions, $224 million in cash compensation was contingent upon the continued employment of certain employees and/or meeting performance criteria and was not included in purchase consideration. Of this amount, approximately $168 million was paid and approximately $11 million was forfeited. Of the $45 million in cash compensation remaining to be paid, approximately $13 million was not yet earned and thus not reflected in the company's balance sheet as of December 27, 2003.

During 2003, the company recognized approximately $758 million in tax benefits related to sales of the stock of certain previously acquired companies, primarily DSP Communications, Inc. (DSP), Dialogic Corporation and Xircom. A net benefit of approximately $420 million was recognized during the fourth quarter of 2003 on the divestiture of a portion of the intellectual property assets of DSP, through the sale of the stock of DSP. Also during the fourth quarter of 2003, a benefit of approximately $200 million was recognized on the divestiture of a portion of the assets, primarily real estate, of Dialogic, through the sale of the stock of Dialogic. A benefit of approximately $125 million was recognized earlier in the year related to the sale of a wireless WAN business, through the sale of the stock of Xircom. The pre-tax losses on these sales for financial statement or book purposes were not significant. The company was able to recognize tax losses because the tax basis in the entities exceeded the book basis, as the goodwill allocated to the transactions for financial statement purposes was less than the amount the company could effectively deduct for tax purposes. During 2002, the company recognized a $75 million tax benefit related to sales of the stock of certain previously acquired companies, primarily Ziatech Corporation.

During 2002, Intel wrote off acquisition-related identified intangibles of $127 million, related to a portion of the developed technology acquired with the Xircom acquisition and the acquisition of Trillium Digital Systems, Inc. The impaired developed technology of Xircom primarily related to PC Ethernet cards, whose forecasted revenue declined significantly as the market moved to LAN-on-motherboard technology. The impaired developed technology of Trillium related primarily to a change in the product roadmap for telephony operating-systems software that resulted in a significant decline in forecasted revenue for that technology. The amount of the impairments was determined using a fair-value approach based on discounted future cash flows. In 2001, Intel wrote off acquisition-related identified intangibles of $26 million and goodwill of $98 million, related to acquisitions made prior to 2000.

For 2003, $5 million was allocated to purchased in-process research and development (IPR&D) and expensed at the time of the acquisition ($198 million for 2001), because the technological feasibility of products under development had not been established and no future alternative uses existed. The fair value of the IPR&D was determined using the income approach, which discounts expected future cash flows from projects under development to their net present value. Each project was analyzed to determine the technological innovations included; the utilization of core technology; the complexity, cost and time to complete development; any alternative future use or current technological feasibility; and the stage of completion. Future cash flows were estimated, taking into account the expected life cycles of the products and the underlying technology, relevant market sizes and industry trends. The company determined a discount rate for each project based on the relative risks inherent in the project's development horizon, the estimated costs of development, and the level of technological change in the project and the industry, among other factors.

Note 15: Acquisition of Development-Stage Operations

An acquisition of a development-stage operation does not qualify as a business combination under SFAS No. 141, "Business Combinations," and purchase consideration for such an acquisition is not allocated to goodwill. Workforce-in-place does qualify as an identified intangible asset for an acquisition of a development-stage operation.

During 2003, the company acquired a development-stage operation in exchange for total cash consideration of approximately $40 million, all of which was allocated to workforce-in-place. During 2002, the company acquired three development-stage operations in exchange for total consideration of approximately $57 million, with approximately $35 million allocated to acquisition-related developed technology and $20 million to IPR&D, with the remaining amount representing the value of net tangible assets. The operating results of each of these acquisitions since the date of acquisition have been included in the operating results of the acquiring business unit within either the ICG operating segment or the "all other" category, as appropriate, for segment reporting purposes.

Note 16: Goodwill

Goodwill by operating segment was adjusted for the years ended December 28, 2002 and December 27, 2003, as follows:

(In Millions)	Intel Communications Group	Intel Architecture Business	Wireless Communications and Computing Group	All Other	Total
December 29, 2001	**$ 3,653**	**$ 68**	**$ 603**	**$ 6**	**$ 4,330**
Workforce-in-place reclassified, net of deferred tax	12	—	8	—	20
Other adjustments	(21)	1	—	—	(20)
December 28, 2002	**3,644**	**69**	**611**	**6**	**4,330**
Impairments	—	—	(611)	(6)	(617)
Additions	3	—	—	—	3
Other adjustments	(9)	(2)	—	—	(11)
December 27, 2003	**$ 3,638**	**$ 67**	**$ —**	**$ —**	**$ 3,705**

During the fourth quarter of 2003, the company completed its annual impairment review for goodwill and found indicators of impairment for the Wireless Communications and Computing Group (WCCG) reporting unit. The WCCG business, comprised primarily of flash memory products and cellular baseband chipsets, has not performed as management had expected. In the fourth quarter of 2003, it became apparent that WCCG was now expected to grow more slowly than previously projected. A slower-than-expected rollout of products and slower-than-expected customer acceptance of our products in the baseband chipset business, as well as a delay in the transition to next-generation phone networks, have pushed out the forecasts for sales into high-end data cell phones. These factors resulted in lower growth expectations for the reporting unit and triggered the goodwill impairment. The impairment review requires a two-step process. The first step of the review compares the fair value of the reporting units with substantial goodwill against their aggregate carrying values, including goodwill. The company estimated the fair value of the WCCG and ICG reporting units using the income method of valuation, which includes the use of estimated discounted cash flows. Based on the comparison, the carrying value of the WCCG reporting unit exceeded the fair value. Accordingly, the company performed the second step of the test, comparing the implied fair value of the WCCG reporting unit's goodwill with the carrying amount of that goodwill. Based on this assessment, the company recorded a non-cash impairment charge of $611 million, which is included as a component of operating income in the "all other" category for segment reporting purposes.

Also during 2003, the goodwill related to one of the company's seed businesses, included in the "all other" category, was impaired. Seed businesses are businesses that support the company's strategic initiatives. In addition, goodwill in the ICG operating segment decreased, primarily as a result of goodwill allocated to divestitures on a fair value basis in 2003. During 2003, the company recorded goodwill of $3 million in connection with a qualifying business combination. In 2002, no goodwill was recorded or impaired.

Upon adoption of SFAS No. 141, workforce-in-place no longer meets the definition of an identifiable intangible asset in acquisitions qualifying as business combinations. As a result, as of the beginning of 2002, the net book value of the company's workforce-in-place of $39 million, along with associated deferred tax liabilities of $19 million, was reclassified to goodwill (see "Goodwill" under "Note 2: Accounting Policies").

Note 17: Identified Intangible Assets

Identified intangible assets acquired during 2003 and 2002 are summarized as follows:

	2003		2002	
(In Millions)	Value	Weighted Average Life	Value	Weighted Average Life
Acquisition-related developed technology	$ 14	4	$ 35	2
Other acquisition-related intangibles	40	2	—	—
Intellectual property assets	96	5	317	7
Total identified intangible assets	**$ 150**		**$ 352**	

Of the intellectual property assets acquired in 2002, $295 million represented the value of assets capitalized as a result of payments under the settlement agreement with Intergraph Corporation related to the lawsuits in Alabama and Texas (see "Note 21: Contingencies"). The value of the Intergraph assets and the amount of the charge to cost of sales in 2002 were derived from the historical and expected future revenue from sales of the relevant microprocessors.

Identified intangible assets as of December 27, 2003 consisted of the following:

(In Millions)	Gross Assets	Accumulated Amortization	Net
Acquisition-related developed technology	$ 994	$ (772)	$ 222
Other acquisition-related intangibles	94	(49)	45
Intellectual property assets	604	(212)	392
Total identified intangible assets	**$ 1,692**	**$ (1,033)**	**$ 659**

Identified intangible assets as of December 28, 2002 consisted of the following:

(In Millions)	Gross Assets	Accumulated Amortization	Net
Acquisition-related developed technology	$ 1,125	$ (727)	$ 398
Other acquisition-related intangibles	74	(52)	22
Intellectual property assets	750	(336)	414
Total identified intangible assets	**$ 1,949**	**$ (1,115)**	**$ 834**

Amortization of acquisition-related intangibles and costs included the following:

(In Millions)	2003	2002	2001
Amortization of acquisition-related intangibles	$ 203	$ 246	$ 347
Impairment of acquisition-related intangibles	—	127	26
Amortization of acquisition-related unearned stock compensation	39	90	174
Other acquisition-related costs	59	85	81
Total	**$ 301**	**$ 548**	**$ 628**

Acquisition-related intangible impairments of $127 million in 2002 represented write-offs of developed technology and other acquisition-related intangibles primarily related to the previous acquisitions of Xircom and Trillium (see "Note 14: Business Combinations and Divestitures"). Other acquisition-related costs include the amortization of deferred cash payments that represent contingent compensation to employees related to previous acquisitions. The compensation is being recognized over the period earned. All amortization of acquisition-related intangibles and costs, including impairments, is included in "all other" for segment reporting purposes.

Amortization of intellectual property assets was $118 million in 2003 ($120 million in 2002 and $89 million in 2001). The amortization of an intellectual property asset is generally included in either cost of sales or research and development.

Based on the carrying value of identified intangible assets recorded at December 27, 2003, and assuming no subsequent impairment of the underlying assets, the annual amortization expense, excluding acquisition-related stock compensation and other acquisition-related costs, is expected to be as follows:

(In Millions)	2004	2005	2006	2007	2008
Acquisition-related intangibles	$ 143	$ 102	$ 21	$ 1	$ —
Intellectual property assets	$ 104	$ 86	$ 73	$ 41	$ 32

Note 18: Acquisition-Related Unearned Stock Compensation

The company records acquisition-related purchase consideration as unearned stock-based compensation in accordance with FASB Interpretation No. 44, "Accounting for Certain Transactions Involving Stock Compensation." During 2003 and 2002, the company recorded no such unearned stock-based compensation. Acquisition-related unearned stock compensation includes the portion of the purchase consideration related to shares issued contingent upon the continued employment of selected employee stockholders and/or the completion of specified milestones. The unearned stock-based compensation also includes the intrinsic value of stock options assumed in connection with business combinations that is earned as the employees provide future services. The compensation is being recognized over the period earned, and the expense is included in the amortization of acquisition-related intangibles and costs. Amortization of unearned stock compensation was $39 million for 2003 ($90 million for 2002 and $174 million for 2001). For 2003, unearned stock compensation in the statement of stockholders' equity was reduced by $4 million related to various adjustments ($12 million in 2002) and in 2002 was additionally reduced by $13 million related to net losses on sales of businesses that were included in operating income.

Note 19: Impairment of Long-Lived Assets

During 2003, the company had substantially completed the wind-down of its Intel® Online Services web hosting business. The company has recognized a related $131 million pre-tax charge in cost of sales, of which $106 million was recorded in 2002, and the remainder was recorded in the first half of 2003 due to an increase in the estimate of assets that will no longer be utilized. Approximately $123 million of the charge related to the impairment of the web hosting business' assets, including leasehold improvements and server equipment. The amount of the impairment was determined based on discounted future cash flows and comparable market prices. The remaining $8 million represented the accrual of lease and other exit-related costs. The total charge was reflected in the "all other" category for segment reporting purposes. For both 2003 and 2002, the operating results of this business were not significant to the results of the company.

Note 20: Commitments

The company leases a portion of its capital equipment and certain of its facilities under operating leases that expire at various dates through 2026. Rental expense was $149 million in 2003, $163 million in 2002 and $182 million in 2001. Minimum rental commitments under all non-cancelable leases with an initial term in excess of one year are payable as follows: 2004—$101 million; 2005—$83 million; 2006—$52 million; 2007—$35 million; 2008—$29 million; 2009 and beyond—$203 million. Commitments for construction or purchase of property, plant and equipment approximated $1.5 billion at December 27, 2003. Other commitments as of December 27, 2003 totaled $317 million. Other commitments included payments due under various types of licenses, and non-contingent joint funding obligations, such as co-marketing and co-development initiatives.

Note 21: Contingencies

Tax Matters

In August 2003, in connection with the IRS's regular examination of Intel's tax returns for the years 1999 and 2000, the IRS proposed certain adjustments to the amounts reflected by Intel on these returns as a tax benefit for its export sales. If the IRS issues formal assessments consistent with the notices and ultimately prevails in its position, Intel's federal income tax due for these years would increase by approximately $600 million, plus interest. The IRS may make similar claims for years subsequent to 2000 in future audits.

Intel disputes the proposed adjustments and intends to pursue this matter through applicable IRS and judicial procedures, as appropriate. Although the final resolution of the proposed adjustments is uncertain, based on currently available information, management believes that the ultimate outcome will not have a material adverse effect on the company's financial position, cash flows or overall trends in results of operations. In the event of an unfavorable resolution, there exists the possibility of a material adverse impact on the results of operations of the period in which the matter is ultimately resolved, or an unfavorable outcome becomes probable and reasonably estimable.

Legal Proceedings

In 1997, Intergraph Corporation filed suit in Federal District Court in Alabama, generally alleging, among other claims, that Intel infringed certain Intergraph patents. In August 2001, Intergraph filed a second suit in the U.S. District Court for the Eastern District of Texas, alleging that the Intel® Itanium® processor infringes two Intergraph microprocessor-related patents, and seeking an injunction and unspecified damages. In April 2002, Intel and Intergraph announced that they entered into a settlement agreement, pursuant to which they agreed to settle the Alabama lawsuit and dismiss it with prejudice. Pursuant to the settlement agreement, Intel made a cash payment of $300 million to Intergraph and in return received a license under all Intergraph patents, excluding the patents at issue in the Texas case. Intel recorded $155 million of the payment as a charge in 2002. The remaining $145 million represented the value of the license received and was capitalized as an intangible asset (see "Note 17: Identified Intangible Assets").

Under the settlement agreement, the Texas case would proceed to trial. If the patents in the Texas case were found to be infringed, not invalid and enforceable, Intel would pay Intergraph $150 million within 30 days of the entry of a final judgment. If Intergraph prevailed on either patent on appeal, the settlement agreement provides that Intel would pay Intergraph an additional $100 million and would receive a license for the patents at issue in the case.

In October 2002, the Texas District Court ruled that Intel infringed both patents at issue in that case. Pursuant to the settlement agreement, Intel paid Intergraph $150 million. Intel then appealed the trial court's decision. In February 2004, the Court of Appeals for the Federal Circuit found that the District Court erred in construing a claim term, revised the claim construction, vacated the District Court ruling and remanded the case to the District Court to determine in the first instance whether the Intel Itanium processor infringes the patents. Intel is currently evaluating the impact that the Court of Appeals' opinion has on the 2002 settlement agreement.

In December 2002, Intergraph filed suit in the Eastern District of Texas against Dell Inc., Gateway Inc. and Hewlett-Packard Company, alleging infringement of three of Intergraph's patents. These three patents are a subset of the patents that were the subject of a now settled lawsuit that Intergraph had filed against Intel in Alabama. In May 2003, Dell filed its answer and counterclaim and named Intel as well as Intergraph in a counterclaim for declaratory judgment. None of the other defendants have named Intel as a counter-defendant. The claim against Intel does not seek any monetary or other specific relief. Rather, Dell seeks a judicial interpretation of the April 2002 settlement and license agreement between Intel and Intergraph insofar as that agreement relates to any express and implied licenses and patent exhaustion defenses Dell has raised to defend the Intergraph claims. Dell has also issued a request for indemnity from Intel for any damages awarded against Dell, although this issue has not been made an element of the pending litigation. Intel intends to participate vigorously in the defense of all relevant claims.

In May 2000, various plaintiffs filed a class-action lawsuit in the U.S. District Court for the Northern District of California, alleging violations of the Securities Exchange Act of 1934 (Exchange Act) and Rule 14d-10 of the Exchange Act in connection with Intel's acquisition of DSP Communications, Inc. The complaint alleged that Intel and CWC (Intel's wholly owned subsidiary at the time) agreed to pay certain DSP executives additional consideration of $15.6 million not offered or paid to other stockholders. The alleged purpose of this payment to the insiders was to obtain DSP insiders' endorsement of Intel's tender offer in violation of the anti-discrimination provision of Section 14(d)(7) and Rule 14d-10. The plaintiffs sought unspecified damages for the class, and unspecified costs and expenses. In July 2002, the District Court granted Intel's motion for summary judgment, but in October 2002, the District Court vacated the summary judgment. In January 2003, the parties reached a settlement agreement, which was reviewed and approved by the court in June 2003. The settlement did not have a material impact on the company's results of operations or financial condition.

In September 2001, VIA Technologies, Inc. and Centaur Technology, Inc. sued Intel in the U.S. District Court for the Western District of Texas, alleging that the Intel® Pentium® 4 processor infringes a VIA microprocessor-related patent. In October 2001, Intel filed counterclaims against VIA, asserting that VIA's C3* microprocessors infringe Intel patents. In January 2002, VIA amended its complaint to allege that Intel's Pentium® II, Pentium® III, Celeron® and Pentium 4 processors infringe another patent. In August 2002, Intel added an additional claim that VIA's C3 microprocessors infringe an additional Intel patent, and VIA added an additional claim that Intel's Pentium III and Pentium 4 processors infringe another VIA patent. In April 2003, the parties entered into a settlement agreement, pursuant to which they agreed to dismiss with prejudice the claims and counterclaims in this lawsuit, and to dismiss all other pending legal claims between them in all jurisdictions. The confidential settlement agreement includes a patent cross-license agreement covering certain of each company's products, subject to certain terms and limitations. The settlement agreement did not have a material impact on the company's results of operations or financial condition.

In 2001, various plaintiffs filed five class-action lawsuits against Intel alleging violations of the Securities Exchange Act of 1934. These complaints were consolidated in an amended complaint filed in the U.S. District Court for the Northern District of California. The lawsuit alleged that purchasers of Intel stock between July 19, 2000 and September 29, 2000 were misled by false and misleading statements by Intel and certain of its officers and directors concerning the company's business and financial condition. In July 2003, the court granted Intel's motion to dismiss the plaintiffs' second amended complaint in its entirety with prejudice, and the plaintiffs did not appeal the court's dismissal of the suit.

In addition, various plaintiffs filed stockholder derivative complaints in California Superior Court and Delaware Chancery Court against the company's directors and certain officers, alleging that they mismanaged the company and otherwise breached their fiduciary obligations to the company. The plaintiffs in the California action filed the original and two successive amended complaints, and the California Superior Court sustained Intel's demurrers on each of these complaints. Following the court's dismissal without prejudice of these complaints, the plaintiffs notified the court and Intel in June 2003 that they would not file a fourth complaint, and they signed a stipulation withdrawing their lawsuit with prejudice, which the court approved. In December 2003, the plaintiffs in the Delaware action withdrew their complaint, and the case was dismissed with prejudice.

In June 2002, various plaintiffs filed a lawsuit in the Third Judicial Circuit Court, Madison County, Illinois, against Intel, Hewlett-Packard Company, HPDirect, Inc. and Gateway Inc., alleging that the defendants' advertisements and statements misled the public by suppressing and concealing the alleged material fact that systems that use the Intel Pentium 4 processor are less powerful and slower than systems using the Intel Pentium III processor and a competitor's processors. The plaintiffs claim that their lawsuit should be treated as a nationwide class action. The plaintiffs seek unspecified damages, and attorneys' fees and costs. The company disputes the plaintiffs' claims and intends to defend the lawsuit vigorously.

The company is currently a party to various claims and legal proceedings, including those noted above. If management believes that a loss arising from these matters is probable and can reasonably be estimated, the company records the amount of the loss, or the minimum estimated liability when the loss is estimated using a range, and no point within the range is more probable than another. As additional information becomes available, any potential liability related to these matters is assessed and the estimates are revised, if necessary. Based on currently available information, management believes that the ultimate outcome of these matters, individually and in the aggregate, will not have a material adverse effect on the company's financial position or overall trends in results of operations. However, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. An unfavorable ruling could include monetary damages or an injunction prohibiting Intel from selling one or more products. If an unfavorable ruling were to occur, there exists the possibility of a material adverse impact on the results of operations of the period in which the ruling occurs, or future periods.

Intel has been named to the California and U.S. Superfund lists for three of its sites and has completed, along with two other companies, a Remedial Investigation/Feasibility study with the U.S. Environmental Protection Agency (EPA) to evaluate the groundwater in areas adjacent to one of its former sites. The EPA has issued a Record of Decision with respect to a groundwater cleanup plan at that site, including expected costs to complete. Under the California and U.S. Superfund statutes, liability for cleanup of this site and the adjacent area is joint and several. The company, however, has reached agreement with those same two companies which significantly limits the company's liabilities under the proposed cleanup plan. Also, the company has completed extensive studies at its other sites and is engaged in cleanup at several of these sites. In the opinion of management, the potential losses to the company in excess of amounts already accrued arising out of these matters would not have a material adverse effect on the company's financial position or overall trends in results of operations, even if joint and several liability were to be assessed.

The estimate of the potential impact on the company's financial position or overall results of operations for the above legal and environmental proceedings could change in the future.

Note 22: Operating Segment and Geographic Information

The company designs, develops, manufactures and markets computing and communications products at various levels of integration. The company currently reports three product-line operating segments: the Intel Architecture business, which is composed of the Desktop Platforms Group, the Mobile Platforms Group and the Enterprise Platforms Group; the Intel Communications Group (ICG); and the Wireless Communications and Computing Group (WCCG). In December 2003, the company announced that it would be consolidating communications-related businesses within ICG and WCCG. This reorganization was not effective until fiscal 2004. Because this reporting period is as of December 27, 2003, the operating segment results for these communications-related businesses are presented under the organizational structure that existed as of December 27, 2003.

The company's Executive Office consists of Chief Executive Officer (CEO) Craig R. Barrett and President and Chief Operating Officer (COO) Paul S. Otellini. The CEO and COO have joint responsibility as the Chief Operating Decision Maker (CODM), as defined by SFAS No. 131, "Disclosures about Segments of an Enterprise and Related Information." The CODM allocates resources to and assesses the performance of each operating segment using information about their revenue and operating profit before interest and taxes.

The Intel Architecture operating segment's products include microprocessors and related chipsets and motherboards. Net revenue for the Intel Architecture operating segment made up approximately 87% of the company's consolidated net revenue in 2003 (83% in 2002 and 81% in 2001). Revenue from sales of microprocessors within the Intel Architecture operating segment represented 73% of consolidated net revenue in 2003 (70% in 2002 and 67% in 2001). ICG's products include wired Ethernet and wireless connectivity products, network processing components and embedded computing products. WCCG's products include flash memory, application processors, and cellular baseband chipsets for cellular handsets and handheld devices. The company's products in all operating segments are sold directly to original equipment manufacturers, and through retail and industrial distributors as well as reseller channels throughout the world.

In addition to these operating segments, the company has sales and marketing, manufacturing, finance and administration groups. Expenses of these groups are allocated to the operating segments and are included in the operating results reported below.

The "all other" category includes acquisition-related costs, including amortization of acquisition-related intangibles and charges for purchased in-process research and development. In 2003, acquisition-related costs also included a goodwill impairment charge of $611 million taken in the fourth quarter for the remaining goodwill balance related to WCCG, and in 2002 included a $127 million impairment of acquisition-related identified intangibles related to prior-year acquisitions. "All other" also includes the results of operations of seed businesses that support the company's initiatives, and the results for 2002 included a charge of $106 million related to the wind-down of the Intel Online Services web hosting business. Finally, "all other" includes certain corporate-level operating expenses, including a portion of profit-dependent bonus and other expenses not allocated to the operating segments. For 2001, "all other" also included goodwill amortization; however, beginning in 2002, goodwill is no longer amortized.

The company does not identify or allocate assets by operating segment, and does not allocate depreciation as such to the operating segments, nor does the CODM evaluate operating segments on these criteria. Operating segments do not record intersegment revenue, and, accordingly, there is none to be reported. The company does not allocate interest and other income, interest expense or taxes to operating segments. Except as discussed above, the accounting policies for segment reporting are the same as for the company as a whole.

Net revenue and operating income or loss for reportable segments for the three years ended December 27, 2003 were as follows:

(In Millions)	2003	2002	2001
Intel Architecture Business			
Net revenue	$26,102	$22,316	$21,446
Operating income	$10,411	$ 6,592	$ 6,277
Intel Communications Group			
Net revenue	$ 2,147	$ 2,080	$ 2,580
Operating loss	$ (426)	$ (622)	$ (735)
Wireless Communications and Computing Group			
Net revenue	$ 1,857	$ 2,239	$ 2,232
Operating loss	$ (432)	$ (287)	$ (249)
All Other			
Net revenue	$ 35	$ 129	$ 281
Operating loss	$ (2,020)	$ (1,301)	$ (3,037)
Total			
Net revenue	$30,141	$26,764	$26,539
Operating income	$ 7,533	$ 4,382	$ 2,256

In 2003, one customer accounted for approximately 19% of the company's revenue (16% in 2002) while another customer accounted for approximately 15% in both 2003 and 2002. These customers each accounted for approximately 14% of the company's revenue in 2001. A substantial majority of the sales to these customers were Intel Architecture business products.

Geographic revenue information for the three years ended December 27, 2003 is based on the location of the customer. Property, plant and equipment information is based on the physical location of the assets at the end of each of the fiscal years.

Revenue from unaffiliated customers by geographic region/country was as follows:

(In Millions)	2003	2002	2001
United States	$ 7,644	$ 7,698	$ 8,233
Other Americas†	759	950	1,149
	8,403	8,648	9,382
Taiwan†	4,405	2,854	2,531
China†	3,679	3,199	2,333
Other Asia-Pacific†	4,077	4,020	3,444
	12,161	10,073	8,308
Europe†	6,868	6,139	6,500
Japan†	2,709	1,904	2,349
Total revenue	**$30,141**	**$26,764**	**$26,539**

† *Revenue from unaffiliated customers outside the U.S. totaled $22,497 million ($19,066 million in 2002 and $18,306 million in 2001).*

Net property, plant and equipment by country was as follows:

(In Millions)	2003	2002
United States	$12,483	$14,518
Ireland	2,392	1,405
Other countries	1,786	1,924
Total property, plant and equipment, net	**$16,661**	**$17,847**

REPORT OF ERNST & YOUNG LLP, INDEPENDENT AUDITORS

The Board of Directors and Stockholders, Intel Corporation

We have audited the accompanying consolidated balance sheets of Intel Corporation as of December 27, 2003 and December 28, 2002, and the related consolidated statements of income, stockholders' equity, and cash flows for each of the three years in the period ended December 27, 2003. Our audits also included the financial statement schedule listed in the Index at Item 15(a). These financial statements and schedule are the responsibility of the company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Intel Corporation at December 27, 2003 and December 28, 2002, and the consolidated results of their operations and their cash flows for each of the three years in the period ended December 27, 2003, in conformity with accounting principles generally accepted in the United States. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

As discussed in Note 2 to the consolidated financial statements, effective December 30, 2001, the company adopted Statement of Financial Accounting Standards No. 142, "Goodwill and Other Intangible Assets."

Ernst & Young LLP

San Jose, California
January 13, 2004

INTEL CORPORATION
FINANCIAL INFORMATION BY QUARTER (UNAUDITED)

(In Millions—Except Per Share Amounts) 2003 For Quarter Ended	December 27	September 27	June 28	March 29
Net revenue	$ 8,741	$ 7,833	$ 6,816	$ 6,751
Gross margin	$ 5,556	$ 4,558	$ 3,468	$ 3,512
Impairment of goodwill	$ 611	$ —	$ 6	$ —
Amortization of acquisition-related intangibles and costs	$ 65	$ 68	$ 84	$ 84
Purchased in-process research and development	$ —	$ 5	$ —	$ —
Net income[1]	$ 2,173	$ 1,657	$ 896	$ 915
Basic earnings per share[1]	$ 0.33	$ 0.25	$ 0.14	$ 0.14
Diluted earnings per share[1]	$ 0.33	$ 0.25	$ 0.14	$ 0.14
Dividends per share				
Declared	$ —	$ 0.04	$ —	$ 0.04
Paid	$ 0.02	$ 0.02	$ 0.02	$ 0.02
Market price range common stock[2]				
High	$ 34.12	$ 29.18	$ 22.14	$ 18.90
Low	$ 27.52	$ 20.81	$ 16.28	$ 15.05

(In Millions—Except Per Share Amounts) 2002 For Quarter Ended	December 28	September 28	June 29	March 30
Net revenue	$ 7,160	$ 6,504	$ 6,319	$ 6,781
Gross margin	$ 3,696	$ 3,173	$ 2,969	$ 3,480
Amortization and impairment of acquisition-related intangibles and costs	$ 106	$ 102	$ 229	$ 111
Purchased in-process research and development	$ —	$ 6	$ 14	$ —
Net income	$ 1,049	$ 686	$ 446	$ 936
Basic earnings per share	$ 0.16	$ 0.10	$ 0.07	$ 0.14
Diluted earnings per share	$ 0.16	$ 0.10	$ 0.07	$ 0.14
Dividends per share				
Declared	$ —	$ 0.04	$ —	$ 0.04
Paid	$ 0.02	$ 0.02	$ 0.02	$ 0.02
Market price range common stock[2]				
High	$ 21.05	$ 19.59	$ 31.20	$ 35.79
Low	$ 13.22	$ 14.13	$ 18.27	$ 28.55

[1] *Net income for the quarter ended December 27, 2003 included $620 million in tax benefits related to divestitures, increasing both basic and diluted earnings per share by $0.09.*

[2] *Intel's common stock (symbol INTC) trades on The NASDAQ Stock Market* and is quoted in the* Wall Street Journal *and other newspapers. Intel's common stock also trades on The Swiss Exchange. At December 27, 2003, there were approximately 236,000 registered holders of common stock. All stock prices are closing prices per The NASDAQ Stock Market.*

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Controls Evaluation and Related CEO and CFO Certifications

We conducted an evaluation of the effectiveness of the design and operation of our "disclosure controls and procedures" (Disclosure Controls) as of the end of the period covered by this Annual Report. The controls evaluation was done under the supervision and with the participation of management, including our Chief Executive Officer (CEO) and Chief Financial Officer (CFO).

Attached as exhibits to this Annual Report are certifications of the CEO and the CFO, which are required in accordance with Rule 13a-14 of the Exchange Act. This "Controls and Procedures" section includes the information concerning the controls evaluation referred to in the certifications, and it should be read in conjunction with the certifications for a more complete understanding of the topics presented.

Definition of Disclosure Controls

Disclosure Controls are controls and procedures designed to reasonably assure that information required to be disclosed in our reports filed under the Exchange Act, such as this Annual Report, is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms. Disclosure Controls are also designed to reasonably assure that such information is accumulated and communicated to our management, including the CEO and CFO, as appropriate to allow timely decisions regarding required disclosure. Our Disclosure Controls include components of our internal control over financial reporting, which consists of control processes designed to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements in accordance with generally accepted accounting principles in the U.S. To the extent that components of our internal control over financial reporting are included within our Disclosure Controls, they are included in the scope of our quarterly controls evaluation.

Limitations on the Effectiveness of Controls

The company's management, including the CEO and CFO, does not expect that our Disclosure Controls or our internal control over financial reporting will prevent all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based in part on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Scope of the Controls Evaluation

The evaluation of our Disclosure Controls included a review of the controls' objectives and design, the company's implementation of the controls and the effect of the controls on the information generated for use in this Annual Report. In the course of the controls evaluation, we sought to identify data errors, control problems or acts of fraud and confirm that appropriate corrective action, including process improvements, were being undertaken. This type of evaluation is performed on a quarterly basis so that the conclusions of management, including the CEO and CFO, concerning the effectiveness of the controls can be reported in our Quarterly Reports on Form 10-Q and to supplement our disclosures made in our Annual Report on Form 10-K. Many of the components of our Disclosure Controls are also evaluated on an ongoing basis by our Internal Audit Department and by other personnel in our Finance organization, as well as our independent auditors who evaluate them in connection with determining their auditing procedures related

to their report on our annual financial statements and not to provide assurance on our controls. The overall goals of these various evaluation activities are to monitor our Disclosure Controls, and to modify them as necessary. Our intent is to maintain the Disclosure Controls as dynamic systems that change as conditions warrant.

Among other matters, we also considered whether our evaluation identified any "significant deficiencies" or "material weaknesses" in our internal control over financial reporting, and whether the company had identified any acts of fraud involving personnel with a significant role in our internal control over financial reporting. This information was important both for the controls evaluation generally, and because item 5 in the certifications of the CEO and CFO requires that the CEO and CFO disclose that information to our Board's Audit Committee and to our independent auditors. In the professional auditing literature, "significant deficiencies" are referred to as "reportable conditions," which are deficiencies in the design or operation of controls that could adversely affect our ability to record, process, summarize and report financial data in the financial statements. Auditing literature defines "material weakness" as a particularly serious reportable condition in which the internal control does not reduce to a relatively low level the risk that misstatements caused by error or fraud may occur in amounts that would be material in relation to the financial statements and the risk that such misstatements would not be detected within a timely period by employees in the normal course of performing their assigned functions. We also sought to address other controls matters in the controls evaluation, and in each case if a problem was identified, we considered what revision, improvement and/or correction to make in accordance with our ongoing procedures.

Conclusions

Based upon the controls evaluation, our CEO and CFO have concluded that, subject to the limitations noted above, as of the end of the period covered by this Annual Report, our Disclosure Controls were effective to provide reasonable assurance that material information relating to Intel and its consolidated subsidiaries is made known to management, including the CEO and CFO, particularly during the period when our periodic reports are being prepared.

PART III

ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The information regarding Directors and Executive Officers appearing under the headings "Proposal 1: Election of Directors" and "Other Matters—Section 16(a) Beneficial Ownership Reporting Compliance" of our 2004 Proxy Statement is incorporated by reference in this section. The information under the heading "Executive Officers of the Registrant" in Item 1 of this Form 10-K is also incorporated by reference in this section. In addition, the information included under the heading "Corporate Governance" in Item 1 of this Form 10-K identifying the financial expert who serves on the Audit Committee of our Board of Directors is incorporated by reference in this section.

Intel has, for many years, maintained a set of Corporate Business Principles which incorporate our code of ethics applicable to all employees, including all officers, and including our independent directors, who are not employees of the company, with regard to their Intel-related activities. The Corporate Business Principles incorporate our guidelines designed to deter wrongdoing and to promote honest and ethical conduct and compliance with applicable laws and regulations. They also incorporate our expectations of our employees that enable us to provide accurate and timely disclosure in our filings with the Securities and Exchange Commission and other public communications. In addition, they incorporate Intel guidelines pertaining to topics such as environmental, health and safety compliance; diversity and non-discrimination; supplier expectations; privacy; and business continuity.

The full text of our Corporate Business Principles is published on our Investor Relations web site at *www.intc.com*. We intend to disclose future amendments to certain provisions of our Corporate Business Principles, or waivers of such provisions granted to executive officers and directors, on this web site within five business days following the date of such amendment or waiver.

ITEM 11. EXECUTIVE COMPENSATION

The information appearing under the headings "Directors' Compensation," "Employment Contracts and Change of Control Arrangements," "Report of the Compensation Committee on Executive Compensation," "Stock Price Performance Graph" and "Executive Compensation" of the 2004 Proxy Statement is incorporated by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information appearing in our 2004 Proxy Statement under the heading "Security Ownership of Certain Beneficial Owners and Management" is incorporated by reference.

See the information contained under the heading "Employee Stock Options" within Item 7 of this Form 10-K regarding shares authorized for issuance under equity compensation plans approved by stockholders and not approved by stockholders. For descriptions of our equity compensation plans, including the 1997 Stock Option Plan, which has not been approved by stockholders, see "Employee Stock Options" within Item 7 and "Note 12: Employee Stock Benefit Plans" in the "Notes to Consolidated Financial Statements" within Item 8 of this Form 10-K.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

The information appearing in our 2004 Proxy Statement under the heading "Certain Relationships and Related Transactions" is incorporated by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information appearing in our 2004 Proxy Statement under the headings "Report of the Audit Committee," "Ratification of Selection of Independent Auditors" and "Fees Paid to Ernst & Young" is incorporated by reference.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K

(a) 1. Financial Statements: See "Index to Consolidated Financial Statements" under Item 8 on page 51 of this Annual Report.

2. Financial Statement Schedule: See "Schedule II" on page 90 of this Annual Report.

3. Exhibits

The exhibits listed in the accompanying index to exhibits are filed or incorporated by reference as part of this Annual Report.

(b) Reports on Form 8-K

On October 14, 2003, Intel furnished a report on Form 8-K relating to financial information for Intel Corporation for the quarter ended September 27, 2003, and forward-looking statements relating to 2003 and the fourth quarter of 2003, as presented in a press release on October 14, 2003.

On December 4, 2003, Intel furnished a report on Form 8-K relating to an announcement regarding an update to forward-looking statements relating to 2003 and the fourth quarter of 2003, as presented in a press release on December 4, 2003.

On December 10, 2003, Intel furnished a report on Form 8-K relating to an announcement regarding a reorganization of certain business units as presented in a press release on December 10, 2003.

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**Other names and brands may be claimed as the property of others.*

INTEL CORPORATION
SCHEDULE II—VALUATION AND QUALIFYING ACCOUNTS

December 27, 2003, December 28, 2002 and December 29, 2001
(In Millions)

	Balance at Beginning of Year	Additions Charged to Costs and Expenses	Deductions†	Balance at End of Year
2003				
Allowance for doubtful receivables	$ 57	$ 14	$ 16	$ 55
2002				
Allowance for doubtful receivables	$ 68	$ 10	$ 21	$ 57
2001				
Allowance for doubtful receivables	$ 84	$ 5	$ 21	$ 68

† *Uncollectible accounts written off, net of recoveries.*

INDEX TO EXHIBITS

(Item 15(a))

	Description
3.1	Intel Corporation Second Restated Certificate of Incorporation dated March 13, 2003 (incorporated by reference to Exhibit 3.1 of Registrant's Form 10-Q for the quarter ended March 29, 2003 as filed on May 7, 2003).
3.2	Intel Corporation Bylaws as amended. On January 21, 2004, the Board of Directors approved an amendment to Intel's Bylaws to increase the number of authorized directors from 12 to 13. This temporary increase was necessary to elect Charlene Barshefsky to the Board of Directors. The Board's action in amending the Bylaws also provides that the number of authorized directors will decrease to 11 on May 19, 2004, when Charles E. Young reaches the mandatory retirement age for directors and as Winston H. Chen will not stand for reelection to the Board of Directors at the Annual Stockholders' Meeting scheduled for May 19, 2004.
4.1	Agreement to Provide Instruments Defining the Rights of Security Holders (incorporated by reference to Exhibit 4.1 of Registrant's Form 10-K as filed on March 18, 1986).
10.1**	Intel Corporation 1984 Stock Option Plan as amended and restated, effective July 16, 1997 (incorporated by reference to Exhibit 10.1 of Registrant's Form 10-Q for the quarter ended June 27, 1998 as filed on August 11, 1998).
10.2**	Intel Corporation 1988 Executive Long-Term Stock Option Plan as amended and restated, effective July 16, 1997 (incorporated by reference to Exhibit 10.2 of Registrant's Form 10-Q for the quarter ended June 27, 1998 as filed on August 11, 1998).
10.3**	Intel Corporation Sheltered Employee Retirement Plan Plus, as amended and restated, effective July 15, 1996 (incorporated by reference to Exhibit 4.1.1 of Registrant's Post-Effective Amendment No. 1 to Registration Statement on Form S-8 as filed on July 17, 1996).
10.4**	Special Deferred Compensation Plan (incorporated by reference to Exhibit 4.1 of Registrant's Registration Statement on Form S-8 as filed on February 2, 1998).
10.5**	Intel Corporation Deferral Plan for Outside Directors, effective July 1, 1998 (incorporated by reference to Exhibit 10.6 of the Registrant's Form 10-K as filed on March 26, 1999).
10.6	Intel Corporation 1997 Stock Option Plan, as amended and restated July 16, 1997 (incorporated by reference to Exhibit 10.7 of Registrant's Form 10-K as filed on March 11, 2003).
10.7	Intel Corporation Executive Officer Incentive Plan, as amended and restated effective January 1, 2004.
12.1	Statement Setting Forth the Computation of Ratios of Earnings to Fixed Charges.
21.1	Intel subsidiaries.
23.1	Consent of Ernst & Young LLP, Independent Auditors.
31.1	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a) of the Exchange Act.
31.2	Certification of Chief Financial Officer and Principal Accounting Officer Pursuant to Rule 13a-14(a) of the Exchange Act.
32.1	Certification of the Chief Executive Officer and Chief Financial Officer and Principal Accounting Officer Pursuant to Rule 13a-14(b) of the Exchange Act and 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

** *Compensation plans or arrangements in which directors and executive officers are eligible to participate.*

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

INTEL CORPORATION
Registrant

By: /s/ ANDY D. BRYANT
Andy D. Bryant
Executive Vice President, Chief Financial Officer
and Principal Accounting Officer
February 20, 2004

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

/s/ CRAIG R. BARRETT
Craig R. Barrett
Chief Executive Officer, Director and
Principal Executive Officer
February 20, 2004

/s/ CHARLENE BARSHEFSKY
Charlene Barshefsky
Director
February 20, 2004

/s/ JOHN P. BROWNE
John P. Browne
Director
February 20, 2004

/s/ ANDY D. BRYANT
Andy D. Bryant
Executive Vice President, Chief Financial Officer
and Principal Accounting Officer
February 20, 2004

/s/ WINSTON H. CHEN
Winston H. Chen
Director
February 20, 2004

/s/ ANDREW S. GROVE
Andrew S. Grove
Chairman of the Board and Director
February 20, 2004

/s/ D. JAMES GUZY
D. James Guzy
Director
February 20, 2004

/s/ REED E. HUNDT
Reed E. Hundt
Director
February 20, 2004

/s/ PAUL S. OTELLINI
Paul S. Otellini
President, Chief Operating Officer and Director
February 20, 2004

/s/ DAVID S. POTTRUCK
David S. Pottruck
Director
February 20, 2004

/s/ JANE E. SHAW
Jane E. Shaw
Director
February 20, 2004

/s/ JOHN L. THORNTON
John L. Thornton
Director
February 20, 2004

/s/ DAVID B. YOFFIE
David B. Yoffie
Director
February 20, 2004

/s/ CHARLES E. YOUNG
Charles E. Young
Director
February 20, 2004

Exhibit 31.1

The following certification includes references to an evaluation of the effectiveness of the design and operation of the company's "disclosure controls and procedures" and to certain matters related to the company's "internal control over financial reporting." Item 9A of Part II of this Annual Report presents the conclusions of the CEO and the CFO about the effectiveness of the company's disclosure controls and procedures based on and as of the date of such evaluation (relating to Item 4 of the certification), and contains additional information concerning disclosures to the company's Audit Committee and independent auditors with regard to deficiencies in internal control over financial reporting and fraud and related matters (Item 5 of the certification).

CERTIFICATION

I, Craig R. Barrett, certify that:

1. I have reviewed this annual report on Form 10-K of Intel Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects, the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 20, 2004

By: /s/ CRAIG R. BARRETT
Craig R. Barrett
Chief Executive Officer

Exhibit 31.2

The following certification includes references to an evaluation of the effectiveness of the design and operation of the company's "disclosure controls and procedures" and to certain matters related to the company's "internal control over financial reporting." Item 9A of Part II of this Annual Report presents the conclusions of the CEO and the CFO about the effectiveness of the company's disclosure controls and procedures based on and as of the date of such evaluation (relating to Item 4 of the certification), and contains additional information concerning disclosures to the company's Audit Committee and independent auditors with regard to deficiencies in internal control over financial reporting and fraud and related matters (Item 5 of the certification).

CERTIFICATION

I, Andy D. Bryant, certify that:

1. I have reviewed this annual report on Form 10-K of Intel Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects, the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 20, 2004

By: /s/ ANDY D. BRYANT
Andy D. Bryant
Executive Vice President, Chief Financial Officer
and Principal Accounting Officer

Exhibit 32.1

CERTIFICATION

Each of the undersigned hereby certifies, for the purposes of section 1350 of chapter 63 of title 18 of the United States Code, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, in his capacity as an officer of Intel Corporation ("Intel"), that, to his knowledge, the Annual Report of Intel on Form 10-K for the period ended December 27, 2003, fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and that the information contained in such report fairly presents, in all material respects, the financial condition and results of operation of Intel. This written statement is being furnished to the Securities and Exchange Commission as an exhibit to such Form 10-K. A signed original of this statement has been provided to Intel and will be retained by Intel and furnished to the Securities and Exchange Commission or its staff upon request.

Date: February 20, 2004

By: /s/ CRAIG R. BARRETT
Craig R. Barrett
Chief Executive Officer

Date: February 20, 2004

By: /s/ ANDY D. BRYANT
Andy D. Bryant
Executive Vice President, Chief Financial Officer
and Principal Accounting Officer

(You are leaving the Form 10-K and continuing to the Corporate Directory.)

CORPORATE DIRECTORY

BOARD OF DIRECTORS

Andrew S. Grove [4]
Chairman of the Board

Craig R. Barrett [4]
Chief Executive Officer

Ambassador Charlene Barshefsky
Senior International Partner
Wilmer Cutler Pickering LLP
A law firm

E. John P. Browne [1 2]
Group Chief Executive
BP plc
An integrated oil company

Winston H. Chen [1† 2]
Chairman
Paramitas Foundation
A private foundation

D. James Guzy [1 3 6†]
Chairman
Arbor Company
A limited partnership

Reed E. Hundt [2† 3]
Advisor
McKinsey and Company
A management consulting firm

Paul S. Otellini
President and
Chief Operating Officer

David S. Pottruck [2 5†]
President and
Chief Executive Officer
The Charles Schwab Corporation
A securities brokerage firm

Jane E. Shaw [1† 3 6]
Chairman and
Chief Executive Officer
Aerogen, Inc.
An emerging specialty pharmaceutical company

John L. Thornton
Professor and Director of
Global Leadership
Tsinghua University (Beijing)

David B. Yoffie [3† 4† 5 6 7]
Max and Doris Starr
Professor of International
Business Administration
Harvard Business School

Charles E. Young [3 5 6]
President Emeritus
University of Florida and
Chancellor Emeritus
University of California at
Los Angeles

[1] *Member of Audit Committee*
[2] *Member of Compensation Committee*
[3] *Member of Corporate Governance Committee*
[4] *Member of Executive Committee*
[5] *Member of Finance Committee*
[6] *Member of Nominating Committee*
[7] *Lead Independent Director*
[†] *Committee Chairman*

DIRECTORS EMERITI

Gordon E. Moore
Chairman Emeritus

Leslie L. Vadasz
Director Emeritus

CORPORATE OFFICERS

Andrew S. Grove
Chairman of the Board

Craig R. Barrett
Chief Executive Officer

Paul S. Otellini
President and
Chief Operating Officer

Andy D. Bryant
Executive Vice President
Chief Financial and
Enterprise Services Officer

Sean M. Maloney
Executive Vice President
General Manager,
Intel Communications Group

Robert J. Baker
Senior Vice President
General Manager,
Technology and
Manufacturing Group

Sunlin Chou
Senior Vice President
General Manager,
Technology and
Manufacturing Group

F. Thomas Dunlap, Jr.
Senior Vice President
General Counsel

Michael J. Fister
Senior Vice President
General Manager,
Enterprise Platforms Group

Patrick P. Gelsinger
Senior Vice President
Chief Technology Officer

Patricia Murray
Senior Vice President
Director, Human Resources

Ronald J. Smith
Senior Vice President
Strategic Programs

Howard G. Bubb
Vice President
General Manager,
Communications
Infrastructure Group

Louis J. Burns
Vice President
General Manager,
Desktop Platforms Group

Douglas F. Busch
Vice President
Chief Information Officer

Anand Chandrasekher
Vice President
General Manager,
Mobile Platforms Group

Jason Chun Shen Chen
Vice President
Director,
Sales and Marketing Group

Mark A. Christensen
Vice President
Director,
Intel Capital Mobile and
Communication Sectors

Leslie S. Culbertson
Vice President
Director,
Corporate Finance

Thomas R. Franz
Vice President
General Manager,
Communications
Infrastructure Group

Hans G. Geyer
Vice President
General Manager,
Networking and Storage Group

Brian L. Harrison
Vice President
General Manager,
Fab/Sort Manufacturing

William M. Holt
Vice President
Director,
Logic Technology
Development

John H. F. Miner
Vice President
President,
Intel Capital

Sandra K. Morris
Vice President
General Manager,
Intel Communications Group
Business Operations and
Services

David Perlmutter
Vice President
General Manager,
Mobile Platforms Group

Pamela L. Pollace
Vice President
Director,
Corporate Marketing Group

Gidu K. Shroff
Vice President
Director,
Materials

William M. Siu
Vice President
General Manager,
Desktop Platforms Group

Stephen L. Smith
Vice President
Director,
Desktop Platform Operations

Edward Y. So
Vice President
Director,
California Technology and
Manufacturing

Arvind Sodhani
Vice President
Treasurer

William A. Swope
Vice President
General Manager,
Software and
Solutions Group

Cary I. Klafter
Corporate Secretary

APPOINTED VICE PRESIDENTS

Corporate Technology Group

Frank E. Spindler
Director, Industry
Technology Programs

David L. Tennenhouse
Director, Research

Shane D. Wall
Director,
Systems Technology Lab

Desktop Platforms Group

Kevin M. Corbett
Chief Technology Officer

Robert B. Crooke
General Manager,
Desktop Marketing and
Strategic Planning

Glenda M. Dorchak
General Manager,
Consumer Electronics Group

Gerald S. Holzhammer
General Manager,
Platform Architecture and
Solutions Division

Stuart C. Pann
Director,
Microprocessor Marketing and
Business Planning

Sunil R. Shenoy
Director, CPU Development

Randy L. Wilhelm
General Manager,
Client Platform Division

Enterprise Platforms Group

Daniel J. Casaletto
General Manager,
Massachusetts Microprocessor
Design Center

David M. Cowan
Director, Platform
Architecture Technology

Thomas R. Macdonald
General Manager,
Advanced Components Division

Abhijit Y. Talwalkar
General Manager,
Platform Products Group

Dalibor F. Vrsalovic
Director,
Advanced Systems
Development

Finance and Enterprise Services

Anthony R. Gosden
Assistant Treasurer and
Director, Corporate Credit

Ravi Jacob
Assistant Treasurer,
Acquisitions and
Strategic Investments

John N. Johnson
Director,
Information Technology
Customer Services

Franklin B. Jones
Director,
Business Systems and
Applications

Jon A. Olson
Director, Finance

Nanci S. Palmintere
Director,
Tax, Licensing and Customs

Prasad L. Rampalli
Director and Chief Architect,
Architecture and
Integration Platforms

Ogden M. Reid
Director,
Human Resources
Legal Services

Dianne L. Rudolph
Director, Finance

Jacklyn A. Sturm
Controller, Technology and
Manufacturing Group

Richard G. A. Taylor
Director, Human Resources

Janice F. Wilkins
Director, Internal Audit

Intel Capital

Scott C. Darling
Director,
Enterprise and Home Sectors

Claude M. Leglise
Director,
International Sector

Curt J. Nichols
Director,
Digital Home Sector

Intel Communications Group

Shmuel Arditi
General Manager,
Cellular and Handheld Group

Darin G. Billerbeck
General Manager,
Flash Products Group

Douglas L. Davis
General Manager,
Network Processor Division

Timothy A. Dunn
General Manager,
Networking and Storage Group

Gil G. Frostig
Director,
Chief Technology Office

James A. Johnson
General Manager,
Wireless Networking Group

Thomas A. Lacey
General Manager,
Flash Products Group

W. Eric Mentzer
Chief Technology Officer

Michael A. Ricci
Director,
Business Development

Gadi Singer
General Manager,
Cellular and Handheld Group

CORPORATE DIRECTORY *(continued)*

Legal and Government Affairs

James W. Jarrett
Director, Worldwide Government Affairs

Cary I. Klafter
Director, Corporate Affairs

D. Bruce Sewell
Assistant General Counsel

Donald M. Whiteside
Director, Strategic Programs Office

Mobile Platforms Group

Shmuel Eden
Director, Marketing

Gregory S. Spirakis
Director, Design Technology

Sales and Marketing Group

John A. Antone
General Manager, Asia-Pacific

(Sophia) Lee Fang Chew
General Manager, Reseller Channel Operation

Deborah S. Conrad
Director, Solutions Market Development Group

John E. Davies
Director, Solutions Market Development Group

Gerald J. Greeve
General Manager, Asia-Pacific

Renee J. James
General Manager, Microsoft Program Office

Thomas M. Kilroy
Co-President, Intel Americas, Inc.

Ann Lewnes
Director, Intel Inside® Program and Co-Marketing

Donald J. MacDonald
Director, Worldwide Branding and Campaigns

Jeffrey P. McCrea
Co-President, Intel Americas, Inc.

Christian Morales
General Manager, Europe, Middle East, Africa

Gregory R. Pearson
Co-President, Intel K.K. (Japan)

Daniel R. Russell
Director, Technical Operations

Stacy J. Smith
General Manager, Europe, Middle East, Africa

Technology and Manufacturing Group

Sohail U. Ahmed
Director, Logic Technology Development

Nasser Bozorg-Grayeli
Director, Assembly Technology Development

Craig C. Brown
Director, Materials Operations

Robert E. Bruck
Director, Fab Capital Equipment Development

Steven R. Grant
Director, Logic Technology Manufacturing and Transfer

Jai K. Hakhu
General Manager, Technology Manufacturing Engineering

Kirk R. Hasserjian
Director, D2 Technology Development and D2 Plant Manager

Tim G. Hendry
Fab 11X Plant Manager

Gary V. Hensley
Director, Corporate Services

Alexander Kornhauser
General Manager, Israel Operations and F18 Plant Manager

Charles H. Korstad
Director, Corporate Quality Network

Brian M. Krzanich
Process 860 Program Manager

Stefan K. Lai
Director, California Technology and Manufacturing

Bruce H. Leising
Director, Intel Communications Group Manufacturing

John McGowan
Director, Corporate Services

Gulzar Mohd Ali
General Manager, Assembly/Test

James R. OHara
General Manager, Ireland Operations and Fab 10/14 Plant Manager

Sanjay D. Panditji
Director, Systems Technologies

Keith E. Reese
General Manager, Intel Supply Network

Clemente J. Russo
General Manager, Systems Manufacturing

Babak Sabi
Director, Corporate Quality Network

Joseph D. Schutz
Director, Logic Technology Development Microprocessor Design

SENIOR FELLOWS

Corporate Technology Group

Kevin C. Kahn
Director, Communications Technology Lab

Justin R. Rattner
Senior Director, Systems Technology Lab

Desktop Platforms Group

Peter D. MacWilliams
Director, Platform Architecture

Enterprise Platforms Group

Richard B. Wirt
General Manager, Software and Solutions Group

Technology and Manufacturing Group

Mark T. Bohr
Director, Process Architecture and Integration

Yan A. Borodovsky
Director, Advanced Lithography

Eugene S. Meieran
Director, Manufacturing Strategic Support

FELLOWS

Corporate Technology Group

Shekhar Y. Borkar
Director, Circuit Research

Stephen R. Mooney
Director, I/O Research

Stephen S. Pawlowski
Director, Microprocessor Technology Lab

C. Brendan S. Traw
Director, Content Protection Architecture

Uri C. Weiser
Director, Streaming Media Architecture Lab

Desktop Platforms Group

Glenn J. Hinton
Director, IA-32 Microarchitecture Development

David B. Papworth
Director, Microprocessor Product Development

Thomas A. Piazza
Director, Graphics Integrated Chipset Architecture

Enterprise Platforms Group

Peter J. Bannon
Director, Itanium® Microarchitecture Development

Bryant E. Bigbee
Director, Systems Software

John H. Crawford
Director, Itanium® Architecture

Joel S. Emer
Director, Microarchitecture Research

Tryggve Fossum
Director, Microarchitecture Development

Richard B. Grove
Director, Compiler Technology

David J. Kuck
Director, KAI Software Lab

P. Geoffrey Lowney
Director, Compiler and Architecture Advanced Development

Seckin Unlu
Director, System Performance

Intel Capital

Steven G. Duvall
Director, Australia and New Zealand Strategic Investment

Intel Communications Group

Matthew J. Adiletta
Director, Communication Processor Architecture

Jean-Marc Verdiell
Director, Optical Technology

Rajendra S. Yavatkar
Director, Network Processor Software Architecture

Mobile Platforms Group

William J. Grundmann
Director, Computer Aided Design Research

Technology and Manufacturing Group

Gregory E. Atwood
Director, Communication Technology Development

Kenneth C. Cadien
Director, Innovative Technology

Robert S. Chau
Director, Transistor Research

Richard L. Coulson
Director, I/O Architecture

Paolo A. Gargini
Director, Technology Strategy

David H. Hwang
Director, Patterning and Photomask Technology

Karl G. Kempf
Director, Decision Technologies

Jose A. Maiz
Director, Logic Technology Quality and Reliability

Terrence J. McManus
Director, Environmental Health and Safety Technologies

Neal R. Mielke
Director, Reliability Methods

Devadas D. Pillai
Director, Operational Decision Support Technology

Valluri R. Rao
Director, Analytical and Microsystems Technologies

George E. Sery
Director, Device Technology Optimization

Peter J. Silverman
Director, Lithography Capital Equipment Development

Swaminathan Sivakumar
Director, Lithography

Gregory F. Taylor
Director, Mixed Signal Circuit Technology

Clair Webb
Director, Circuit Technology

Ian A. Young
Director, Advanced Circuit and Technology Integration

INVESTOR INFORMATION

Investor materials

www.intc.com—Intel's Investor Relations home page on the Internet contains background on the company and its products, financial information, frequently asked questions and our online annual report, as well as other useful information. For investor information, including additional copies of the Annual Report/10-K, 10-Qs or other financial literature, visit our web site at www.intc.com or contact Computershare Investor Services, LLC at (800) 298-0146 (U.S. and Canada) or (312) 360-5123 (worldwide); or call Intel at (44) 1793 403 000 (Europe); (852) 2844 4555 (Hong Kong); (81) 298 47 8511 (Japan).

Intel on NASDAQ

Intel's common stock trades on The NASDAQ Stock Market* under the symbol INTC.

Dividend reinvestment program

Intel's Dividend Reinvestment Program allows stockholders to reinvest dividends and contribute additional cash to purchase Intel common stock on a weekly basis. For more information, call Intel's transfer agent, Computershare Investor Services, LLC, at (800) 298-0146 (U.S. and Canada) or (312) 360-5123 (worldwide).

Transfer agent and registrar

Computershare Investor Services, LLC, 2 North LaSalle Street, P.O. Box A3504, Chicago, IL 60690-3504 USA. Stockholders may call (800) 298-0146 (U.S. and Canada) or (312) 360-5123 (worldwide) with any questions regarding the transfer of ownership of Intel stock.

Independent auditors

Ernst & Young LLP, San Jose, California, USA

Corporate governance and social responsibility

Intel continues its commitment to being a benchmark in global corporate citizenship. Each year we strive for continuous improvement in the way the company is governed internally for the benefit of our stockholders, employees and other stakeholders. We also strive to improve communication and disclosure of our performance and programs in the areas of corporate governance and social responsibility. Intel's updated Corporate Governance and Social Responsibility web site at www.intel.com/go/responsibility includes key information, such as the most recent *Global Citizenship* and *Environmental, Health and Safety* reports, as well as extensive information about Intel's *Corporate Governance Guidelines* and *Corporate Business Principles*. The site also includes information about our Workplace of Choice and Community programs.

2004 marks the 10th anniversary of Intel's voluntary public reporting of Environmental, Health and Safety (EHS) results. Over the last 10 years, Intel has made significant progress in reducing our emissions of chemicals such as volatile organic compounds (VOCs) and global warming gases, increasing the recycling of chemical and solid wastes worldwide, and increasing the energy efficiency of our products and operations. We continue to maintain one of the safest workplaces worldwide. For detailed information about our 2003 EHS results, visit www.intel.com/go/ehs. If you have questions or comments, call (800) 316-5542 (U.S. and Canada) or (480) 715-1024 (worldwide).

Intel strives to attract and retain the best minds available by providing an environment in which people of diverse backgrounds are valued and rewarded, encouraging innovation and high levels of fulfillment and productivity. A worldwide emphasis on open communication, commitment to developing a diverse workforce, involvement in local communities and a philosophy of shared rewards has made Intel an attractive place to work.

As a global technology company, Intel recognizes that students need to be prepared for the demands of the future, and that educators need resources and training to do their jobs well. Through the Intel® Innovation in Education initiative, Intel collaborates with educators in communities around the world to improve the quality of mathematics, science and engineering education, and help students develop the higher level thinking skills they need to participate in a knowledge-based economy. In 2003, Intel donated approximately $100 million to programs that support these efforts, including the following:

- Intel® Teach to the Future is a worldwide program that helps teachers effectively integrate technology into the classroom to enhance student learning. The program currently trains teachers in more than 30 countries on all continents. Through 2003, more than one million teachers had completed the Intel Teach to the Future training.
- The Intel® International Science and Engineering Fair and the Intel® Science Talent Search provide young scientists with the opportunity to meet, present their work to and share ideas with established members of the scientific community while competing for awards and college scholarships.
- Intel is collaborating with more than 75 universities in over 25 countries to accelerate the advancement of university curricula and technology research and development.
- Intel® Computer Clubhouse is a community-based education program that gives young people in under-served communities access to high-tech equipment, mentoring and instruction. There are 67 Intel Computer Clubhouses around the world, offering safe, creative environments for exploring new ideas, developing skills and becoming comfortable with technology.

Complete information, as well as free online classroom tools and resources, are available at www.intel.com/education.

The Intel brands

Intel's global branding strategy is designed to associate its brands with advanced technology and innovation that can transform the way people live. The Intel Inside® brand represents technology leadership, quality and reliability; we also have several specific product brands under the Intel® brand umbrella. The Intel brand is consistently ranked as one of the most recognizable and valuable brands in the world.

We would like to thank IDC for its marketing forecast covering PCs, servers and cell phones for 2004 in our "Letter From Your Management." We would also like to thank Top500 for permission to refer to data in their June 2003 and November 2003 rankings of the top supercomputers.

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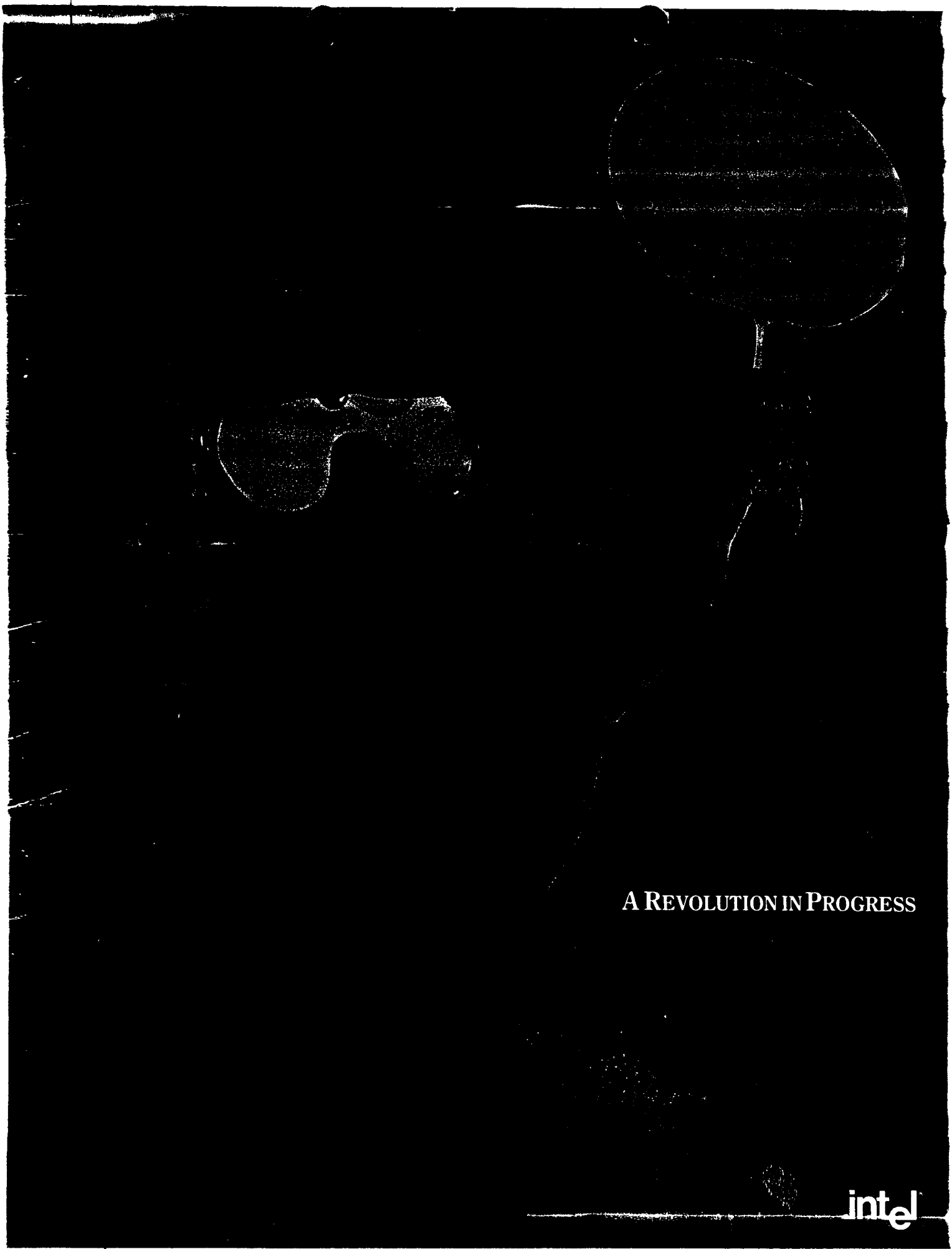

A REVOLUTION IN PROGRESS

intel

A REVOLUTION IN PROGRESS

... A History of Intel to Date

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Typography by Frank's Type Inc.

Printed by ColorGraphics, Inc.

A publication of Intel's Corporate Communications Department

Cover photo: R.J. Muna

FOREWORD

Producing the history of a company only 16 years old would ordinarily be a modest and perhaps premature task. Neither is true in Intel's case. So much of significance has happened here that we found the job both formidable and fascinating.

We have been rummaging around for over a year now digging into archives, conducting over 30 lengthy interviews with employees, checking facts and begging for early photos and memorabilia of the company. Many people—more than we have space to mention—have helped, and we thank them for their generous support of the project. Special thanks to Jean Jones who, as one of the company's original employees and as chairperson of Intel's Museum Committee, has coordinated the collection and preservation of much of the company's heritage. She has been an invaluable source of information.

Our goal has been to capture not just the facts but the spirit that pervades this company responsible for innovations like LSI memory and the microprocessor—innovations that are transforming much of society. To call this transformation a revolution is not an overstatement. And it is a revolution in progress—one that is underway but by no means finished.

INTEL: INNOVATOR OF THE INFORMATION REVOLUTION

The Industrial Revolution, which transformed the world like no other force before it, achieved much of its impact in about 100 years. The Information Revolution, sparked by the introduction of the computer, is making an impact of similar magnitude in a much shorter time. The advent of computers has allowed the amplification and distribution of machine intelligence in a manner similar to the way the Industrial Revolution unleashed and distributed machine power.

Of the companies providing the technology to fuel the Information Revolution, Intel has clearly been one of the leaders. Intel is responsible for two of the major post-war innovations in microelectronics that have made today's electronic age possible—large-scale integrated (LSI) memory and the microprocessor. These breakthroughs, combined with strong management and a unique company culture, have led to explosive growth for Intel. Starting with 12 employees and revenues of $2,672 in 1968, Intel now has more than 25,000 employees in locations around the world, and revenues exceeding $1 billion.

During this period, through recessions and booms, Intel has maintained pretax profit margins and return on equity far above its competitors, a performance unique for the semiconductor industry.

One of the keys to Intel's success was its founding team of Robert N. Noyce, Gordon E. Moore and Andrew S. Grove, three men who earned distinction as scientific pioneers early in their careers. Noyce, with a Ph.D. from M.I.T., holds many key patents in semiconductor technology and was co-inventor of the integrated circuit. Moore, a chemist with a Ph.D. from Caltech, made some of the basic discoveries that led to the integrated circuit and subsequent LSI developments. Grove, with a Ph.D. from the University of California, Berkeley, played a critical role in developing and implementing Metal Oxide Semiconductor (MOS) LSI technology.

Noyce and Moore had worked together at Shockley Semiconductor Laboratory and had later been among the founders of Fairchild Semiconductor in 1957. They hoped to develop advanced silicon-based semiconductor products. By 1968 Noyce was general manager and Moore was director of research and development. Grove, who had joined Fairchild in 1963, was assistant director of research and development.

When the directors of Fairchild began looking outside for a third chief executive officer within less than a year, Noyce told Sherman Fairchild that he was leaving. Moore's increasing frustration with transferring technology from the laboratory to production within Fairchild, combined with concern over the instability at the top of the organization, led him to resign. At the same time, Noyce and Moore saw a potential market in semiconductor memory and a chance to develop new technology oriented toward that opportunity.

Noyce and Moore incorporated on July 18, 1968. Almost immediately, Grove joined them to form the triumvirate that would lead Intel into the development of an exciting new electronics technology.

The new company set out with a precise focus: to exploit the emerging LSI technology—the placement of thousands of microminiature electronic devices on a tiny silicon chip. The first target was computer memory. At that time nearly all computer memories utilized magnetic cores, which were ten times cheaper than the equivalent semiconductor devices. Since integrated circuit costs had been declining and were expected to drop even more, Intel's founders felt the day was at hand when large-scale integration could push semiconductor memories across the cost threshold and into the growing computer market.

They were right. And, through the combined contributions of thousands of people, Intel has grown from their original idea into the leader it is today.

2 of founders leave

By MARGE SCANDLING

Two pioneers in the Midpeninsula integrated circuits industry, Dr. Robert Noyce and Dr. Gordon E. Moore, have resigned from Fairchild Semiconductor to start their own business.

Their new company, to be called Intel Corp., will be in the general area of integrated electronics, according to Moore.

Both men were among the original eight founders of Fairchild Semiconductor in September, 1957. Fairchild is now one of the biggest of the many firms making up the highly competitive integrated circuits industry.

Noyce most recently has served as one of four group vice presidents guiding the operations of the parent Fairchild Camera & Instrument. He has been in charge of both Fairchild Semiconductor and Fairchild Instrumentation, an affiliated company.

Moore has been director of Fairchild Semiconductor's Palo Alto Research Laboratory.

Moore, interviewed at his offices at 365 Middlefield in Mountain View, said the company will get under way with a fairly extensive development period that is to last "many months, probably."

DEVELOPMENT PLAN

"Our strategy is to do some extended technological work before coming out with products," he said. "We particularly are interested in products that none of the manufacturers are supplying."

ROBERT NOYCE

Howard High

Fairchild, form own electronics firm

Business News

What turns both the founders on most is "the idea of getting back in the laboratory." Moore noted that they have found themselves increasingly absorbed in administrative rather than development work.

They didn't leave Fairchild, however, with the idea of starting a company together. Each made plans to leave separately, and then found their interests were so similar that it would be logical to get together.

A lucky break came when they were able to lease some of the space partly vacated by Union Carbide Corp. when it transferred more than 150 of its Mountain View force to a San Diego plant.

"It's larger than we need at first," Moore explained, "but it's equipped with the installations we need for specialty gas and water supplies."

HIRING PLANS

Moore and Noyce expect to hire a staff of about 50 during Intel's development phase, including about a dozen engineers. A few persons are already on the payroll, and Noyce was interviewing others this week while on a trip to the East Coast.

Financing is being arranged privately by Art Rock, San Francisco, who has specialized in finding capital for a number of well - established companies. Among them are Scientific Data Systems and Teledyne Inc.

Moore said he has to be vague about what areas of technology Intel will specialize in, because it hasn't been decided. In general, the company will avoid direct government business and product areas that others are already active in.

It plans to keep to the industrial rather than the consumer part of the industry.

Moore, 39, lives at 23965 Jabil Lane, Los Altos Hills.

He obtained his Ph.D. degree in chemistry and physics in 1954 from California Institute of Technology.

Before joining Fairchild, he was at Shockley Semiconductor Laboratory in Palo Alto with Noyce.

Noyce, 40, holds a Ph.D. degree in physical electronics and solid state physics from Massachusetts Institute of Technology.

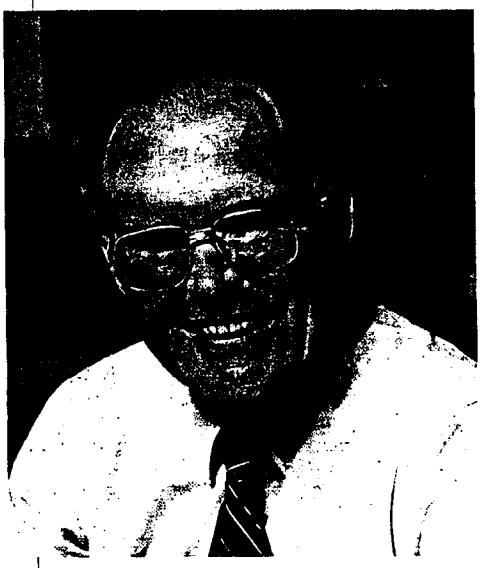
His positions after co - founding Fairchild Semiconductor included research and development director, vice president and general manager, and group vice president.

His home is at 11420 Loyola Drive, Los Altos.

GORDON MOORE

Tom Vano

Andy Grove



Pat Weber

Howard High

THE AGONY AND THE ECSTASY

THE TRIALS OF START-UP

The atmosphere at Intel during its start-up years could best be described as intense. A handful of bright, energetic engineers were gambling that they could set the standard in the memory industry with two virtually untried integrated circuit technologies, Schottky bipolar and silicon gate MOS. The results ranged from agonizing months of experimentation to the jubilation of producing a chip that worked.

Success was sometimes slow in coming. Although the 3101 bipolar device, introduced in the summer of 1969, soon developed a market, the MOS project—which promised greater density and performance at a lower price—did not reach production until late 1969, a full year after start-up. Even then, the first product, the 1101, did not work well. The anxiety level was high.

Having been through a similar start-up at Fairchild, Intel founders Bob Noyce and Gordon Moore did not feel the tension as much as others. "There was anxiety, sure," Noyce recalled. "We weren't certain that we could accomplish our objective, that is, get the price of memory down by a factor of one hundred. But most of us had been in the semiconductor business for all our careers and there was no one else who knew the business as well as we did."

For the rest, the tension was palpable. "It was intense," said Gene Greenwood, who joined Intel in 1970 and is now a product engineering manager. "Your whole life was intense. We'd work 12 to 18-hour days and it got so that I'd resent having to sleep."

Tempers often flared. Paul Metrovich, who came to Intel in 1969 as a senior technician, recalled, "Everyone would holler and scream at each other, letting off steam. I don't know how many times I went into Les Vadasz's office and called him everything I could think of, and he'd just laugh." Metrovich remembered Vadasz, who headed the MOS project, chasing an engineer through the plant while throwing pencils at him because of a late report.

Most of the anxiety came from the MOS project, which encountered formidable obstacles. For example, the technique for putting silicon on top of the oxide had yet to be perfected. "We'd put it down with evaporation," recalled Gene Flath, then manager, wafer fabrication, "and it would look nice, but pretty soon the surface would roll up like the top of a sardine can." The problem wasn't licked until a totally different polysilicon technique was developed.

The tribulations of the MOS team inspired Intel's first bet and simultaneously established a company tradition of betting as a management motivational tool. Andy Grove was then director of operations and was reminded daily of the MOS frustrations. "I was absolutely petrified we would fail," he recalled. In September 1968 he made a bet with Gordon Moore, Les Vadasz, Tom Rowe and Gene Flath, challenging them to produce a stable MOS capacitor by Thanksgiving. The stake was a bottle of Napoleon Cognac.

In 1969 Intel's work force of 106 employees assembled in front of the company's first home in Mountain View, California.

William C. Eymann

Tom Rowe, Intel's first process engineer, explained that building a stable MOS capacitor meant that its threshold voltage wouldn't vary more than a tenth of a volt, so it had to be uncontaminated. "We didn't even have distilled water in the plant!" he exclaimed.

Rowe got lots of exercise lugging bottled water into the plant, holding it up and pouring it over the diffusion equipment to clean it. But it still wasn't clean enough. "So eventually what we did—it was Les Vadasz's idea—was to use our phosphorous furnace," he recalled. "We lightly added a little bit of phosphorous to the MOS capacitor. On the last night we finally got one that didn't drift, although by using phosphorous we didn't do it exactly the way it was intended."

Nonetheless, the bet was won. "To this day Andy claims that because of the phosphorous we should have lost, but actually we won," said Flath.

MOUNTAIN VIEW REMEMBERED

The site of this intense activity and anxiety was Intel's first home, a small building in Mountain View, formerly occupied by Union Carbide Electronics. One of Flath's early memories is of the facility in which electronics history was to be made.

"It was a disaster. Carbide was still moving out, and there was equipment all over, wires and pipes hanging down, and the floor tile torn up. We picked a small section of the building and decided that's where we would put the fab area. Then we started to plan how we would equip it."

By coincidence, the Western Electronics Conference (Wescon) show had just opened in Los Angeles. Flath attended and literally ordered equipment right off the floor: "I'll have one of those, a couple of those, and three of those," he said. "We bought our Heavy-Duty Lindberg furnace bank there. It was a demonstration unit, and was in use until 1981 when the Mountain View fab was closed." Meanwhile, Andy Grove purchased

bonders and Gordon Moore bought the evaporators.

Intel's first Christmas Eve in the building proved memorable. After most of the 20-odd employees had adjourned to the Wagon Wheel Restaurant in Mountain View for pre-holiday cheer, Bob Noyce noticed water on the floor near the evaporator room. A water line in the back of the vacuum system had burst, and gallons of water were quietly pouring out onto the floor. Noyce and the few employees still in the building—including Flath, Moore, and Jerry Larson—grabbed mops, squeegies, and giant quantities of paper towels, rolled up their pants, and in their bare feet spent the next two hours mopping up the floor. "If we hadn't caught it," recalled Flath, "the entire building would have been afloat after the holidays."

Manufacturing continued at the original Fab 1 in the Mountain View building until 1981 when production and employees were transferred to newer facilities in Santa Clara.

EASY MONEY

When Noyce and Moore decided to start Intel, they knew that one of the dangers for a young company was "running out of money on schedule but not getting the product out on schedule." So after incorporating, they appealed to Arthur Rock, a successful venture capitalist who had helped start Fairchild Semiconductor, Teledyne and Scientific Data Systems.

"Going to Art was a pretty casual thing," recalled Noyce. "We simply said that we were thinking of starting over again, and asked if he thought it was possible to raise the money. Rock replied that if we put up some of our own money, he wouldn't have any trouble." Noyce and Moore each kicked in $245,000 and Rock added $10,000. Rock soon raised an additional $2.5 million by

Art Rock, 1968

arranging for the sale of convertible debentures, mostly to individual investors. "Art simply got on the phone and called a number of friends, and they said, 'sure,' " Noyce remembered.

The business plan consisted of a single typewritten page which stated simply that the company was going into large-scale integrated circuits. Nothing specific. "Frankly, we didn't want people to know what we were doing," said Noyce. "We didn't want to attract competitors too soon."

Noyce's alma mater, Grinnell College in Iowa, was one of the early investors, acquiring $300,000 of debentures. This initial investment later proved so valuable that at one time it constituted 40 percent of the college's investment portfolio.

In the next two years, Intel realized another $2.16 million in private placements. The company went public in 1971 at $23.50 per share, raising $6.8 million.

In March 1973, Intel scored its first $3-million month. Ed Gelbach, then director of marketing, ordered custom-labeled bottles of champagne for employees to celebrate the milestone.

INTEL DELIVERS

From its earliest days, Intel did not want to be perceived simply as an R&D house that could brilliantly invent a single component but not be able to deliver in quantities. "We felt it was important for us to go out of our way to deliver the products we were committed to, and to communicate this capability in the marketplace," explained Gordon Moore. "So we adopted the 'Intel Delivers' slogan and pushed it."

Bob Noyce added, "At the time everyone was talking about LSI, but nobody else was really doing anything. We were, and we felt we had to get across the message that LSI was here and not just pie in the sky."

Another aspect of "Intel Delivers" was assuring visiting customers that Intel was a reliable and substantial supplier, despite its small size. To do so, the company resorted to some ingenious solutions.

As the tour progressed, I ran around moving our people from one place in the building to another, so it would look busier.
—Andy Grove

Andy Grove remembered being warned that one particular visiting customer needed reassurance that Intel was indeed a production house. A tour of the facility was arranged. Recalled Grove, "As the tour progressed, I ran around moving our people from one place in the building to another, so it would look busier." A number of employees wore several hats that day to give the customer a somewhat exaggerated picture of the workforce.

Another attempt to impress customers was short-lived. At the time many of the staff members were Ph.D.s: Bob Noyce, Gordon Moore, Andy Grove, Ted Hoff and Dov Frohman. Someone decided it would be a good idea, when customers came to call, to page the Ph.D.s as "Doctor." The Ph.D.s soon put a stop to it themselves. "It sounded like a hospital: 'Dr. Moore to surgery,' " recalled Dov Frohman, "and we were all unhappy with it."

THE CHAMPAGNE TRADITION

Early successes established the champagne celebration tradition at Intel. When a circuit finally worked or a product was shipped for the first time, the news was announced over the paging system. Then someone would break out the bubbly.

Intel's first success was the 3101 bipolar project and the champagne flowed. The beleaguered MOS team, struggling at the other end of the lab to produce anything that functioned, was "pretty quiet" as the corks popped, recalled bipolar team member Ted Jenkins.

In the early days, when a circuit finally worked or a product was shipped for the first time, employees would gather in the cafeteria for a champagne celebration. After one such celebration, so many corks popped against the acoustical ceiling tile that it had to be replaced.

When the MOS team finally produced something workable, the joy was explosive. Remembered Metrovich, "It was about three o'clock in the afternoon, and we had a little party in the cafeteria. So many corks popped against the acoustical tile ceiling that it had to be replaced."

When Intel scored its first $3 million month in March 1973, Ed Gelbach commemorated the milestone by ordering a supply of small champagne bottles labeled "Domaine d'Intel" for employees. The tradition of custom-labeled wine or champagne bottles to celebrate achievements lives on.

ONE BIG FAMILY

In Intel's start-up years it was easy to communicate and socialize because the staff was small.

Employees would occasionally troop to Washington Park in Sunnyvale or Mitchell Park in Palo Alto for impromptu picnics. "These would usually celebrate some landmark event, and were organized by the employees," recalled Jean Jones, who joined Intel on day one as Bob Noyce and Gordon Moore's secretary.

Lunch was sometimes a family affair in the plant too. Every Thursday noon Bob Noyce and Gordon Moore would invite seven or eight employees to an informal meal, which would feature an open discussion in question-answer format. For a time this was a vital means of communication at Intel, but as the company grew, the lunches became fewer and they were finally dropped.

FIVE YEARS LATER

Intel celebrated its first five years with a summer party on San Francisco Bay. The festivities started in the afternoon, and included a Bay cruise, dancing to a live band and plenty to eat and drink. Intel staged an elaborate fireworks display as a grand finale.

By its fifth year, Intel was firmly established as an industry leader. The agonies and ecstasies of the "good old days," fast becoming the stuff of company legend, were giving way to the dramatic growth spurts of the mid-1970s, which would catapult Intel into the billion-dollar class by its fifteenth birthday.

There was anxiety, sure... We weren't certain that we could accomplish our objective, that is, get the price of memory down by a factor of one hundred. But most of us had been in the semiconductor business for all our careers and there was no one else who knew the business as well as we did.
—Bob Noyce

William C Eymann

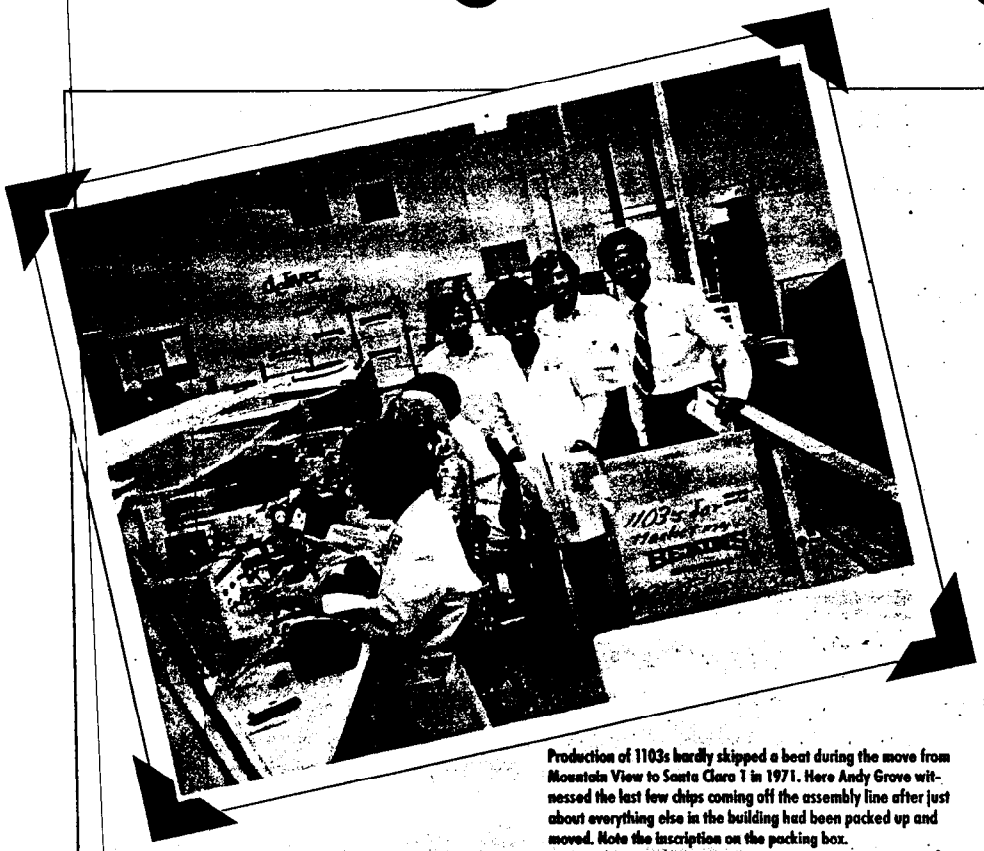
Betty Heiple and Joel Karp review one of the composite drawings that led to the 1103, a 1K dynamic RAM which went into production in 1970. The 1103 became an industry standard and by 1972 was the largest selling semiconductor memory in the world.

WHAT'S IN A NAME?

On July 18, 1968 Bob Noyce and Gordon Moore incorporated their new venture as N M Electronics. Not very creative, but at the time a company name was low on the priority list. Someone suggested Moore, Noyce Electronics, but it looked better than it sounded (More Noise).

A long search followed for a more suitable company name. Integrated Electronics—the first choice, since it described the field the new venture was to tackle—had been taken, and the company ran another eight or ten selections past the State Corporations Commission without any luck. "Then we started using first syllables of various names we'd tried before, and came up with Intel, which sounded sort of sexy," recalled Noyce. There were potential conflicts here and abroad with other companies of the same or a similar name. Intel solved that problem by purchasing the rights to use the name from a company that used Intelco. "We thought that paying the $15,000 was easier than thinking up another alternative," said Moore.

The familiar logo with a dropped "e" was adopted soon thereafter. A public relations consultant, Jon Hall, suggested the design as a way of indicating where the syllable break should come, and hence the word each syllable stood for. The logo was approved promptly and enthusiastically.



Production of 1103s hardly skipped a beat during the move from Mountain View to Santa Clara 1 in 1971. Here Andy Grove witnessed the last few chips coming off the assembly line after just about everything else in the building had been packed up and moved. Note the inscription on the packing box.

OLD PEAR ORCHARD

By 1970 it was apparent that the original Mountain View facility would not accommodate Intel's growth, so the company purchased 26 acres in nearby Santa Clara. The property, located at the corner of the Central Expressway and Coffin Road, was a pear orchard. After construction of the first building, SC 1, employees could pick pears on the undeveloped land until SC 2 was built.

The association of a fledgling high-tech company with a Coffin Road address did not, many thought, project the best image, so Intel petitioned the city council to change the name of the street. The city council agreed, and the street was renamed Bowers after a prominent family in the area.

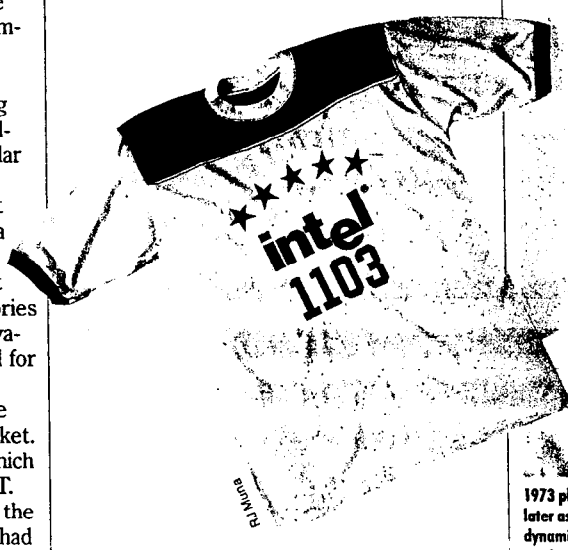
GETTING STARTED: THE 3101 AND 1103

Intel's charter was to design, manufacture and market semiconductor memory components incorporating large scale integration (LSI) technology. The company saw an untapped market in the replacement of computer core memories (then the industry standard) by producing low-cost, standardized circuits in high volume. Initial efforts were directed at bipolar and MOS memories.

The company's first successful product was the 3101 Schottky bipolar memory, a 64-bit high-speed static random access memory (RAM), introduced in 1969, just nine months after start-up. Bipolar memories were not new, but Intel adopted an innovation, Schottky bipolar technology (named for the German physicist, Walter Schottky). Not only did it work like a charm, but the company beat its competitors to the market.

Dick Bohn headed the project team which included Tom Innes, Ted Jenkins and H.T. Chua. Honeywell, which had established the industry standard for bipolar memories, had called for a new generation high-speed bipolar memory, and Intel jumped at the chance. Although Honeywell chose not to engage the new and unproved Mountain View company, Intel went ahead on its own anyway. "We delivered a brand new technology, we delivered ahead of anybody on that product, and it was an absolutely fantastic success story," said Les Vadasz. Added Andy Grove, "That project just purred."

The bipolar success generated much-needed revenue that helped establish the fledgling company in the semiconductor marketplace while it struggled to perfect its other technological breakthrough: the silicon gate MOS chip.

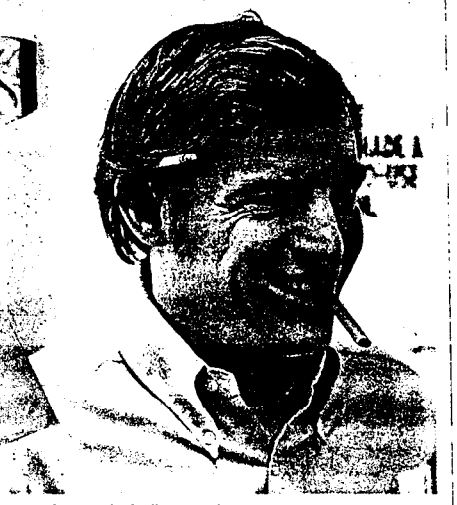


The 1103 dynamic RAM was phased out in 1979 and its "jersey" retired after eight years of prominence. Pictured are Bob Abbott (left), 1103 designer, and Ron Whittier, then Memory Components Division vice president and general manager. Whittier is indicating that more than 35 million 1103s were shipped.

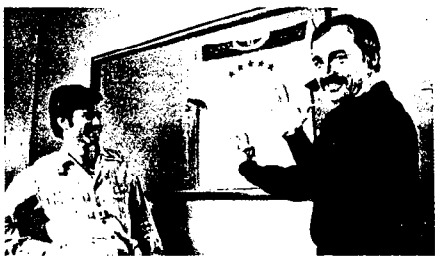
ON THE MAP WITH THE 1103

In 1969, after a year of agony and frustration, Intel introduced the 1101, a 256-bit static RAM. This was the world's first high-

Robert Isaacs



1973 photograph of Bill Regitz who, as a Honeywell engineer and later as an Intel engineer, contributed to the design of Intel's early dynamic RAMs. He later became general manager of Intel's Memory Systems Operation.



*SOO*PER DIP

Intel's first MOS product, the 1101, made electronics history, proving the viability of the silicon gate process. Those who labored mightily to bring it to life remember the secret ingredient that made it possible.

"Les Vadasz led the design effort," recalled Tom Rowe, Intel's first process engineer. "We couldn't get the silicon gate process to work; it was a mess. We ran them on 2-inch wafers, and Intel thought that if we could run 20 working-die-per-wafer the company would be massively successful. It was a little bit like peeling an onion: every time we'd fix a problem, we'd uncover another one. I was afraid the last layer was going to be nothing. For all we knew the silicon gate process was no good. We'd make process change after process change and many design changes, but it was still yielding only about 2 die per wafer, which meant it was a commercial disaster.

"Then one morning we changed the acid dip formula, one step before aluminum evaporation, and when the first wafers came out they yielded 25 die per wafer, no exaggeration. By changing that one last process step, we went from 2 die per wafer to 25 die per wafer.

"George Staudacher, who was in charge of Sort, was so excited he started yelling, 'Holy hell, look what's going on here!' and pretty soon people came pouring out of their offices: Andy Grove, Gordon Moore and Les Vadasz were there, and I don't remember who else.

Tom Vano

Les Vadasz, 1969

"The run was a split run; in other words, half was the old process and half was the new process. They'd say, 'Find another good wafer and put it on.' Staudacher would get it sorted, and sure enough there would be 20 to 30 die per wafer. Finally Grove came over to me and said, 'What did you do, Rowe; what did you change?' I told him we changed the acid dip.

"Well, Les was so excited he started jumping up and down and yelling, 'It's a *soo*per dip,' with his Hungarian accent, 'It's a *soo*per dip, it's a *soo*per dip,' over and over again. Someone heard him and went back and marked the container of acid, 'Super Dip.' So even though it wasn't a precise chemical formula, for over a year that container just sat there with that label 'Super Dip' on it.

"That was the real turning point for MOS; we proved that MOS silicon gate could make it that day."

volume MOS semiconductor memory, and the first use of MOS silicon gate technology. Through constant innovation, it would lead to denser, higher performance memories at continually lower prices.

Although the 1101 was too complex and too small to achieve broad market acceptance and not capable of penetrating the core market, its basic MOS process was applied to shift registers (a simple form of serial memory). The market for shift registers was already established and Intel produced them profitably for a number of years. The resulting infusion of cash proved vital to Intel during the recession period of 1970-71.

During the same time frame, Intel was working on the 1102 and 1103, two designs for a 1K dynamic RAM using three transistors per memory cell. Intel and Honeywell were partners in the development of the 1102. Its design was led by Joel Karp, an Intel engineer, and Bill Regitz, who worked for Honeywell at the time but joined Intel in 1971. Intel's Bob Abbott, working under Vadasz, designed the 1103. Abbott explained, "As it turned out, the 1102 never made it to the market. And, although you couldn't say the 1103 was easy to use or produce, it was a little easier than the 1102 and it was smaller. In late 1970, Intel made the decision to put the 1103 into production, and to stop development of the 1102 altogether."

Honeywell provided invaluable assistance, testing early versions of the 1103 to rid it of hidden bugs, and perfecting package configurations and pin counts. "Honeywell was our biggest and best customer at one point, and they really encouraged us," recalled Gerry Parker, who was hired out of graduate school in 1969.

The introduction of the 1103, the world's first 1K dynamic RAM, was a turning point in the history of the integrated circuit: for the first time significant amounts of information could be stored on a single chip. It began to replace core memories and became an industry standard. By 1972 it was the largest selling semiconductor memory in the world. "It is now found in the products of 14 out of 18 mainframe computer manufacturers in the U.S., Europe and Japan," said Intel's 1972 annual report. That year, under the leadership of Albert Yu, Intel converted the Mountain View fab from 2-inch to 3-inch wafers, which doubled MOS die production capacity.

The 1103, by today's standards, was a primitive device. It was slow, difficult to make and test, and touchy to operate. But it proved that semiconductor memories were not only viable, but were a vast improvement over core memories, and it greatly increased the power of computers as they then existed. It also furthered the credibility of Intel as a new company, and produced revenues that were plowed back into development of subsequent products.

THE ROCKY ROAD TO A RAM

In developing the world's first 1K dynamic RAM, the 1103, Intel's young MOS team had to overcome a number of difficulties. For example, the product had a host of reliability problems. "I can remember in 1970 going out on the line twice a day and physically counting 1103s as the introduction date drew near," said Keith Thomson, who headed production control. "We almost knew each good unit by name."

"It was a bitch to test," said Les Vadasz. He remembered times of near euphoria when it appeared the product was working, only to have further testing reveal yet another problem. "The 1103 probably had more impact on the tester industry than it did as a memory," he laughed. Bill Regitz recalled actually shutting down testing of the part for a full week at one point because 30-40 percent of the parts were failing electrical test at final QA. "We worked around the clock with the people from Teradyne who made the testers, and finally located and solved a design problem in the tester. When it was fixed, our electrical final QA failure rate dropped to 15 percent."

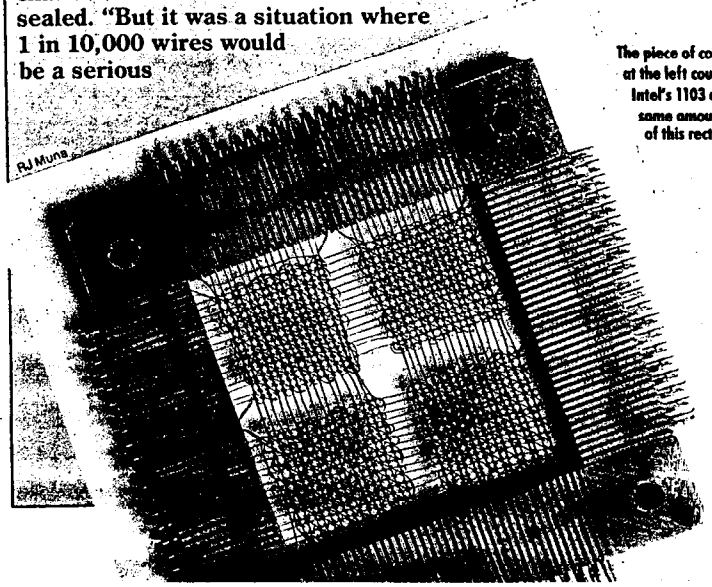
Gerry Parker remembered efforts to overcome voltage, packaging and other shortcomings. "Once a customer returned a shipment of devices which were 'raining' inside because the glass used to seal them gave off moisture, acting like a pressure cooker," he recalled.

One of the later problems that beset the 1103 was loose bits of wire in the package. If the device was shaken, the bits would cause a short and the part would fail. The problem finally got so serious that Intel installed a machine to shake the devices and listen for rattles inside through a microphone. Dozens of inspectors were hired to examine each 1103 before it was sealed. "But it was a situation where 1 in 10,000 wires would be a serious problem," explained Parker, "so it was an incredibly difficult thing to inspect."

Although Intel management's commitment to the silicon gate approach never wavered, the problems and failures threatened the very life of the company. "We didn't have a product that was a major success until the 1103 in 1971," explained Andy Grove. "My worst nightmare was that the MOS memory would start drifting." (Drift on an MOS device, a phenomenon caused by even the tiniest bit of contamination, meant that the chip's electrical threshold did not hold constant. The changing voltage values would have rendered the chip worthless.)

Marketing the 1103 was a further challenge. Customers had difficulty using the chip, which led to numerous redesign projects, and Intel secretly harbored doubts about its early applications. Recalled Ed Gelbach, hired as vice president and marketing director in 1971, "We could never find a customer that used them and we were shipping literally hundreds of thousands of them. They were all testing the product and putting it in boards—they wanted to be in the forefront of technology—but it seemed like none of the customers ever shipped machines with the part. My recurring nightmare was that all those chips were going to be returned over a single weekend."

His concern was understandable. By 1972 almost all of the company's revenue resulted from 1103 sales. Commented Gelbach, "There was a general feeling that if the 1103 failed, Intel would not make it, and might not get another chance." As it turned out, thanks to the success of the 1103, Intel didn't need that other chance.



The piece of core memory shown actual size at the left could store 1024 bits of memory. Intel's 1103 dynamic RAM could store the same amount of data in a chip the size of this rectangle. ■

STARTING ANOTHER REVOLUTION

The Intel ad in the November 15, 1971 issue of *Electronic News* was arresting: "Announcing A New Era of Integrated Electronics," it claimed. The statement, suggested by Gordon Moore, proved prophetic: Intel was introducing the world's first microprocessor, and would launch a revolution in the electronics industry.

Just four years later, in 1975, *Fortune* magazine would say, "The microprocessor is one of those rare innovations that simultaneously cuts manufacturing costs and adds to the value and capabilities of the product. As a result, the microprocessor has invaded a host of existing products and created new products never before possible."

This single invention revolutionized the way computers are designed and applied. It put intelligence into "dumb" machines and distributed processing capability into previously undreamed of applications.

The advent of intelligent machines based on microprocessors changed how we gather information, how we communicate, and how and where we work.

ENTER BUSICOM

In mid-1969 Busicom, a now-defunct Japanese calculator manufacturer, asked Intel to design a set of chips for a family of high-performance programmable calculators. Marcian E. "Ted" Hoff, an engineer who had joined Intel the previous year, was assigned to the project.

In Busicom's original design, the calculator required at least five chips, which Hoff considered too complex to be cost-effective. Furthermore, Intel's small MOS staff was fully occupied with the 1101, so the design resources were not available. Hoff came up with a novel alternative: by reducing the complexity of the instructions and providing a supporting memory device, he could create a general-purpose information processor. The processor, he reasoned, could find a wide array of uses for which it could be modified by programs stored in memory. "Instead of making their device act like a calculator," he recalled, "I wanted to make it function as a general purpose computer programmed to be a calculator."

To this end, Hoff and fellow engineers Federico Faggin and Stan Mazor came up with a design that involved four chips: a central processing unit (CPU) chip, a read-only memory (ROM) chip for the custom application programs, a random access memory (RAM) chip for processing data, and a shift register chip for input/output (I/O) port. The CPU chip, though it then had no name, would eventually be called a microprocessor.

Measuring one-eighth of an inch wide by one-sixth of an inch long and made up of 2300 MOS transistors, Intel's first microprocessor was equal in computing power to the first electronic computer, ENIAC, which filled 3000 cubic feet with 18,000 vacuum tubes. The 4004, as it was to be called, could execute 60,000 operations a second, which by today's standards is primitive.

The first advertisement for a microprocessor ran in *Electronic News*, November 15, 1971. It announced the 4004 microprocessor, which launched revolutionary changes in how information is gathered, processed and communicated.

Robert Isaacs

1973 photograph of Marcian E. "Ted" Hoff, inventor of the microprocessor.

Initially the people at Busicom were not convinced that Intel was on the right track. It was not until early 1970 that they agreed to the concept and a contract whereby Intel would develop the chips for $60,000. The project proceeded, with Federico Faggin working furiously for nine months to complete the design. Masatoshi Shima, who represented Busicom and later joined Intel, designed the 4004 logic.

Intel delivered the chips, and Busicom eventually sold some 100,000 calculators.

Meanwhile, however, debate raged within Intel about what future this new chip had, and whether the company should negotiate for a return of the rights to it, which had gone to Busicom in the original contract. There were some who had no concept of what the new product was. Recalled Ed Gelbach, then director of marketing, "Originally, I think we saw it as a way to sell more memories and we were willing to make the investment on that basis."

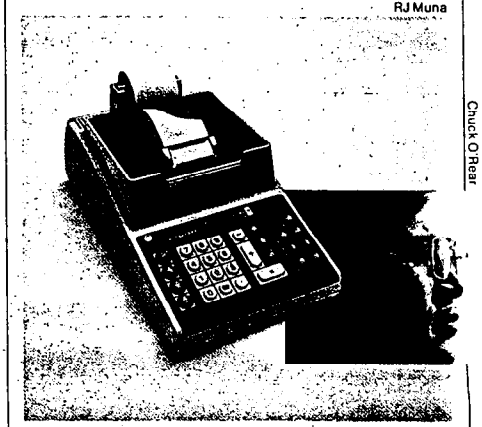
But later, on a trip to Japan, he and Bob Noyce discussed the issue of the rights to the design. "We weren't sure where Busicom was headed or if it would succeed," remembered Gelbach. "But we did agree that we could do a lot more with this set of parts than sell it for calculators. So I made a commitment to Bob then and there that I would set up a separate group to pursue this."

Others—including Mazor and Hoff—were even more strongly convinced that the chips had a general purpose product potential. They had lists of possible product applications: cash registers, coin changers, traffic light controllers, and the like. They lobbied loudly that the company should return the $60,000 for the design rights.

Intel finally made the critical decision: it offered Busicom a lower price for the chips in return for securing the rights to the microprocessor design and the rights to market it for non-calculator applications. Busicom, by then in financial trouble, agreed. "The negotiations with Busicom were pretty unsophisticated from a legal standpoint," remembered Noyce, but that simple agreement would prove to be historic.

The Busicom deal hardly set off fireworks at Intel or in the industry. But Intel's man-

RJ Muna



Chuck O'Rear

1983 photograph of Masatoshi Shima, who now heads Intel's design center in Japan. As an employee of Busicom, a calculator manufacturer, Shima designed the logic for the 4004 microprocessor, which was developed by Intel for Busicom in 1971.

agement ultimately decided that the microprocessor represented a whole new type of computer with real commercial potential. It also offered the company an opportunity to extend its commitment in memories. Moore explained, "As soon as the microprocessor was a reality, we recognized that this was the next thing we wanted to do after semiconductor memory—a new direction in LSI. By programming, we could make a standard LSI circuit perform in a wide variety of applications. We seized it as another step in the direction we wanted to go."

> *Originally, I think we saw it [the microprocessor] as a way to sell more memories and we were willing to make the investment on that basis.*
> *—Ed Gelbach*

MARKETING THE 4004

In 1971 Gelbach and his assistant, Hank Smith, took on the task of marketing the 4004. Their challenge was to convince logic designers to use the new technology.

The 4004 did not have very high performance but it was ideal for a variety of unsophisticated control applications. Initial market research was quite informal. Potential customers were asked why they didn't program their logic functions. The answer inevitably was "too expensive," to which Noyce would respond, "What if it cost $5; would you do it?" And the answer was always, "Sure."

"All we had to do was get the cost of the 4004 kit down from $30 or $40, and the customer could write his own program," said Noyce. "We had to create the need and get the price right." Gordon Moore remembered going to an industry conference in 1972 and saying, essentially, "Hey, we've got this thing; here's what it'll do. Now how can we in the industry figure out a need for 100,000 of them a month?"

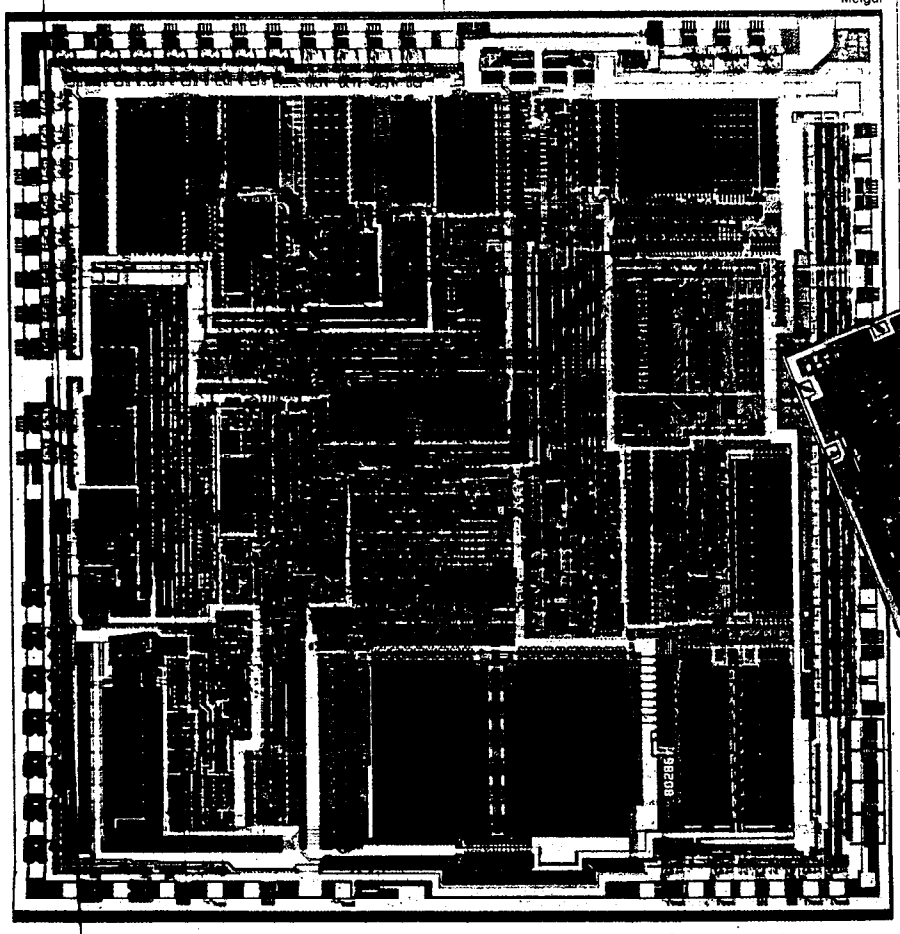
It became apparent that potential users of the microprocessor needed help to use it. This prompted Gelbach and his group to produce the first generation of development aids, which were elementary programming tools. These made it easier for engineers to use Intel's first microprocessors. In just a couple of years, design aids, as they were called, actually became larger revenue producers than the microprocessors.

Intel's marketing strategy was to sell a $5000 development aid which in a year or two could produce orders for $50,000 worth of components. This plan would eventually pay off, but initially it appeared to generate more curiosity than cash: at one point Intel found that it was spending more on printing and mailing operating manuals than it generated in actual microprocessor sales.

A TURNING POINT: THE 8080

The 8-bit 8008 microprocessor had been developed in tandem with the 4004 and was introduced in April 1972. It was originally intended to be a custom chip for Computer Terminals Corp. of Texas, later to be known as Datapoint. Project designers were Hoff, Faggin, Mazor and a newcomer, Hal Feeney. As it developed, CTC rejected the 8008 because it was too slow for the company's purpose and required too many supporting chips. However, Intel offered the 8008 on the open market, where its orientation to data/character manipulation versus the 4004's arithmetic orientation caught the eye of a new group of users.

Melgar



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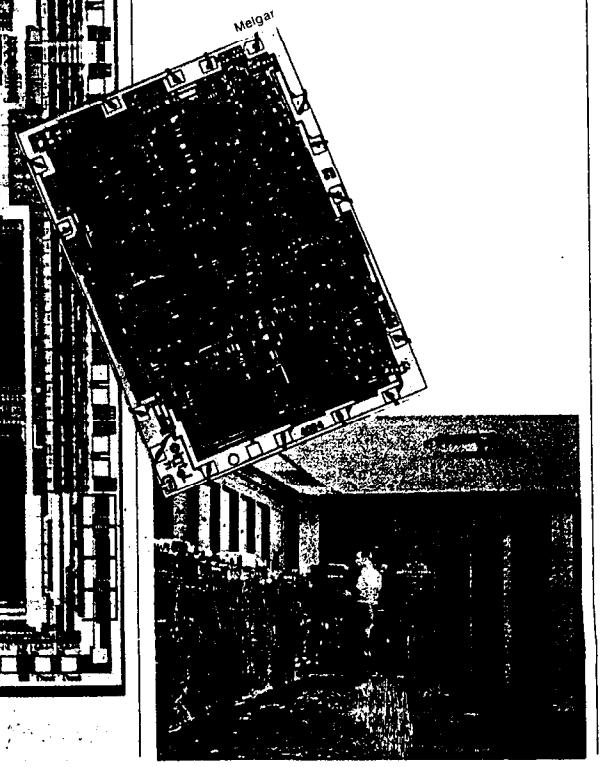


Relative sizes of the 80286 (left) and 4004 microprocessors are shown. The 4004, introduced in 1971, measures 117 X 159 mils (thousandths of an inch) and incorporates about 2300 transistors. The 80286, introduced in 1982, measures 342 X 347 mils and incorporates 130,000 transistors. Microprocessors have far more computing power than ENIAC (below), the first electronic computer, which was built in 1946.

It soon became obvious to Intel and its competitors that there was an almost limitless number of applications for microprocessors. A big advance came in 1974 with Intel's 8080 chip, the first true general-purpose microprocessor.

The 8080 was a much more highly integrated chip than its predecessors, with about 10 times the performance. It could execute about 290,000 operations a second and could address 64K bytes of memory. Both the 4004 and 8008 utilized P-channel MOS technology, whereas the 8080 used the innovative N-channel MOS process, yielding vast gains in speed, power, capacity and density. What's more, the 8080 required only six support chips for operation, as opposed to 20 with the 8008.

The 8080 got its start as a project to speed up the 8008, with Mazor, Faggin and Shima as the engineering team. The idea, as Mazor explained it, was to use the 8008 masks with the process used for the N-channel 2102 RAM at the time. "After a bit of study, we realized we couldn't use the same masks with the new process," recalled Mazor, "so we ran a new mask set. I came up with the instructions in about two weeks, and we proceeded on the N-channel revision."

Shima implemented the 8080 in about a year and the new device was introduced in April 1974 at $360 apiece. "That figure had a nice ring to it," said Dave House, who joined Intel in 1974 and is now vice president and general manager of the Microcomputer Group. "Besides, it was a computer, and they usually cost thousands of dollars, so we felt it was a reasonable price." He added, with a smile: "I think we paid for the R&D in the first five months of shipments." "Those," laughed Gelbach, "were the good old days!"

The market response was enormous and the 8080 soon became an industry standard, creating a vast number of new uses and spawning whole new industries. It quickly erased any doubts about the revolutionary significance of the microprocessor.

Motorola introduced its 6800 about a year later, and its architecture was more familiar to programmers. "But we were ahead of Motorola and faster to produce and deliver," recalled House. "Furthermore, we did a more effective job of selling, using the 'solutions' approach to our customers: 'we've got the support systems and the peripherals to make your product more effective.' " This strategy paid off when Digital Equipment Corporation (DEC) went with the 8080, soon to be followed by other OEMs. "It was the domino effect after that," noted House. "Within six months Intel walked away with the 8-bit market."

FAR-REACHING DECISIONS—THE 8085 AND 8086

In late 1974 Intel management made a major commitment to advance the state-of-the-art in the computer business by designing a unique 16-bit architecture. It was hoped the product, the 432, would yield vast improvements in productivity through a complex multiprocessing architecture.

Meanwhile, competitors such as Motorola and Zilog were applying pressure in the 8-bit market, and it was clear that Intel would have to respond quickly. It did so with the highly successful 8085 microprocessor, a vast improvement over the 8080 because it operated on a single 5-volt power supply, was faster, and integrated more functions.

> *What is remarkable is that many of these people had no more than a year's experience, and yet they brought to market a very complex product [the 8086] in less than 2 years.*
> *—Jean Claude Cornet*

Although the 8085 was a success and remains so today, Intel soon recognized that delays in the 432 program posed a threat to the company's entry into the 16-bit market. It desperately needed a 16-bit device to fill the gap until the 432 was ready. At the same time, Intel wanted to build on the success of the 8080 solutions concept, and position itself as a company with complete solutions, not just components. So, in early 1976 the company decided to embark on a second 16-bit project. The resulting product was the 8086, a 16-bit device with 10 times the performance of the 8080. It was built as an extension of the 8080's architectural concepts, making it easier for customers to use and for Intel to market. The 8086 established a new 16-bit software architecture, and software compatibility became an extremely important strategy in developing and marketing the 80186 and 80286 microprocessors that would follow.

Jean Claude Cornet, who at the time was engineering director for microprocessors, was assigned to manage the 8086 program. In task force fashion, he assembled a close-knit team of specialists recruited from throughout the company. They were led by Bill Pohlman, and included Bob Koehler, John Bayliss, Jim McKevitt, Chuck Wildman and Steve Morse. Because of the time and competitive pressures involved, the team soon grew to 20 or so, which, according to Cornet, was unusual at the time. "What is remarkable is that many of these people had no more than a year's experience, and yet they brought to market a very complex product in less than two years," he said.

Cornet felt that careful definition of the process methodology was the key to the success of the 8086 project. "We did not have the benefit of computer-aided design tools," he said. "Everything had to be checked manually, so we tried to minimize the number of steps through precise planning." He recalled that seven rolls of paper were used to produce a complete drawing simultaneously. The fresco-like piece measured some 25 x 25 feet. The arduous hand process was later coded into computers to speed design work on subsequent devices.

The 8086 hit the market in June 1978 with a multi-page ad featuring a sunrise followed by the "first" 16-bit microcomputer—"the dawn of a new era." "A few minor competitors already had 16-bit products on the market," explained House, "but none of them had support and they weren't considered viable machines."

Although the new processor was introduced with support systems and board level products, it took nearly two years before it

people were concerned. "We were afraid, said House, "that it was a dud. It was too high end, and there wouldn't be enough volume for that kind of product." House recalled being "beaten up" regularly by Andy Grove because forecasts were not met. "But I said at the start it would be a slow ramp because it required new software and nobody had an operating system yet," House explained. And he was right. It was a long development cycle, with customers buying prototype quantities and working in their labs on software programs. But during this period, the 8086 won a lot of designs that did not show up in volume. Then in early 1980 the orders started to climb. "We had been promoting it with seminars and everything, and suddenly the orders rolled in like crazy," recalled House. It appeared that the 8086 was going to lock up the 16-bit market.

OPERATION CRUSH

The 8086 finally took hold, but competition wasn't asleep. Motorola's 68000, introduced about a year after the 8086, had initially proved to be a paper tiger. But by late 1979, the 68000, which many designers thought was a superior product, had developed a growing market. Intel was starting to lose design wins. "We could feel Motorola's momentum in the field," recalled Ken Aupperle, sales engineer at Intel's Atlantic Region office in Hauppauge, N.Y. "But the message wasn't getting through to management on the West Coast." Don Buckhout, Atlantic Region manager, was so alarmed he fired off an 8-page TWX to headquarters detailing the problems and recommending immediate action. By coincidence, Bert Hill, a field applications engineer in Denver, Colorado sent a long memo with the same conclusions postmarked the same day, November 2.

establish the 8086 as the standard in the 16-bit market, it could also be blocked out of the next generation microprocessor market. So management mobilized an all-out attack to make the 8086 and its 8-bit version, the 8088, industry standards.

The code name for the attack plan was Operation Crush, and it was headed by Bill Davidow. Crush team members determined two important factors that would serve as the program's platform: first, what was really important to customers was time-to-market, and that meant having not just a product, but complete solutions with software, peripherals and field support. Intel pushed this concept aggressively by coining the "Intel Delivers Solutions" slogan and promoting it aggressively through advertising, seminars and other promotions. Second, customers looked to Intel for the future. Intel responded by publishing a handbook which described products and systems of the future. Those interested in obtaining a copy had to attend one of the company's many seminars that were held worldwide.

"We set out to generate 100,000 sales leads," recalled Davidow, "and get that down to 10,000 qualified leads resulting in 2,000 design wins during 1980." But by the end of the first quarter only a couple hundred wins had been achieved and there was concern that the sales force would get discouraged. "We developed all kinds of incentives, including a trip to Tahiti, and the enthusiasm and momentum began to build," Davidow said. "The peer pressure in the field was tremendous—you just had to do it—and this was backed by some 50 seminars and advertising."

Bob Brannon, planning and marketing manager on the 432 program at the time, remembered Operation Crush as "all-out combat," complete with war room and a map

integrated onto the CPU a number of functions previously implemented in peripheral chips, producing higher reliability and faster operating speeds at less cost. It was suit-

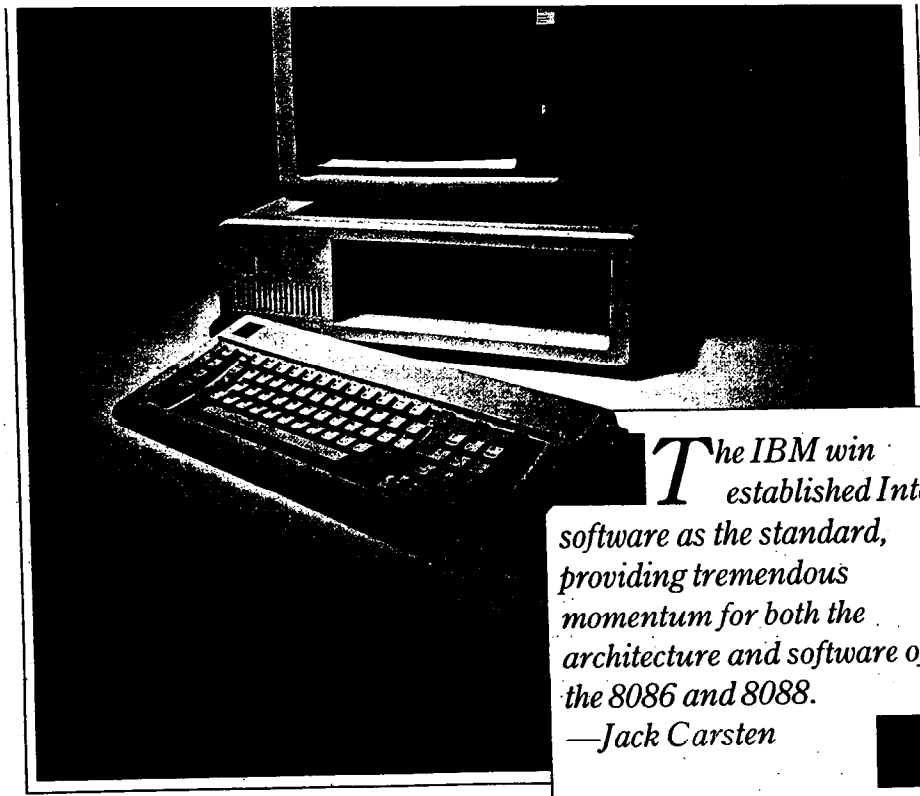
Glynnis Kaye

1982 photograph of Gene Hill, project leader for Intel's 80286 microprocessor which, at the time of its 1982 introduction, offered about three times the performance of any other 16-bit processor on the market.

about the two new processors with outstanding results. "The 80186 went through the roof," House exclaimed. "The acceptance has been incredible." In its first year, Intel produced 30 times as many 80186s as it had 8086s in that processor's first year. Demand also required Intel to ramp up 80286 production quickly after its introduction.

There is scarcely an industry today that isn't affected by this technology. Yet the surface has just been scratched. Ever more powerful processors will evolve that will boost productivity dramatically and lower costs.

Who in 1971 would have imagined an invention as small as the 4004 would have such an impact in so short a time?

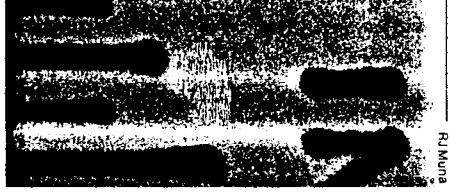


The IBM win established Intel software as the standard, providing tremendous momentum for both the architecture and software of the 8086 and 8088.
—Jack Carsten

The 8748 went into production in early 1977 but, blunted by brisk competition, reported design wins failed to live up to expectations.

The situation improved dramatically

seven to ten years. "If you figure $100 worth of semiconductors per car and nine or ten million cars produced in the U.S. alone each year, you have a tremendous market. The potential is enormous."



RJ Munro

SHOULD WE OR SHOULDN'T WE?

Ford calls it the "world's most advanced automotive computer," regulating a host of engine operations for more responsive performance and improved fuel efficiency for the consumer. It's the EEC-IV (Electronic Engine Control), built with the world's first 16-bit microcontroller, the Intel-designed 8061, and the 8361 RAM/ROM, and is an important component of every 1984 Ford automobile and truck. With the success of the EEC-IV it appears that Intel will enjoy a substantial position in the automotive market for years to come. But getting

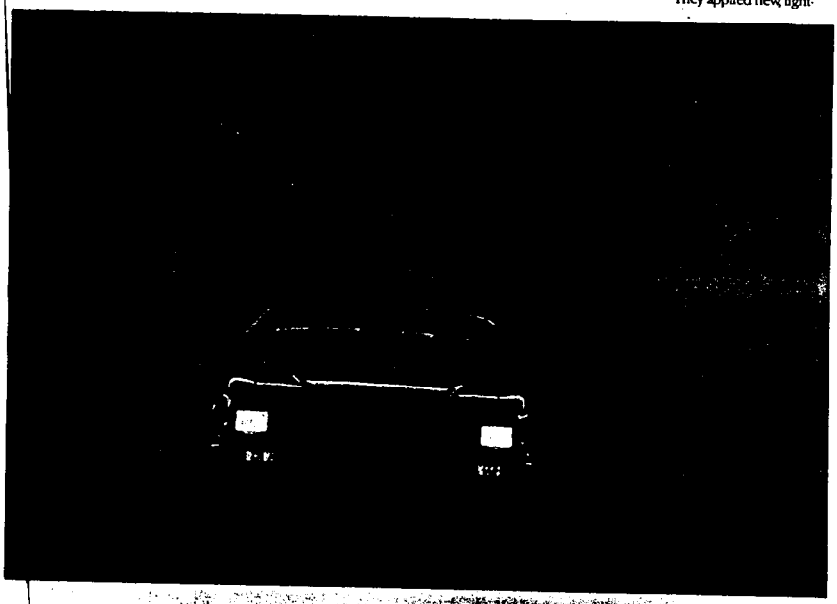
ket, Intel did so with its customary fierce determination. "The shortest corporate objective ever in the history of the company was written that year," recalled Gordon Moore: "'Book Ford.'" Added Dick Boucher, who in 1978 assumed direction of the program, "All we needed were those two words. They needed no explanation; it was very crisp, clean, and short. We've never had an objective that could be clarified so easily with so few words." Continued Boucher, "Our major concern was whether we could handle the demands of a Ford or GM; would they overwhelm our resources? They

developed the 8061, and a contract was signed whereby Intel became the primary supplier to Ford.

Looking back, Boucher remembered tough years. "You can imagine the pressure on the auto manufacturer; the production line has to keep moving," he said. "That pressure is passed along to the supplier, believe me!"

"I can remember," added Ed Gelbach, "in 1983 something like 150,000 automobiles a month were being produced by Ford Motor Company, and if for some reason we couldn't produce those microcontrollers, they would have had to shut

GUESS WHO'S DRIVING YOUR CAR.

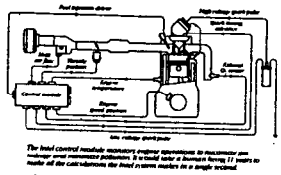


In 1978, domestic auto manufacturers were running into trouble.

Tough new emission standards. Fuel economy guidelines. And the paradox of coaxing more and more performance out of smaller and smaller cars.

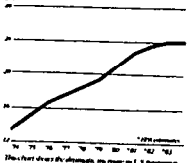
To solve these problems, auto makers arrived at some of the most innovative solutions in their history.

They applied new, light-



weight materials. Inventive combustion techniques. Slippery aerodynamic designs. And the world's most advanced microelectronics to help engines work smarter, not harder.

As a key supplier of products based on this technology, Intel helped automotive engineers use microcomputers and memory circuits to improve engine performance by precisely controlling engine functions.



From spark timing and fuel/air mixture to exhaust recirculation and more.

This leading technology has gained us quite a following.

In fact, chances are good that if you're driving a new car, it's partially driven by Intel components.

One of which is a tiny on-board computer that can process up to 250,000 engine operations per second.

What's down the road?

A microelectronically controlled transmission that continually adjusts itself to the road and driving conditions. Which should improve your engine's performance as much as 30%.

You can also look forward to what's called the "body computer." A group of highly sophisticated microprocessors and microcontrollers that govern comfort and safety features. Features like anti-skid and anti-theft systems, active suspension controls, speed-sensitive steering, even a radio that changes channels when you tell it to.

We helped pave the way for these new developments long ago with industry standards we pioneered. And these standards insure that everything we make – components, systems and software – works together. And the same goes for anything we plan to make.

So adding new capabilities won't be like reinventing the wheel.

With this kind of technology, you're going to see an auto industry driven by almost constant innovation and improvement.

And we can do the same thing for your business.

We have the keys.

intel

there was an agonizing experience that started in the mid-1970s.

"It took an enormous investment in the early going," recalled Bob Noyce. "We asked ourselves over and over whether we should be in the automotive business or not. Then we'd say that we had to be in the business regardless of cost."

The ambivalence was an understandable reaction from semiconductor engineers, who had seldom ventured that close to consumer products, and who viewed with alarm the escalating expenditures.

But once the decision was made in 1976 to pursue the automotive mar-

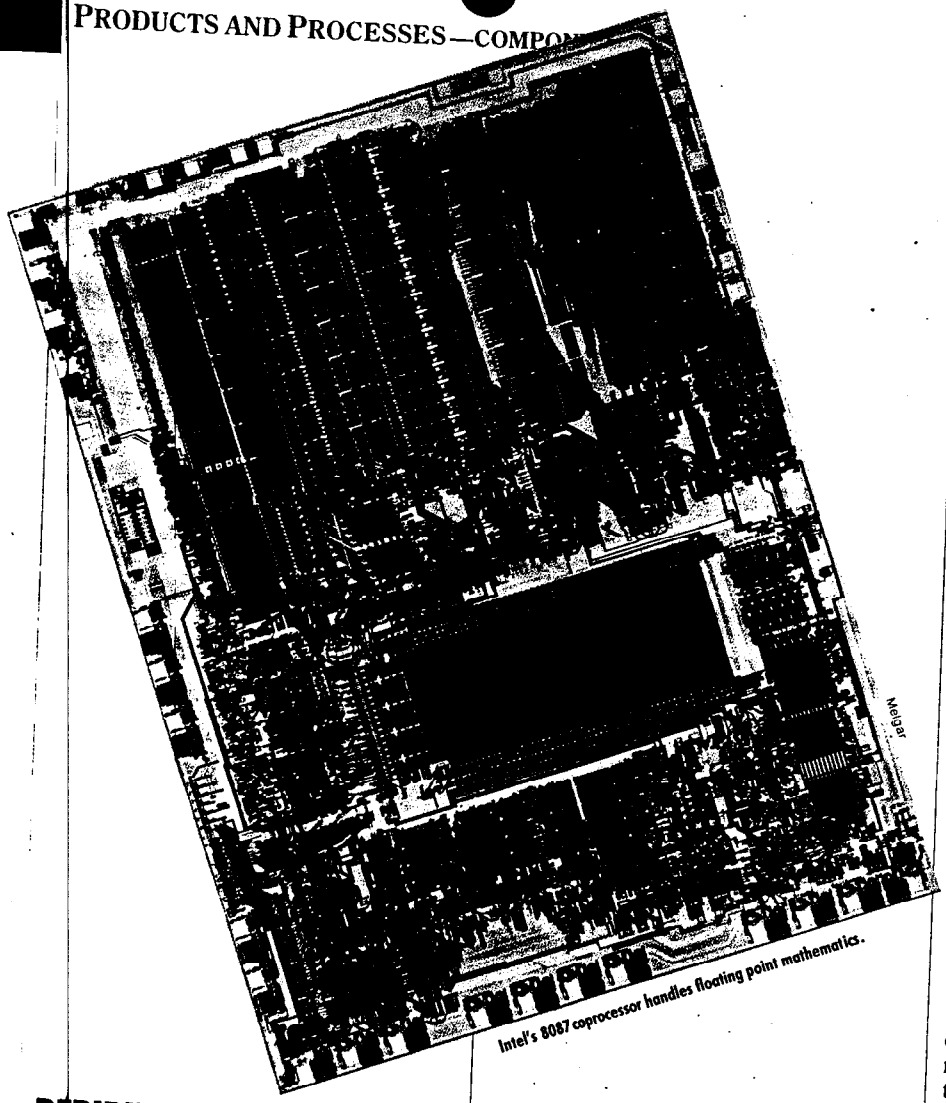
didn't understand the semiconductor business, and we had a lot to learn about the exacting needs of auto production."

Boucher defined Intel's role as that of a technology resource to develop devices for total engine control. He and his group set up their own quarters and did their homework, working with a number of companies.

In 1981 Intel's first design, the EEC-III microcontroller, was used on a limited number of Fords. But Ford wanted a more sophisticated system, and Intel negotiated with Ford for a lead position in the EEC-IV program. The Automotive Engineering Operation

down their assembly line and lay off about 40,000 people. I'm proud to say that Intel came through; the line never went down."

The demanding pace and the investment over a period of some eight years is now paying off. Intel now supplies powerful microcontrollers, microprocessors, and memories to a veritable Who's Who of automotive companies. These increasingly elaborate, sophisticated systems—controlling powertrain, instrumentation, and auto body functions—will vastly improve the comfort, convenience, operating cost, and safety of cars of the future.



Intel's 8087 coprocessor handles floating point mathematics.

PERIPHERALS FOR THE TOTAL SOLUTION

As applications for Intel microprocessors increased steadily in the mid-1970s, it became necessary to integrate more functions onto the devices to lower costs and improve performance. The company answered this need by designing and building peripheral controller chips that interfaced with the CPU to perform various functions.

Among the early devices introduced beginning in 1975 were the 8255, 8253 and 8251 programmable chips. Other significant early products included the 8275 CRT controller and the 8271 floppy disk controller.

Peripherals have become a major revenue producer for Intel. The company's growing array of peripheral chips has expanded significantly the range of functions made possible with Intel microprocessors and increased their performance. By integrating more and more functions, these devices cut software costs and enable customers to bring their products to market faster.

An important impetus to the growth of Intel's peripheral business was the introduction of the coprocessor in 1980. A coprocessor is specialized hardware that acts as an extension of the host CPU to handle specific high-performance functions. This has the effect of offloading from the CPU specialized tasks more effectively handled by the coprocessor. The 8087 coprocessor, for example, makes it possible to solve difficult mathematical problems on the iAPX 86/88 system that formerly had to be solved on large higher-cost minicomputers or mainframes. It does the computation about 100 times faster than equivalent numeric software running directly on the microprocessor.

Intel now offers a number of coprocessors so that customers can economically select combinations to match their performance requirements. These include the 8089 I/O channel processor for data movement, the 82586 for data communications, and the 82730 text processor. The latter device was introduced in 1983 and was aimed at applications in word processing terminals, personal and small business computers, non-impact printers and typesetting systems.

The coprocessor was a remarkable engineering achievement, and many people played important roles during its development. The concept grew out of the 8086 program directed by Jean Claude Cornet beginning in 1976. Bill Pohlman, 8086 project manager, defined a floating-point extension to the 8086. His work resulted in the 8087 systems interface architecture. John Bayliss and Bob Koehler share a patent for the "functional partitioning" that the iAPX 86/88 uses to distribute computing capacity among a number of processors.

John Palmer and Bruce Ravenel were responsible for the 8087's initial architectural design and software technology. In 1978, the 8087 project was sent to Intel Israel for implementation. "The design and architecture documentation on the 8087 were solid," recalled Cornet, "and we felt this would be a good opportunity for the Israel team to run with a project."

Under Rafi Nave, now general manager of Intel Israel Design Engineering, the logic and circuit designs were completed. Palmer, Ravenel and Nave share a patent for the invention of the 8087 math coprocessor.

The 8087 returned to the Microprocessor Operation in Santa Clara for production and test. The 8087 was the first implementation in silicon of the IEEE standard for floating-point mathematics. It was so innovative that three years after its introduction, competition still hadn't come out with a similar product.

Noted Cornet: "There is no question that the 8087 hastened the success of the 8086 family of microprocessors. Coprocessor performance was identified early on as one of the 8086's major selling features."

The 8087 was improved and now is also compatible with Intel's 8088 and 80186 microprocessors. It also established the technology for the coprocessors that would follow to provide even greater software integration—the 82720, 82730 and 82586.

Said Ted Jenkins, general manager of Intel's Peripheral Components Operation, "The coprocessor is an important step in performing specific functions. It eliminates the need for extensive software routines, and thus reduces software costs. As microcomputers become more powerful and applications more complex, the development of specialized peripherals and coprocessors will have to keep pace."

Intel's selection of more than 60 peripherals and coprocessors is the largest of any semiconductor manufacturer. This broad line of products is integral to Intel's philosophy of providing the "total solution" for its customers.

It [the 8087] was so innovative that three years after its introduction, competition still hadn't come out with a similar product.

THE EPROM: A BIT OF ELECTRONIC MAGIC

From its startup days, Intel has been responsible for many breakthroughs in integrated circuits. Few were more significant—and more unexpected—than the EPROM, the acronym for a mouthful of a chip name: the erasable programmable read-only-memory.

Intel introduced the world's first EPROM in January 1971. It is a read-only-memory (ROM) with a special difference: its program can be erased by ultraviolet light. ROMs are permanently programmed by the semiconductor manufacturer during the fabrication process. Thus, every ROM program change requires a new mask. EPROMs give designers greater flexibility because they are programmed electrically and can be erased by exposure to ultraviolet light and reprogrammed again and again.

At the time, no one imagined the role the EPROM would play in electronics history. Soon, this device would become a key to the microprocessor revolution.

Glynnis Kaye

1982 photograph of Dov Frohman, who invented the world's first EPROM, the 1701, which was introduced in 1971.

SERENDIPITY

When physicist Dov Frohman joined Intel from Fairchild in 1969, he worked on the MNOS concept—metal-nitride oxide—with which he was familiar. This was an MOS device project, yet it was significantly different in terms of process technology, requiring a source of silicon nitride. Many frustrations were encountered in processing the MNOS runs, however, so the company began to focus more on the silicon gate MOS process. Frohman turned his attention specifically to reliability problems the company was having with that process. He concluded that disconnected or floating gates could be the cause of some of the device failures. As he worked to solve the problem, Frohman had the inspiration that the floating gate phenomenon might be the basis for a memory, and, as he thought more about it, a memory that could be programmable and erasable. "Call it serendipity if you want," commented Les Vadasz, who was Frohman's supervisor at the time, "but we really backed into the EPROM. The origin of the whole thing was an attempt to explain a process problem, and Dov deserves all the credit for recognizing what we had and utilizing it to create a new memory concept."

The novel device—a floating gate memory—stored a charge permanently, which was a major breakthrough. Previously, devices required a constant power supply to maintain the memory function, and if power was lost, the devices had to be reprogrammed.

Frohman arranged for a demonstration of the new device in Gordon Moore's office. "We put together a 16-bit array with primitive transistor packages sticking out of the 16 sockets, an oscilloscope and pulse generator," he recounted, "and we carted all this into Gordon's office. There were red bulbs to indicate the bits. This was all new to us, and we were thrashing around. We showed Gordon that by pushing the button you could program the device, and we demonstrated that it would hold a charge."

Moore must have sensed a potential for the product because he made the commitment to proceed with development of the 1601, a 2K-bit programmed memory. Soon after Intel engineers understood the mechanism of the process, it was determined that the memory in the device could be erased by applying UV rays. This was a major innovation because the same memory device could then be reprogrammed. A glass window was added to the 1601 to allow the erasure, and another new product resulted—the 1701 EPROM.

> *. . . Frohman had the inspiration that the floating gate phenomenon might be the basis for a memory, and, as he thought more about it, a memory that could be programmable and erasable.*

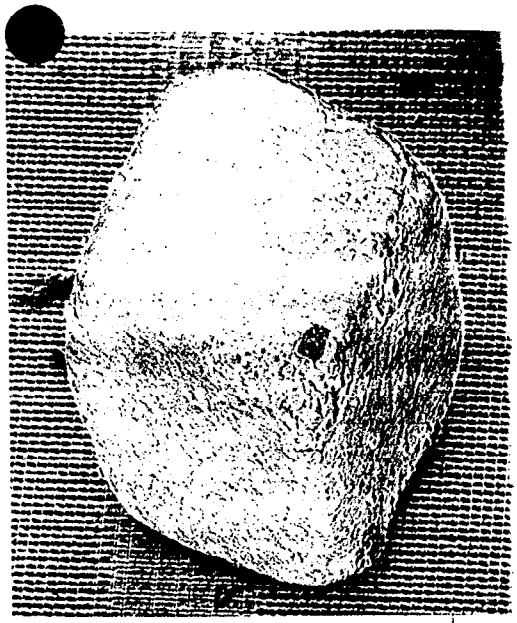
EARLY TESTING

Tom Rowe, Gene Greenwood and Greg Pasco were among those who worked to develop a product from the original concept. Frohman remembered that one of the problems they encountered was the size of the product. "It was 50 percent bigger than any chip Intel had made, and we had problems with our work table—it wasn't big enough to hold the mask layout photographic reductions for checkout," he recalled. "We had to piece four pieces together for each mask layer and that was crazy. Then it all had to be aligned, but finally we managed to improvise and get the masks prepared."

In September 1970 the team finally produced some devices and began testing. "In the second week we saw life and it was clear that we had a functional device," Frohman recalled. "We put the device on display and people were in disbelief. It dawned on them that this was for real."

But would the new device with a transparent lid retain memory for an extended period of time? That was the concern of both Intel and potential customers. Gerry Parker, who was involved in the reliability testing of the product, remembered, "Our biggest concern was that there was no way to prove that the product would not fail ten years out, because we didn't understand what might cause such failure." Despite numerous accelerated life tests, that was one question that could only be answered with time.

Then someone had an inspiration: where was there an environment severe enough to prove that this device would not lose its memory just sitting around in room light? The answer: "We charged the memories and put them on the roof in the bright sunlight. We measured them week after week, and they passed the test," said Vadasz.



Scanning Electron Microscopic view of a common table salt crystal resting on Intel's high-density 27128 EPROM. Each of the 27128's 131,072 cells measures approximately 7 microns (7 millionths of a meter) across, in contrast to the average salt crystal's 300 microns.

A DRAMATIC DEMONSTRATION

Intel introduced the EPROM technology with a dramatic presentation at the February 1971 International Solid State Circuits Conference in Philadelphia. To demonstrate the EPROM's erasable feature as vividly as possible, the company produced a film. Gordon Moore remembered it and the audience reaction well:

"The movie showed a pattern of bits being erased—bit by bit, this sea of dots would disappear until only an Intel logo remained. With continued UV the last bits gradually faded until one single, persistent bit was left. Finally, it too disappeared, and the audience burst into applause. It was spectacular!"

WHAT DO WE DO WITH IT?

Although the film demonstration was a smash hit, Intel still wasn't sure what it had with the 1701. "It was just another kind of memory at the time," recalled Moore, "and people saw it as an R&D device." It was not until the advent of the microprocessor that the real significance of the EPROM was realized. The microprocessor created a demand for memory, and the fact that engineers could test and reprogram memories with the EPROM accelerated the development of the microprocessor. There was a synergistic relationship between the two.

"In retrospect," explained Moore, "the EPROM is probably as important in the development of the microcomputer industry as the microprocessor itself. But at the time, that certainly wasn't our idea. They were different but happily concurrent developments."

Ed Gelbach remembered that when he joined the company in mid-1971 the EPROM was a rather mundane product and that nobody knew what to do with it. He increased the price and advertised it as a prototype device, and it started to become profitable. But it was not until the EPROM tied in with the microprocessor that it really took off. Recalled Gelbach, "It made sense to be able to reprogram the microprocessor instead of buying fixed ROMs for it. You could change your system overnight or every five minutes with an EPROM."

THE NAKED RUNNER

With each new generation of ROMs cramming more and more memory onto a single chip, Intel introduced denser EPROMs. In 1975 the company introduced the 8K 2708, the first N-Channel EPROM. But it was the 2716 with its 5-volt power supply that was to become an industry standard. Introduced in 1977, the 2716 was compatible with any microprocessor system, greatly broadening its application potential.

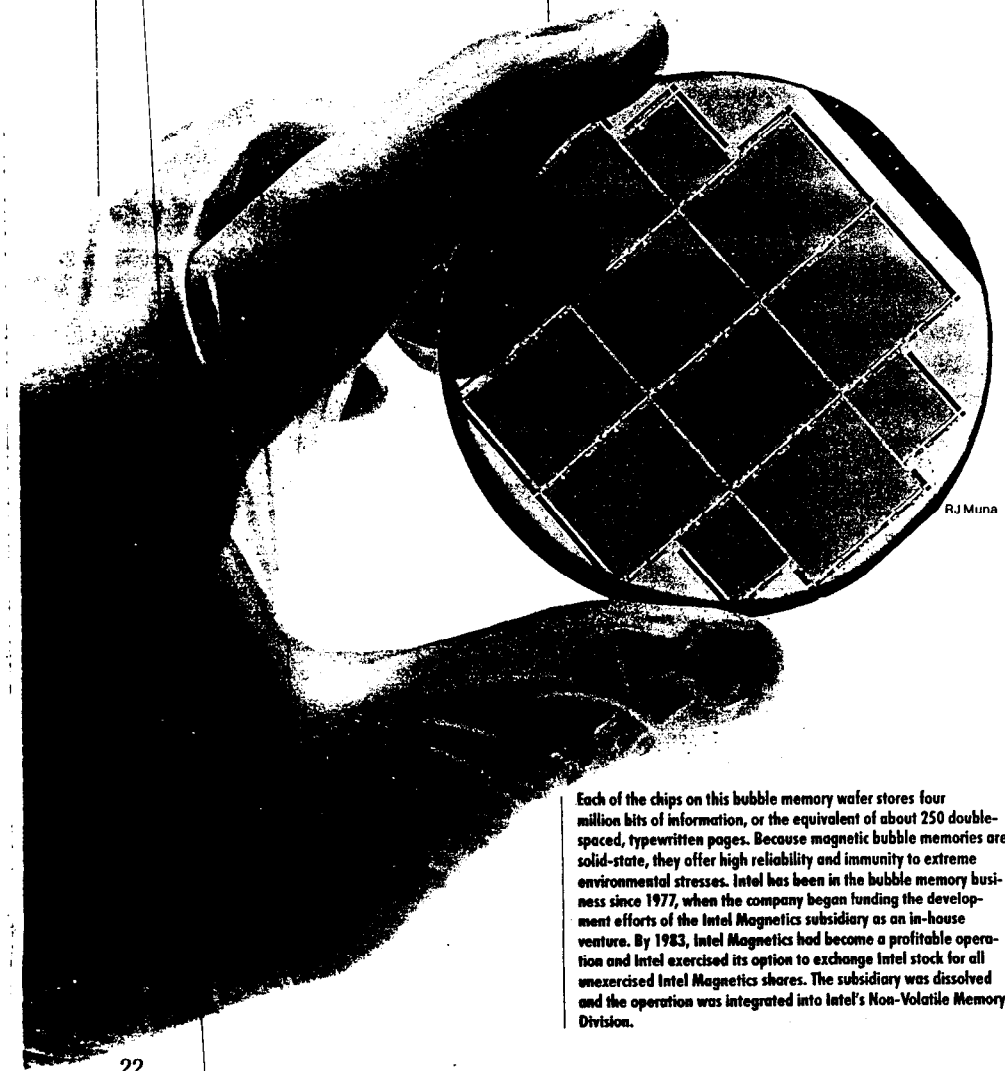
Almost overnight the 2716 gained wide acceptance in production, and the market ignited. "It was a huge success for a couple of years," recalled George Schneer, now vice president and general manager of the Non-Volatile Memory Division. "What's more, we had a lock on the market because competitors had trouble executing the floating gate technology." But the 2716 was also a "naked runner"; it was all alone in front of the pack, and if not improved, would soon get trampled by the competition. Intel tried to keep ahead with a new process design for a 32K and 64K EPROM, but the early yields on these devices were poor and competition arrived on the 16K scene with a vengeance. As competition increased and prices dropped, Intel soon found itself "wallowing in the pricing mud with the others, trying to protect market share," as Schneer put it.

By late 1980 Intel's EPROM business was in trouble. Prices had fallen by as much as 75 percent. What was more, the company faced a severe economic downturn with a newly completed plant with capacity to burn—Fab 6 at Chandler, Arizona.

GAMBATI!

The first step out of this grim situation was the formation of a 2764 task force with members from the Programmable Memory Operation and Technology Development as well as Harry Hollack and Ed Boleky of Fab 6.

From a product standpoint, the key to the aggressive program the task force launched was the use of new wafer stepper technology. The Technology Development group in Santa Clara had used the 2764 in its development work with the stepper process, reducing die size and producing dramatically



Each of the chips on this bubble memory wafer stores four million bits of information, or the equivalent of about 250 double-spaced, typewritten pages. Because magnetic bubble memories are solid-state, they offer high reliability and immunity to extreme environmental stresses. Intel has been in the bubble memory business since 1977, when the company began funding the development efforts of the Intel Magnetics subsidiary as an in-house venture. By 1983, Intel Magnetics had become a profitable operation and Intel exercised its option to exchange Intel stock for all unexercised Intel Magnetics shares. The subsidiary was dissolved and the operation was integrated into Intel's Non-Volatile Memory Division.

higher yields at substantially lower costs than with projection aligners. So the decision was made to install stepper equipment in Fab 6. "They were vibrating down there," Schneer said excitedly. " 'Give us something to do,' they cried. So we gave them something to do: come up on wafer steppers!" The new fab ramped up production of the 2764 rapidly, meeting extremely aggressive yield and reliability goals.

A new process, new product, new plant and new people. "It was high risk, bet your company, bet your division!" exclaimed Bob Derby, then the operation's director of marketing.

The marketing plan was equally innovative: introduce the 2764 in Japan. "Our backs were against the wall, so it was time to stand and fight," said Derby. "The Japanese have a word for it—'Gambati.' " Derby, who had been sales manager in Japan in 1979-'80 and understood their culture, explained the strategy: "We had a hot new product; why not introduce it right in our strongest competitor's backyard? This would have great shock value, particularly if we could show them that we had superior cost advantage."

Howard High

1980 photograph of Harry Hollack, who led the 1980 start-up of Fab 6 in Chandler, Arizona. Fab 6 contributed significantly to Intel's leadership in the EPROM marketplace by ramping up production of Intel's 2764 EPROM, and meeting extremely aggressive yield and reliability goals almost immediately after start-up.

With "Gambati" as their rallying cry, the 2764 task force members galvanized into action for their all-out assault. Recalled Derby, "We were first with the wafer steppers, we had a great product, and the marketing penetration plan was right on. Everyone had something to win with—design, test, fab, sales—and it caught their imagination."

By mid-1981 Fab 6 had turned out hundreds of thousands of the new EPROMs and output was doubling every quarter.

NEWER GENERATIONS

The success of the 2764 program in 1981-82 reinforced Intel's leadership in EPROMs. Technologies applied to shrink the 2764 and make it a more cost-effective part were used to revitalize the 2732 and build the next-generation 27128. Even newer technologies were used to develop the 256K 27256, introduced in 1983, and a 512K family in 1984.

"In the past," commented Jack Carsten, senior vice president and general manager, Components Group, "we were often the first to market with a product, then withdrew when competitors caught up. Now we redesign older products using newer technologies, while simultaneously developing high-complexity new parts. This strategy has the additional advantage of helping the fabs fine-tune newer processes and maximize use of available capacity.

Summarized Schneer, "With our new technologies we've broken out of the naked runner syndrome. Now Intel competes with a number of EPROM densities—upgraded older parts and newer ones—and we do it cost-effectively."

PRODUCTION EPROMS

By late 1983 Intel's 64K EPROM had become the highest demand EPROM on the market. Because of its flexibility, the EPROM had actually become the preferred read-only memory for system production, not just for system development.

To be able to build more production EPROMs, Intel introduced the 64K EPROM in a windowless plastic package. In the same amount of time, up to 10 times more dice can be assembled in plastic over traditional windowed packages. However, the "windows" which allow programs to be erased cannot easily be put in plastic packages.

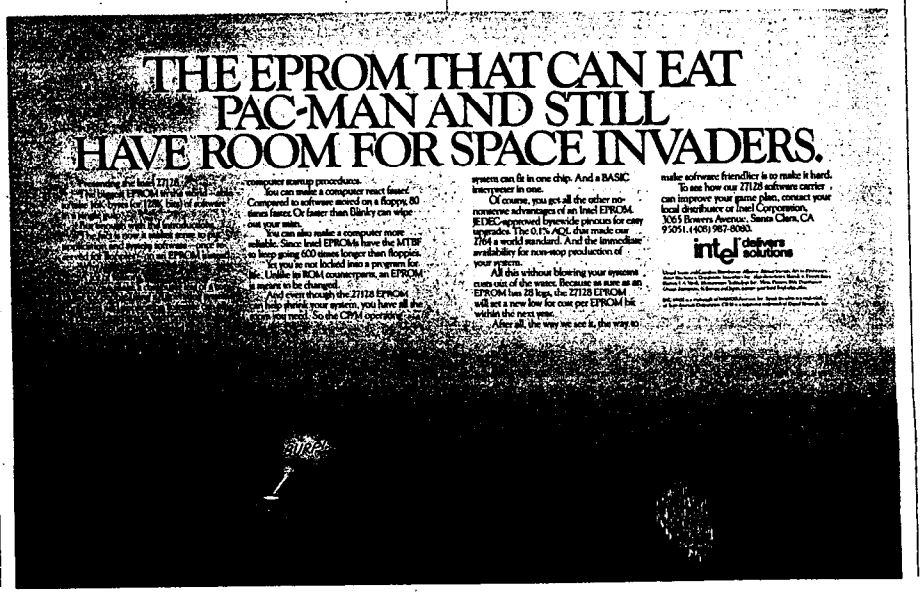
"This lack of erasability does not cause problems for the 80 percent or more EPROMs that are used in system production," explained Larry Palley, marketing manager for EPROMs. "By the time a manufacturer goes into production there really isn't any need to erase an EPROM. Most of an EPROM's flexibility is its ability to be programmed by the user. Once in production, the user can buy the unprogrammed production EPROMs in plastic and program in the fully tested code. The plastic parts are less expensive and more durable than standard EPROMs and provide inventory flexibility impossible with masked ROMs."

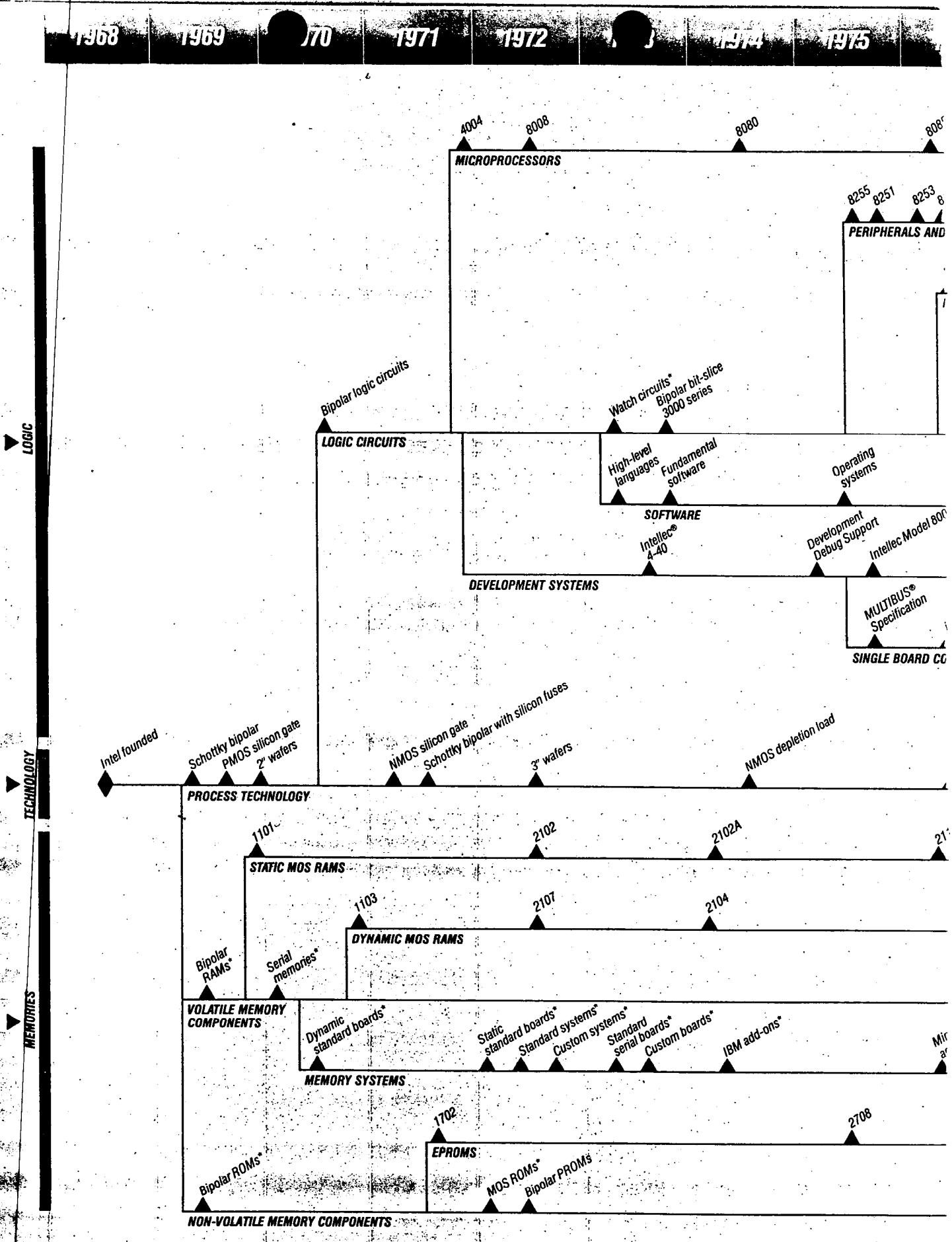
A NEW KIND OF EPROM

In 1980, after years of development work, Intel introduced the 2816 E^2PROM, an electrically erasable read-only memory, another industry "first." The 2816 can be electrically reprogrammed in the field without removal from the host equipment and can even be reprogrammed remotely via a radio or telephone link. This flexibility permits OEM or end-user engineers to realize applications that were either impossible or prohibitively expensive with previous devices.

"Many of our customers can't afford the time or expense of removing and reprogramming an EPROM and putting it back in their equipment," explained Schneer. The military, for example, needs to be able to change programs in the field under difficult conditions, but they don't want their sensitive, high-tech gear taken apart to reprogram parts. Industrial operations such as a lathe or drill press often change programs several times a day. "With the 2816, any technician can plug in a cable, erase an old program and electrically punch in a new one right on the job," said Schneer.

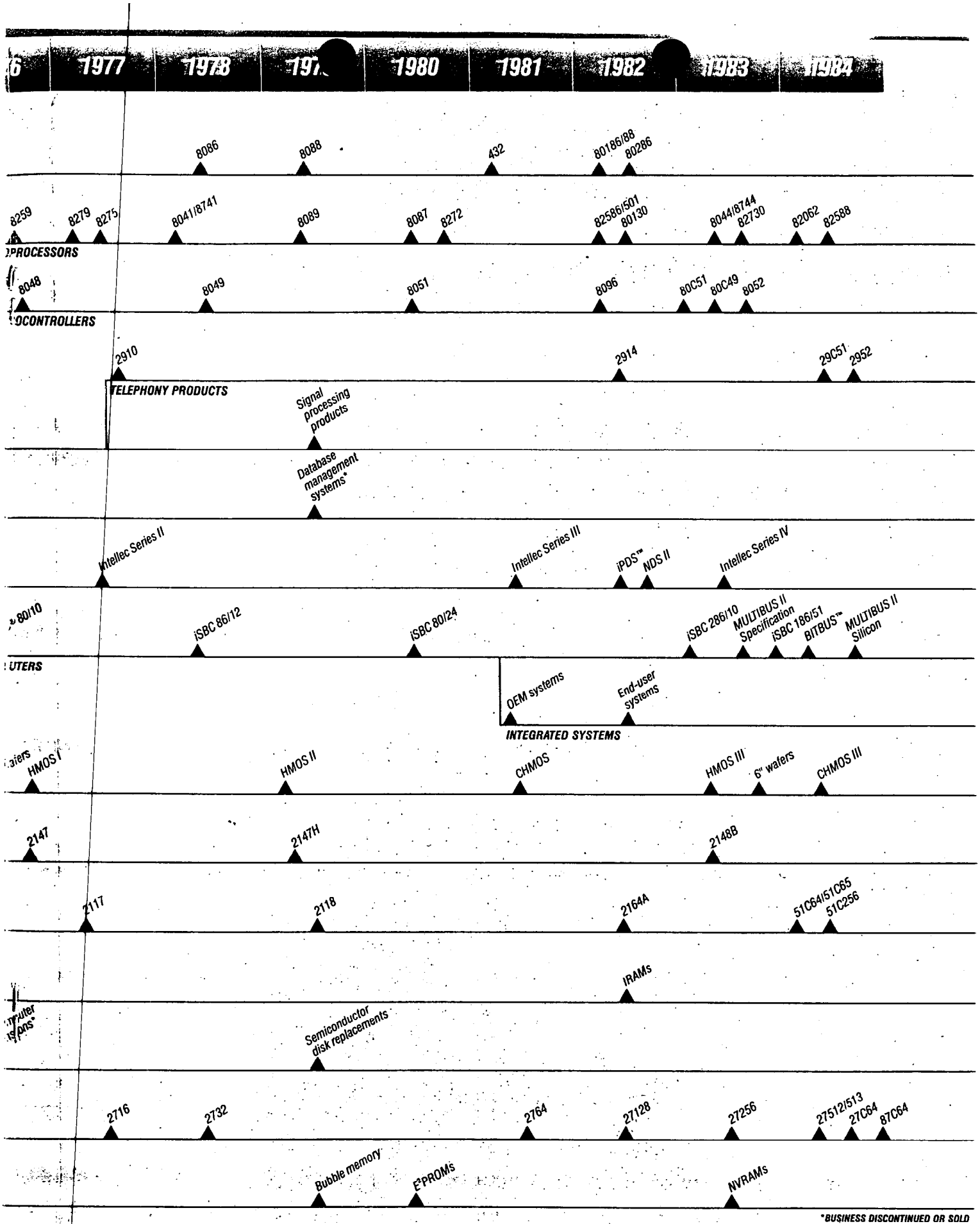
With innovations such as the E^2PROM, Intel continues to dominate the reprogrammable memory market. And to think it all started with the failure of the nitride-oxide project.





INTEL PRODUCT FAMILY TREE Intel's Product Family Tree diagrams the evolution of Intel's product groups and technologies.

Major product families (e.g. microprocessors, single board computers, and EPROMs) are shown on branches in the logic and memory sections. Smaller product families and a few important



products are called out on the branches at their appropriate chronological points of introduction. Discontinued product lines are marked with asterisks.

The table at the right provides more complete detail in all product families. In the interest of space, complete product lines could not be included in every category in the table. Similarly, industrial or military grade products are not specifically designated, and all generations of every product are not listed.

LOGIC CIRCUITS

Bipolar Logic Circuits
1970—3205 1-of-8 decoder
1970—3404 6-bit latch
1971—3207 driver for 1103
1971—3405 3-bit CTL register
1971—3406 4-bit CTL register
1973—8224 oscillator
1974—8/3212 multi-mode latch buffer
1974—8/3214 interrupt control unit
1974—8/3216 parallel bus driver
1974—8/3226 parallel bus driver
1978—82284 oscillator
1978—8288 bus controller
1978—8202 DRAM controller
1978—8282 latch buffer
1978—8286 octal buffer
1978—8287 octal buffer
1978—8283 latch buffer
1979—8289 bus arbiter
1981—8203 DRAM controller
1982—82284 clock chip for 80286

Microprocessors
1971—4004 first microprocessor, 4-bit
1972—8008 first 8-bit
1974—8080 industry standard 8-bit
1976—8085 8-bit
1978—8086 industry standard, 16-bit
1979—8088 industry standard, 8-bit
1981—32 32-bit operands
1982—80188 high-integration 16-bit, 8-bit bus
1982—80186 high-integration 16-bit, 16-bit bus
1982—80286 high-performance 16-bit

Watch Circuits
1973—5801 timer/oscillator
1973—5201 LCD driver
1975—5203 LCD driver
1975—5810 first single-chip
1976—5814 4-digit LCD
1976—5816 6-digit LCD
1976—5830 6-digit LCD + chronograph
Business sold, 1978

Bipolar Bit-Slice 3000 Series
1973—3001 microprogram control unit
1973—3002 central processing element
1973—3003 look-ahead carry generator

Peripherals and Coprocessors
1975—8255 programmable peripheral interface
1975—8251 programmable communication interface
1976—8253 programmable interval timer
1976—8257 DMA controller
1976—8259 programmable interrupt controller
1977—8279 keyboard/display interface
1977—8271 floppy disk controller
1977—8275 programmable CRT controller
1977—8273 programmable protocol controller
1978—8041/8741 universal peripheral interface, 8-bit
1979—8089 8/16-bit I/O processor
1980—8087 first numeric coprocessor
1980—8272 floppy disk controller
1981—8274 multi protocol serial controller
1981—8206 error correction
1981—8207 DRAM controller
1982—82586 first LAN coprocessor
1982—82501 bipolar ethernet serial interface
1982—82285 clock chip for 82586 and 82730
1982—82288 bus controller for 80286
1982—80130 iRMX™ 86 kernal in silicon
1982—80150 CP/M* in silicon
1982—80287 numeric coprocessor
1983—82720 graphics display controller
1983—8044/8744 RUPI™
1983—82730 display coprocessor
1983—82731 bipolar video interface controller
1984—8256AH MUART
1984—8208 DRAM controller
1984—82258 ADMA controller
1984—82289 bus arbiter
1986—82062 Winchester disk drive controller
1986—82588 single-chip LAN controller
*CP/M is a trademark of Digital Research, Inc.

Microcontrollers
1976—8748 single-chip microcomputer with EPROM, 8-bit
1976—8048 8-bit
1977—8021 low-cost 8-bit
1978—8049 8048 with twice as much RAM/ROM
1978—8022 on-chip 8-bit A/D converter
1980—8051 advanced 8-bit
1980—8751 8051 with EPROM
1981—8749 high-performance 8-bit with EPROM
1982—8096 16-bit microcontroller
1982—8061/8361 16-bit kit for Ford
1983—80C51 CHMOS version of 8051
1983—80C49 CHMOS version of 8049
1983—8052 8051 with twice as much RAM/ROM

Telephony Products
1977—2910 first single-chip codec
1977—2911 single-chip codec
1978—2912 first single-chip filter
1982—2914 combination codec/filter
1984—29C51 CHMOS advanced telecommunications controller
1984—2952 integrated I/O controller
1984—2970 single-chip modem

Signal Processing Products
1979—2920 first signal processor
1982—2921 ROM signal processor

SOFTWARE

High-Level Languages
1973—PL/M first language for microprocessor
1976—microprocessor resident PL/M 80
1978—FORTRAN 80
1978—PL/M 86
1981—PASCAL 86
1982—PL/M 286
1981—FORTRAN 86
1982—PL/M 51
1983—C 86
1983—PASCAL 286
1984—PL/M 96

Fundamental Software
1973—8080 assembler and linkage tools
1975—EDIT
1977—8048 assembler
1978—8086/88 assembler and linkage tools
1979—8089 assembler
1979—CREDIT™
1980—8051 assembler and linkage tools
1982—program management tools
1982—80286/287 assembler and linkage tools
1983—AEDIT
1983—8096 assembler and linkage tools

Operating Systems
1975—ISIS operating system
1982—iNOX operating system
1982—XENIX* 86 operating system
1978—iRMX™ 80 real-time multitasking operating system
1980—iRMX 86 real-time multitasking operating system
1981—iRMX 88 real-time multitasking operating system
1983—XENIX 286 operating system
1984—iRMX 51 operating system
1984—iRMX 86 operating system, release 6
*XENIX is a trademark of Microsoft Corp.

Database Management Systems
1979—SYSTEM 2000®
Business discontinued, 1984

SYSTEMS

Development Systems
1972—SIM 4, SIM 8
1973—Intellec® 4-40
1973—Intellec 8-80
1975—Intellec Model 800
1975—UPP 103 prom programmer
1977—Intellec Series II
1980—NDS I network development system
1981—Intellec Series III
1981—iUP 200/201 prom programmer
1982—iPDS™ personal development system
1982—NDS II network development system
1983—ISIS cluster
1983—Intellec Series IV

Development Debug Support
1975—ICE™-80 in-circuit emulator
1977—ICE-48
1977—ICE-85
1978—ICE-86
1980—ICE-88
1981—PSCOPE
1981—ICE-51
1982—EMV-51
1983—I²ICE®
1984—SBE 96
1984—PSCOPE/iRMX 86

Single Board Computers (iSBCs)
1975—MULTIBUS® specification
1976—iSBC® 80/10 single board computer
1977—iSBC 544 intelligent communication controller
1978—iSBC 80/30 8085-based single board computer
1978—iSBC 86/12 8086-based single board computer
1979—iSBC 576 digital I/O board
1979—iCS family (industrial control family)
1980—iSBC 80/24 SBC with iSBX™ connectors
1980—iSBX expansion specification
1981—iSBC 88/25 8088-based single board computer
1981—iSBC 550 Ethernet communication controller
1982—iSBC 570/576/577 speech transaction family
1983—iSBC 286/10 80286-based single board computer
1983—MULTIBUS II specification
1983—iSBC 186/51 COMMputer™
1984—BITBUS™ distributed control modules
1984—MULTIBUS II silicon

OEM Systems
1981—System 86/3XX
1983—System 286/3XX

End-User Systems
1982—iTPS transaction processing system
1982—iDIS™ database information system
1982—iDBP™ database processor

VOLATILE MEMORY COMPONENTS

Bipolar RAMs
1969—3101 first Intel product, 64-bit
1970—3102 partially decoded, 256-bit
1970—3104 content addressable, 16-bit
1973—3106/7 fully decoded, 256-bit
Discontinued, 1979

Static MOS RAMs
1969—1101 MOS LSI, 256-bit
1972—2102 5V, 1K
1974—2102A depletion load, 5V, 1K
1974—5101 CMOS, 1K
1976—2114 industry standard, 4K
1976—2115 HMOS I, 5V high speed 1K
1976—2147 HMOS I/II, 55ns, 4K
1979—2147H HMOS II, 35ns, 4K
1983—2148B HMOS III, 35 ns, 4K

Dynamic MOS RAMs
1970—1103 1K
1971—2105 1K
1972—2107 4K
1974—2106 4K
1974—2104 4K
1975—2116 16K
1977—2117 16K
1979—211B first 5V HMOS, 16K
1982—2164A 16-pin, 5V, 64K
1984—51C64/51C65 CHMOS, 64K
1984—51C256 CHMOS, 256K

Serial Memories
1970—1401 shift register, 1K
1970—1402/3/4 shift register, 1K
1970—1407 dynamic shift register, 200-bit (Dual 100)
1972—2401/2/3/4 5V shift registers, 2K
1975—2416 charged couple device, 16K
Discontinued, 1977

Integrated RAMs (IRAMs)
1982—2186/87 64K
1984—51C86/87 64K CHMOS

NON-VOLATILE MEMORY COMPONENTS

Bipolar ROMs
1969—3301 1K-bit
Discontinued, 1976

EPROMs
1971—1702 first EPROM, 2K
1975—2708 8K
1977—2716 16K
1978—2732 32K
1981—2764 64K
1982—27128 128K
1983—27256 256K
1983—production EPROM (plastic pkg.)
1984—27512/513 512K
1984—27C64 CHMOS, 64K
1984—87C64 latched version CHMOS, 64K

MOS ROMs
1972—1302 2K
1974—2316 16K
Discontinued, 1980

Bipolar PROMs
1972—3601 1K
1974—3604/24 4K
1976—3608/28 8K
1979—3616/36 16K
1981—3632 32K

Bubble Memory Subsystems
1979—BPK 70 1 MBit
1980—iSBC 250 1 MBit board
1981—iSBC 254 1-4 MBit MULTIBUS board
1982—iSBC 251 1 MBit MULTIMODULE™ board
1982—BPK 74 4 MBit
1983—BPK 70-5 1 Mbit
1984—BCK 10-1/-4 bubble cassette kit

E^2PROMs (Electrically Erasable PROMs)
1980—2816 E^2PROM, 16K
1982—2817 16K
1983—2817A 5V, 16K

NVRAMs (Non-Volatile RAMs)
1983—2004 5V, 4K
1984—2001 5V, multiplexed 1K

MEMORY SYSTEMS

Dynamic Board-Level Standard Memory Systems
1970—MU-10 (1103)
1973—MU-40 (2107)
1977—MU-1600 (2116/2117)
1979—MU-91 (2117)
1980—CM-90 (2117)
1980—MU-91 (2164)
1982—CM-90 (2164)
(MU—Memory Unit; CM—Control and Memory)
Business sold to Zitel, 1983

Static Board-Level Standard Memory Systems
1972—CM-50 (1101A)
1977—CM-7000 (2114)
1980—CM-92 (2147)
Business sold to Zitel, 1983

System-Level Standard Memory Systems
1972—IN-10 (1103)
1975—IN-40 (2107)
1975—IN-1010 (1103)
1977—SY-1600 (2116)
1980—SY-90 (2117)
1980—SY-91 (2117)
1980—SY-92 (2147)
1982—SY-90 (2164)
1982—SY-91 (2164)
Business sold to Zitel, 1983

System-Level Custom Memory Systems
1972—IN-11 (1103) Univac
1974—IN-10 (1103) Univac
1975—IN-4029 (2107) Univac
1977—SY-1629 (2116/2117) Univac
1978—IN-508 (2109) Burroughs
1979—IN-780 (2147) Burroughs
1980—5400 (2118) G.E.
1982—SY-91-100 (2164) CSC
Business sold to Zitel, 1983

Serial Board-Level Standard Memory Systems
1973—IN-60 (2405)
1973—IN-62 (2405)
1975—IN-64 (2405)
1975—IN-65 (2416)
Discontinued, 1976

Custom Board-Level Memory Systems
1973—IN-25 (2102) DRS
1974—IN-261 (2114) Singer
1975—IN-501 (2104) Kodak
1975—IN-760/761 (2114/2147) ISS
1976—IN-406 (8080) Bizerba
1976—IN-506 (2104) Teradyne
1977—IN-502 (2117) Pfizer
1977—IN-510 (2104) Honeywell
1978—IN-500 (2117) Raytheon
1979—IN-706 (2147) Telettra
1980—IN-522 (2117) ICL
1981—IN-767 (2167) Singer
1982—IN-535 (2164) Siemens
Business sold to Zitel, 1983

IBM Add On Memories
1974—IN 7135 (2105) add-on memory for IBM 370-135
1975—IN-7145 (2105) add-on memory for IBM 370-145
1976—IN-7168 (2106) add-on memory for IBM 370-168
1976—IN-7125 (2117) add-on memory for IBM 370-125
1977—IN-7158 (2107) add-on memory for IBM 370-158
1978—IN-77XX (2147) universal memory system to support spectrum of IBM 370 computers (135-3033)
Business evolved to semiconductor disk replacement business

Minicomputer Add In/Add on
1976—SY-1670/1671 (2117/2109) DEC
1977—CM-5034 (2107) DEC
1978—IN-5004 (2116/2117) DEC
1979—CM-5160 (2164) DG
1980—CM-5150 (2164) DG
1981—SBC-090 (2117) DEC
1981—MU-5750 (2121) DEC
1981—MU-5780 (2121) DEC
Discontinued, 1983

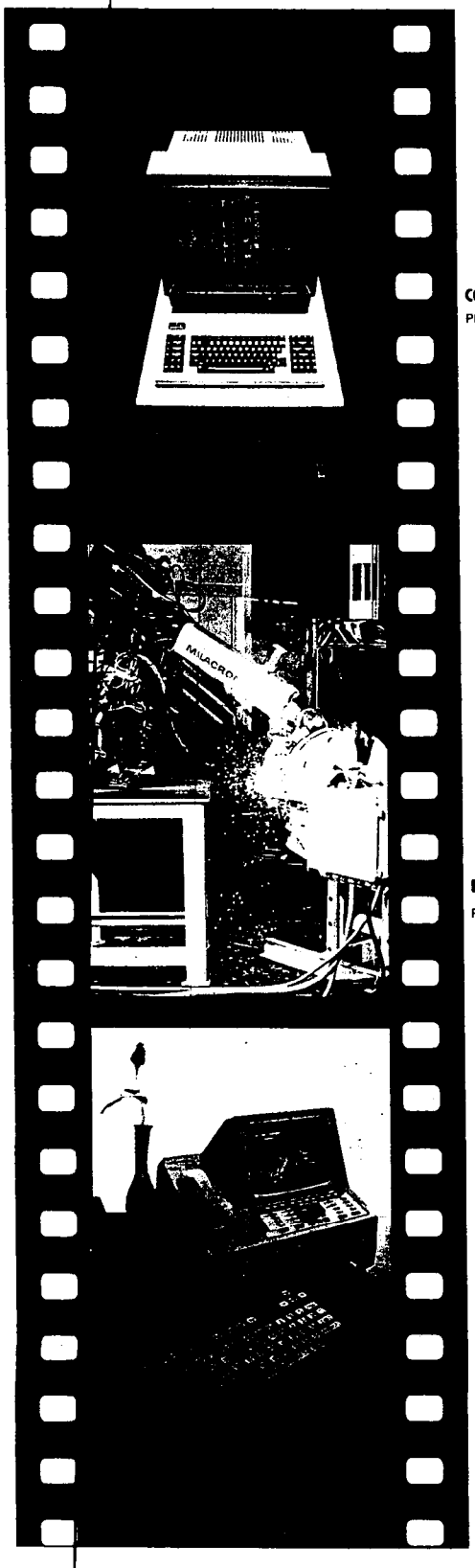
Semiconductor Disk Replacements
1979—Fast 3805 (16K)
1981—Fast 3815 (16K)
1982—Fast 3825 (64K)

PRODUCTS AND PROCESSES

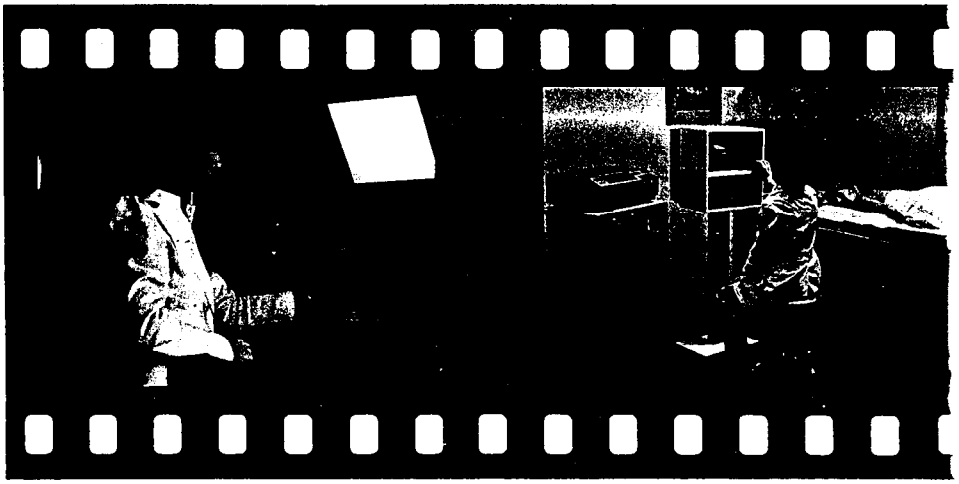
Intel's innovations have created scores of new products and enhanced many existing ones. Here is just a small sampling of the many markets Intel products have touched:

PERSONAL COMPUTERS
RJ Muna

DIGITAL GASOLINE PUMPS
Richard Steinheimer



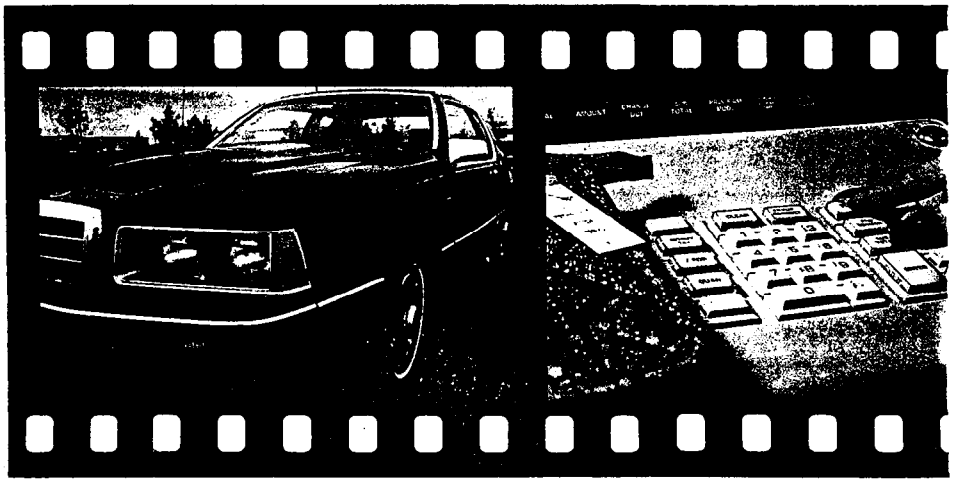
COMPUTER-AIDED ENGINEERING SYSTEMS
Photo courtesy of Daisy Systems



AUTOMATIC TELLER MACHINES
Richard Steinheimer

MEDICAL INSTRUMENTATION
Photo courtesy of Technicare Ultrasound

FACTORY AUTOMATION
Photo courtesy of Cincinnati Milacron



AUTOMOBILES
Howard High

POINT-OF-SALE TERMINALS
Howard High

TELECOMMUNICATIONS
RJ Muna Photo courtesy of Rolm

PROCESS PRECEDES PRODUCTS

Intel was launched to tackle the computer memory market with an as-yet-untried laboratory curiosity: large-scale integrated (LSI) semiconductor memories. A key step in making integrated circuit (IC) memories practical was achieving a breakthrough in process technology. Wanting to try something new, Intel chose to develop two relatively new technological approaches that previously had been used only to make laboratory devices. These new technologies seemed to offer advantages for LSI circuits and were especially appropriate for memories. One was the silicon gate MOS process, which substituted a film of poly-crystalline silicon for the aluminum used previously; the other was a variation of the bipolar IC technology known as the Schottky TTL process.

1974 photograph of Dick Pashley, whose work led to Intel's HMOS (High-performance MOS) technology.

"Both were gambles," conceded Gordon Moore, "since they had never been used in manufacturing, but they allowed us to make a clean break with the past and undertake the development of processes especially suited for semiconductor memory." Added Les Vadasz, "There was a collective intuitive feeling about the features of silicon gate technology versus the metal gate process. It was a gut feeling that all of us on the team shared."

Surprisingly, the Schottky bipolar process developed quickly and without a hitch. It proved to be one of those rare technological advances where everything worked the first time. The silicon gate process, however, was not nearly so forgiving, and required many months of intense effort to solve technical problems. But focusing on these problems had the advantage of allowing Intel engineers to develop techniques that would make possible the production of the new silicon gate devices long before competition could get established.

> *Remarkably, the part proved functional on its first run... It went right into production. Three years later we still hadn't changed the mask set!*
> *—Dick Pashley*

Intel engineers doggedly worked with the MOS process, and in 1969, a year after the company's start-up, they introduced the 1101 static random access memory (RAM) chip. This was followed in 1970 by another MOS product, the 1103, the first dynamic RAM. The 1103 held 1024 (1K) bits of data and proved to be the first serious challenge to the dominance of core memories in computers. The 1103, in fact, marked the beginning of the LSI electronics industry.

Although innovative, Intel's early MOS memory products were difficult to use and test. In an effort to improve their marketability, Intel engineers, led by Vadasz, developed an N-channel, 5-volt power system that made it possible for MOS devices to operate with standard bipolar power voltages. This was a big step forward because it helped standardize the MOS process. Intel's first product to use 5 volts was the 2102 1K static RAM, introduced in 1972. It generated substantial sales and set the pattern for future technology.

HIGHER PERFORMANCE

The next major advance in MOS technology occurred in the mid-'70s, when Intel engineers began shrinking or scaling down the devices. An extension of the silicon gate process, this shrink technology made possible MOS chips comparable in speed to earlier bipolar devices at much lower power consumption and cost.

Dick Pashley, director of California Technology Development, remembered how the technology developed: "It actually started in 1973 with a crash program to speed up the 2102. When I was hired, we were losing business in static RAMs because our parts were too slow." Working with designers Frederico Faggin and Ben Warren, and process engineer Tom Rowe, Pashley redesigned the 2102 and added depletion loads which speeded up the process. This involved an ion implant, a new manufacturing challenge for Intel at the time. Remarkably, the part proved functional on its first run. Three days later Intel gambled and started 800 wafers for the 2102A, as the new part was called. Said Pashley, "It went right into production. Three years later we still hadn't changed the mask set!"

Almost overnight the 2102A returned Intel to leadership in the static RAM market. Then in 1975 Pashley's group hit on the technique of on-chip substrated back-biasing, which allowed MOS transistors to be scaled down in size even further. This led to the 2115, which met its speed goals and reached market quickly.

No sooner had the 2115 hit the field than Pashley's group was assigned the task of getting Intel into the high-performance MOS business. They experimented with a number of approaches, "some very elegant but for the most part difficult to build," explained Pashley. Finally they zeroed in on what was later called HMOS (high-performance MOS), which involved scaling the transistors and using positive photoresist and projection printing. In just six months the team characterized the process and used it to shrink the 2115 die to about half its previous size. This was the start of the shrink technology concept, which led to the design and manufacture of the 2147 static RAM, Intel's first HMOS product.

While the 2147 proved enormously successful, its real importance was realized later when the HMOS process was applied to microprocessors, DRAMs and other devices to improve their performance dramatically.

Since then the HMOS process has evolved to the point where Intel produces ever denser, smaller and higher performing devices. In 1983 Intel introduced the third generation of this technology, which produces devices up to 40 percent smaller than previously possible. "It has become an increasingly successful technology," commented Gerry Parker, vice president and director of Technology Development. "We have now reached a performance level which years ago we thought only the bipolar process could achieve."

CHMOS—TECHNOLOGY OF THE FUTURE

MOS circuits come in a variety of "flavors": N-channel (negatively charged), P-channel (positively charged), and CMOS ("C" for complementary, meaning that it contains both N- and P-type transistors).

Intel's earliest MOS technology was P-channel, but it proved to be limited in speed. With the 2102 in 1974, the company

Howard High

1981 photograph of Gerry Parker, Intel's vice president and director of Technology Development.

turned to N-channel MOS, which offered vast improvements in speed and allowed use of standard 5-volt power supplies.

While continuing to improve its N-channel devices, the company also began in the late 1970s to invest in CMOS processes. The idea was not new, having been published in 1963. Intel in the early 1970s had built CMOS chips for its Microma watches. But CMOS applications at that time were confined to a narrow range of low-power uses. The process was considered too complicated and expensive for LSI applications.

The major advantages of CMOS chips were that they used far less energy and generated far less heat than comparable NMOS devices. Furthermore, on a per function basis, CMOS circuits were easier to design than NMOS, and had wider operating margins.

Since managing power is a critical issue in the application of electronic devices, there is no doubt that CMOS is the technology of the future. Commented John Ekiss, vice president and general manager, Special Components Division, "It has broad application across the total spectrum of Intel's very large-scale integrated (VLSI) components, and the day will come when we will make everything with CMOS technology."

Intel's CHMOS development program was launched in Oregon in early 1979. (The H is Intel's addition to the acronym to indicate high performance.) Under the direction of Ken Yu, project manager for the development group, first generation CHMOS static RAMs were designed with the process. "Typically, Intel brings up new technologies on memory products," explained Sunlin Chou, director of Portland Technology Development. "It is easier to design and manufacture a memory, and easier to understand how the process works." Although the first CHMOS static RAMs weren't marketed—"our NMOS static RAMs were doing well," said Chou—the process was used to build the 80C49 and 80C51 microcontrollers, which have been successfully marketed.

In 1980 the development of CHMOS logic technologies was consolidated in California while Oregon focused on dynamic RAMs. Chou headed a team whose mission was to develop CHMOS DRAMs in 64K and 256K densities. This group produced a 64K CHMOS chip, the 51C64—the world's first DRAM in CHMOS—which was released in 1983 in test quantities to potential users. It was greeted enthusiastically, and Intel began to market the product in 1984. They also produced the world's first 256K CHMOS DRAM—the 51C256, which went into production a few months later.

Les Vadasz cautioned that Intel was not yet in the CHMOS market in the volumes that many competitors were. "But we'll be there," he said, "because there's no doubt that by the end of the decade this will be the technology for an overwhelming number of VLSI products."

FROM RUBIES TO CAD

In Intel's early days, the entire process of creating an integrated circuit, from the original design to fabrication, was a manually done and painstaking operation. Engineers drew the circuit on paper by hand, checking it by eye. Each layer of the design was then manually transferred onto rubylith. Operators worked at light tables with the design underneath the glass cutting each vector onto the red cellophane-like sheets. The rubylith was then photostepped to the correct size, a mask made, and the circuit finally fabricated in silicon. At each stage, checking and testing were also done by hand, which was not only time-consuming, but also allowed generous room for error.

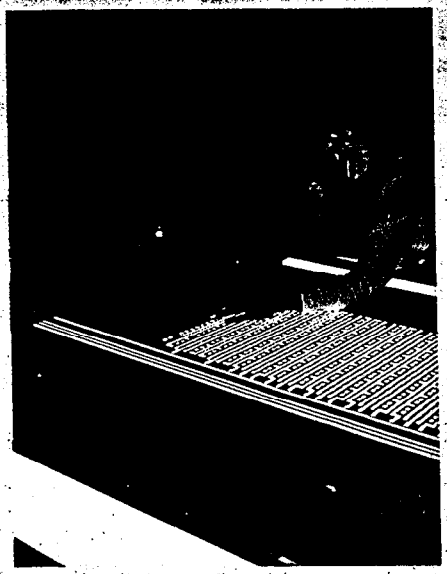
In the early 1970s, Intel took the first step toward computer aided design (CAD) when it introduced digitizers which translated the hand-drawn design into digital format on a computer. This not only allowed some computer checking of the design, but also meant that the digitized information could be transferred to an optical pattern generation machine which would actually make the masks, thereby rendering the painstaking rubylith step obsolete.

By 1980 Intel was well on its way to computerizing circuit design and fabrication completely. All that remains today of the original manual method is the engineer's "napkin sketch" of a new circuit design. Computer aided workstations—sophisticated computer systems with color display screens—are used to enter schematic drawings. On the basis of the schematics, a mask designer draws the layout of the chip on the screen, with each layer shown in a different color.

"Intel was one of the first companies to go totally to on-line entry, on-line schematics, and on-line layout," noted Steve Nachtsheim, who heads Intel's Corporate CAD group.

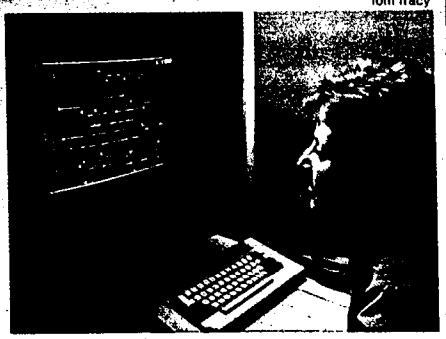
With the design in the workstation's memory, the circuit is tested and checked for design rule errors and other problems. "Intel was also one of the first companies to introduce an automated system that can compare the logic of what the chip is supposed to do—represented by the schematics—with the layout, which is the actual physical manifestation of the chip," explained Nachtsheim.

Today, CAD has virtually replaced manual labor in the creation of new integrated circuits. With the accelerating complexity of circuit design, it would take a workroom the size of a football field to hold all the rubylith operators that would be necessary to trace by hand the tens of millions of vectors in a current-generation chip. (The 4004, by contrast, had about 100,000 vectors.) It would be impossible to handle the complexity of today's chip designs if they had to be done by hand. Intel was one of the first companies to use CAD, but it is now standard throughout the industry.



In Intel's early days, each layer of an integrated circuit design was drawn by hand, then transferred onto rubylith. Operators such as the two women pictured here worked at light tables cutting each vector onto the red cellophane-like sheets. The rubylith was then photostepped to the correct size and a mask was made.

Tom Tracy



Intel was one of the first companies to use computer-aided design (CAD), now standard throughout the industry. Much of the circuit design and fabrication is now performed on computer-aided workstations—sophisticated computer systems with color display screens. CAD has replaced the painstaking manual operations performed in early circuit design, enabling the development of extremely complex circuits that would be impossible otherwise.

EVER LARGER WAFERS

Intel started production at Fab 1 in Mountain View using 2-inch silicon wafers, the industry standard at the time. Gene Greenwood, hired by Intel in 1970, remembered that there was little promise of larger-sized wafers then: "We'd have discussions, and everyone was saying that you couldn't grow silicon accurately enough to make 3-inch wafers."

As with many other predictions in the fast-paced semiconductor industry, this one soon proved to be completely off base.

Improvements in silicon growing technology and fab equipment made it possible for Intel to convert the Mountain View Fab 1 to 3-inch wafers in late 1972, and the company brought up Fab 3 in Livermore on the same size in 1973. Three years later, Fab 3 was used to develop 4-inch wafers. ("We had three people: one engineer, one technician, and myself at Livermore for the whole 4-inch wafer development," laughed Ken Moyle.) In 1979 Fab 5 in Aloha, Oregon started up under Moyle's direction, the first plant to run solely on the larger size.

Intel soon converted its other fabs to the 4-inch size. Fab 6, built in 1980 at Chandler, Arizona, came up on 4-inch wafers, and introduced a host of process technologies including wafer steppers.

In late 1983 Intel became the first semiconductor producer in the world to try 6-inch wafers when Fab 7 at Rio Rancho, New Mexico, produced its first functional die on the 6-inch wafer size. Construction of Fab 7 had started in April 1980, but a recession delayed the plant startup, giving Intel an opportunity to jump to 6 inches. When the plant was finally completed in early 1983, trial runs were made with 5-inch wafers. These were so successful that the company committed to 6 inches.

In explaining the advantage of larger wafers, Gene Flath said, "It's a matter of economy of scale. Most operations process a single piece of silicon, so it can be 4-inch or 6-inch. But when you go from 4-inch to 6-inch, you more than double the number of circuits available from the wafer." The larger wafers, therefore, will significantly increase Intel's fab capacity without the addition of expensive new plants.

The move to 6 inches involved an extensive learning period. Virtually every step of the wafer fabrication process had to be changed, meaning that both Intel and the equipment manufacturers broke new ground with previously untried machines. "It was scary," commented Flath, "but our people said, 'Yes, we can do it.' "

Bringing up the new technology and machinery to produce die on 6-inch wafers was a nerveracking experience, somewhat reminiscent of Intel's early days with the MOS process: no one was quite sure when, or even if, the first functional die would come off the line. ("The stress level around here was very high," commented Mike Van Hoy, Fab 7 plant manager, in a laconic understatement.)

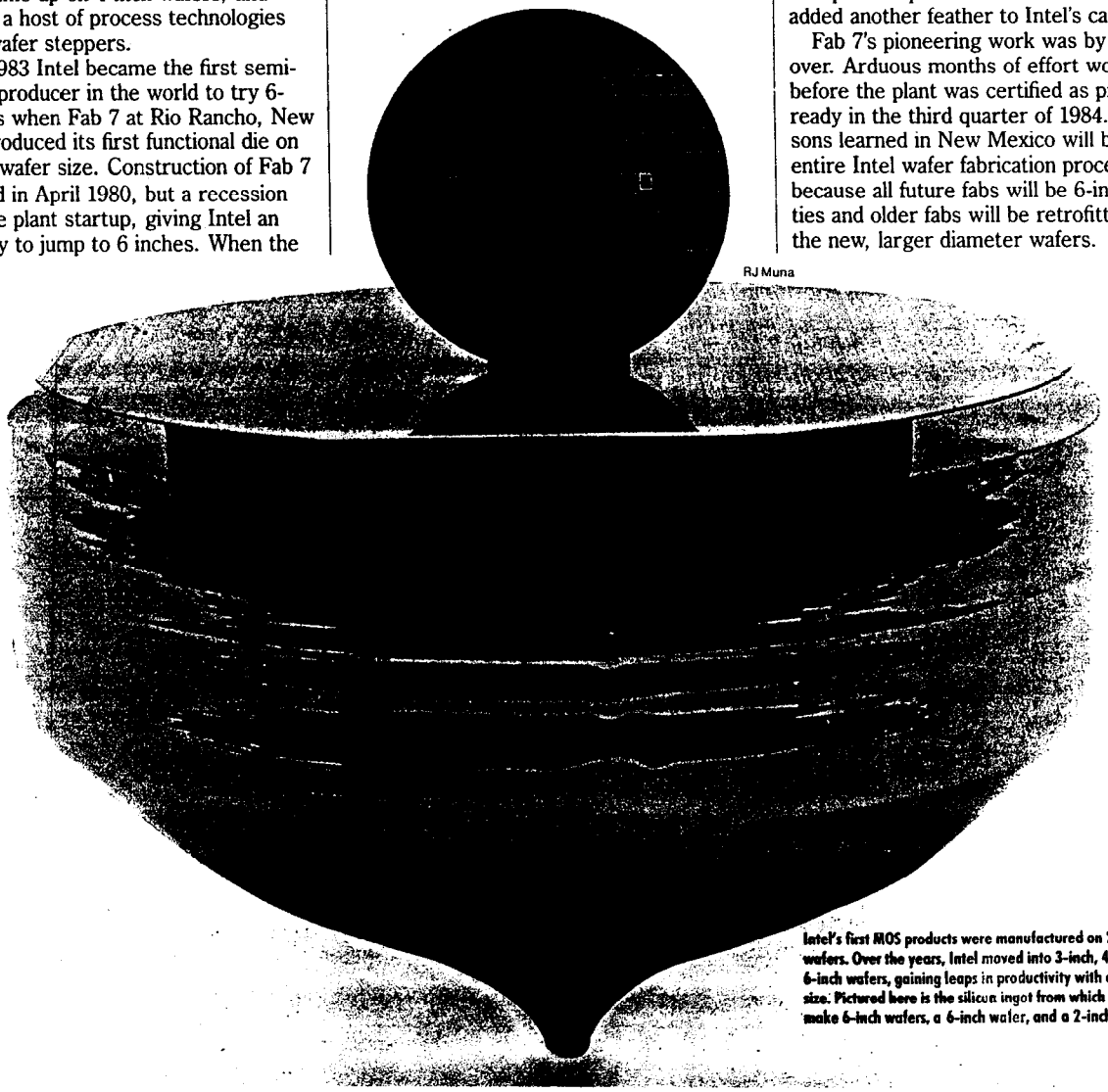
"I call December 1, 1983 our longest day," Van Hoy continued, referring to the target day for the first die production. "We got the first material out early, but the first round of testing didn't turn up any good die, so by 7 o'clock that evening we made the announcement that we were going to continue testing the wafers."

At last, at about 11:00 p.m., jubilant engineers reported to the engineering manager that they had found a good die. He immediately phoned Van Hoy, and the two put into motion one of the wilder celebrations Intel had ever seen. It had been a spur-of-the-moment inspiration from Van Hoy. "Our people were really ready for a release," he explained.

The following evening Fab 7 employees witnessed an unprecedented fireworks display in the fab parking lot, after which they all adjourned to a celebration at the Rio Rancho Inn, wiping out the Inn's beer supply.

Fab 7 was off to an explosive start: it had pushed the state-of-the-art as the world's first plant to process a 6-inch wafer, and added another feather to Intel's cap of firsts.

Fab 7's pioneering work was by no means over. Arduous months of effort would follow before the plant was certified as production-ready in the third quarter of 1984. The lessons learned in New Mexico will benefit the entire Intel wafer fabrication process because all future fabs will be 6-inch facilities and older fabs will be retrofitted with the new, larger diameter wafers.



RJ Muna

Intel's first MOS products were manufactured on 2-inch silicon wafers. Over the years, Intel moved into 3-inch, 4-inch, and finally 6-inch wafers, gaining leaps in productivity with each increase in size. Pictured here is the silicon ingot from which slices are cut to make 6-inch wafers, a 6-inch wafer, and a 2-inch wafer.

CLEAN ROOMS AND BUNNY SUITS

When Intel's first wafer fabrication facility opened in Mountain View in 1968, it followed what was then standard clean room operating practice in the industry: reasonable cleanliness, but no exotic clothes or procedures to ensure a sterile environment. "At that point," explained Gene Flath, "there were a few government-sponsored laboratories that were building dust-free 'white rooms,' but we didn't believe we needed them, and, in actual fact, we probably didn't." Intel did, however, insist on certain minimum standards. "A couple of people in Fab 1 got read the riot act," recalled Paul Metrovich, then a senior technician, "for bringing pizzas in and setting them on top of the diffusion furnaces to keep them warm."

With the opening of Fab 2 in 1971, clean room standards began to improve. Operators were told to wear full smocks (at first they were brown), but their hair still hung loose and nothing covered their shoes.

Smocks, as it turned out, were not the answer. "Operators took their smocks home with them," remembered Flath, "and washed them along with their linty socks and wool sweaters. It was also the rage to modify them with little embroidered flowers and patterns, or to shorten them into mini-smocks and cut the sleeves off." Moreover, as Intel's technology improved and chips shrank, maintaining a dust-free environment became critical.

Intel used the opening of Fab 3 in Livermore as the opportunity to introduce stricter clean room standards and bunny suits. Flath explained, "We built a laundry into Fab 3, and that committed us to the laundry business." Gradually, starting with longer smocks, the new dress standards were introduced at the other fabs, until they became uniform throughout the company.

The change brought a predictable response. "The bunny suits and the whole routine were a huge joke around the company for years," laughed Flath. "In fact, people used to find excuses to visit Fab 3 just so they could put a bunny suit on." Bunny suits were required at all subsequent fabs, and by 1980 they had become routine.

In May of that year, near disaster struck Fabs 4 and 5 in Oregon when nearby Mount St. Helens volcano erupted, shooting mounds of fine gray ash into the air. Under the leadership of Ken Moyle and Frank Alvarez, contingency measures were instituted to maintain the integrity of the clean rooms–including changes in plant layout and in bunny suit design. It turned out that the measures were so effective in reducing particle count that they soon became standard throughout all the fabs.

> *A couple of people in Fab 1 got read the riot act...for bringing pizzas in and setting them on top of the diffusion furnaces to keep them warm.*
> —*Paul Metrovich*

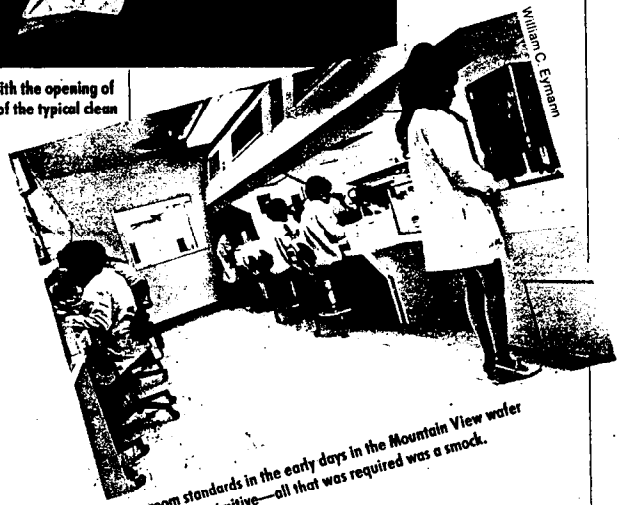
RJ Muna

"Bunny" suits were introduced at Intel in 1973 with the opening of Fab 3 in Livermore. Pictured here are the pieces of the typical clean room garb worn today.

Howard High

Inside Santa Clara's Fab 2, 1984.

William C. Eymann



Clean room standards in the early days in the Mountain View wafer fab area were primitive—all that was required was a smock.

"The first reaction was fear," recalled Alvarez, "fear of the unknown. We had no experience with ash, and small particles were death to the kind of work we were doing."

Immediately after the first eruption, a task force came up with a plan to shut everything down, bag the equipment and seal off every possible point where ash could enter the facilities. "We went out and bought 9000 rolls of duct tape, all the plastic we could get in the local hardware stores, filters, special vacuum cleaners, shoe cleaners and air showers," Alvarez said. "We were ready to bag all the wafer handling equipment in plastic if we had to. We sealed off every entrance except one, taping all the doors and cracks. Everyone entered through one door and was vacuumed." Sticky mats were installed at doorways to clean the bottoms of employees' shoes, and shoe scrubbers cleaned the tops and sides of the shoes. The crew put extra filters on the main air intake and even built special wooden buffer entrances to add further protection. Other air intakes were covered with filter blankets which were kept wet with sprinklers.

Although the volcano blew again in July, both fabs were able to keep operating. It was soon apparent that the steps taken to prevent contamination actually reduced particle count measurably in the clean rooms. Recalled Will Kauffman, vice president of Die Production, "We learned the importance of having entrances to fab areas located as far as possible from building entrances. As a result, several entrances at Fabs 4 and 5 remain closed, and we have modified entrances at Fabs 2 and 3. We also arranged to have exterior clothing such as coats and hats removed in a room separate from the change room where smocks are put on."

Even the bunny suit was improved. "We changed boot styles," remembered Alvarez, "because we found that the boots we used to wear at that time only covered the shoes, leaving a gap which exposed the pants cuffs. There was literally a trail of ash coming into the fab on those pants cuffs." A new bootie design was adopted and is now standard throughout the company.

"Mount St. Helens gave us a greater awareness of clean room practices and controls," commented Kauffman. "The things we learned helped us tighten up the system in all our fabs." The company now uses a series of pre-filters to trap coarser particles, and has installed laminar flow air shields in its newer fabs. "This system directs a parallel flow of clean air on the work station so it doesn't circulate with air elsewhere," Kauffman explained. "The shield also restricts the operator from leaning over the workplace."

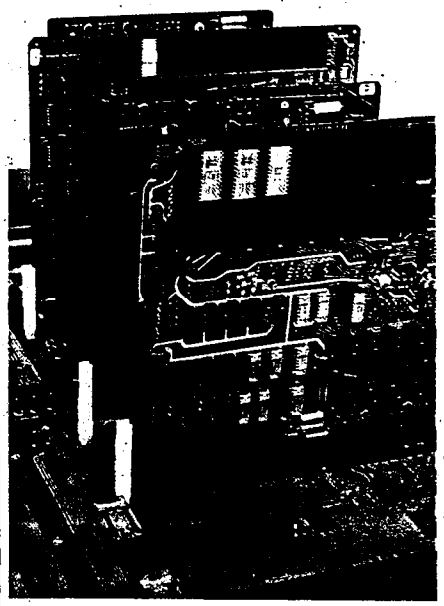
Today all of Intel's facilities are at least Class 100 (100 particles of dust per cubic meter)—a high standard for the industry—and the company is aiming to have its newer fabs ultimately reach a Class 10 rating.

"INTEL IS NOW IN THE SYSTEMS BUSINESS. NOT JUST IN THE SYSTEM."

With this advertising headline, Intel in January 1984 unveiled its new supermicro system for OEMs, the 286/310, and underscored to the world that Intel systems had emerged as a force. It might have sounded like a radical departure for the company that pioneered silicon-based semiconductor components, but in fact the company had been flirting with systems almost since it began. How did an organization of components engineers become involved in designing software and building integrated systems? It was an evolutionary process, growing—sometimes logically, sometimes serendipitously—from two sources: memory products and microprocessor products.

MEMORY SYSTEMS OPERATION

The earliest inkling of systems started with one of Intel's first products, the 1103 1K dynamic RAM. Perceiving that many of its customers were having difficulty designing systems around the part—"it was probably the most difficult-to-use semiconductor device ever created by man," quipped Gordon Moore—Intel engineers Ted Hoff and Stan Mazor began to experiment putting parts together on demonstration boards to show customers how it might be done. Their work sparked the curiosity of two engineers at Honeywell's Memory Systems Division, Bill Jordan and Bill Regitz, who convinced Intel that establishing a memory systems operation was the way to go. "We put together a proposal which we TWXed to Bob Noyce," recalled Regitz, who later came to work at Intel. "He called me back late one night—I remember being in bed when he called—and he was definitely interested."



Shortly after the introduction of the 4004 microprocessor, Intel began offering design aids to help customers develop 4004-based products. The rather primitive-looking devices shown here are the MCB 410 connector board with the SIM 4-01 prototyping board and the MB7-02 PROM programming board, manufactured in 1972.

Jordan was hired by Intel to head the new Memory Systems Operation (MSO). He and three other Honeywell engineers who moved to Intel—Hank Bodio, Bob Blanding and Ross Roberts—designed the first set of memory systems products around the 1103.

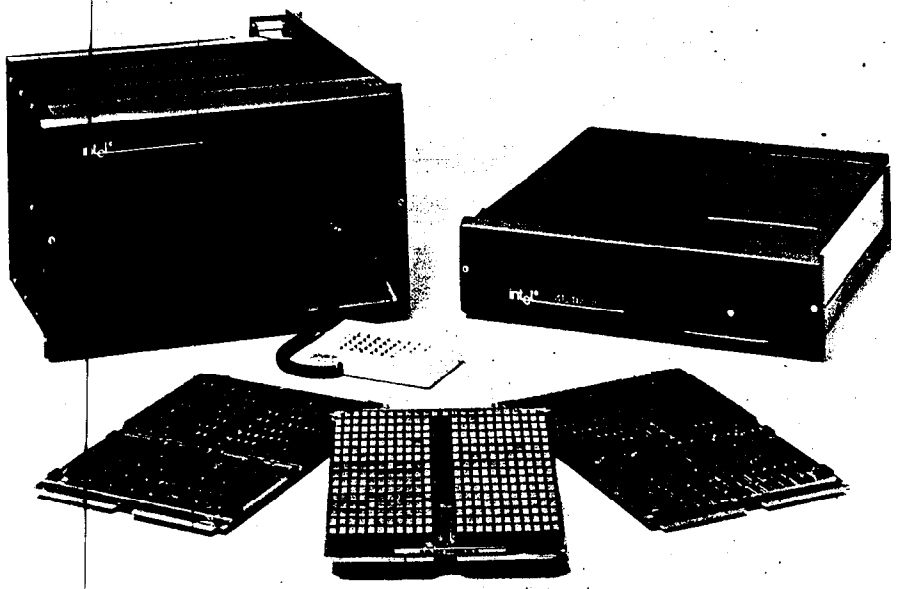
The first was the IN-10, a memory board with peripheral support components, which was developed in 1970 and introduced the following year. It sold surprisingly well, but a big break came when Univac hit a major snag in developing its memory systems technology and Intel proposed to solve their problem with the IN-10. "Within a few months we developed and delivered a solution to Univac," remembered Regitz. Univac remained a loyal customer of Intel memory systems products until MSO was sold in 1983.

Intel was quick to see the potential for memory systems. Not only did it generate healthy revenue, but it provided a way to use parts that did not meet data sheet specifications. "We knew the yield of the 1103 was bad at that point," explained Regitz, "and we wanted to find a way of using the fallout parts." Added Les Vadasz, then MOS project manager, "We were so early in both semiconductor memories and in microcomputers, that many of our customers did not have the ability to use them, because they didn't have the technical capability or could not really afford it. So we saw a business opportunity by moving up to board-level products." The IN-10 spawned a family of related products over the next decade.

The next leap forward in memory systems came in 1972 with the development of add-on memories for IBM mainframes. "When we got going with semiconductor memory, most of it went into mainframe computers," explained Gordon Moore. "Since at that time IBM didn't buy components on the outside, we were essentially excluded from 60 to 70 percent of the total market. We figured the way we could address that was to sell add-on memories directly to IBM's customers, so we developed an IBM add-on memory box."

The first of these units ("blue boxes," as they were colloquially known) were introduced in 1972 and they turned out to be very successful. Offshoots of the IBM blue box business were the FAST 3805 solid state mass storage system, introduced in 1979, and its 1982 successor, the FAST 3825.

The IBM add-on business and the memory board portions of the Memory Systems Operation flourished until the late 1970s, when the fast pace of change in the industry and in Intel forced a major reassessment of MSO's future. As Intel's memory products became easier and easier to use, and its



The Series 80 Memory System.

customers became increasingly sophisticated, more and more customers began buying at the component level. The crunch came in the recession of the early 1980s. "We began limiting what we wanted to spend R&D dollars on," explained Regitz. Memory systems no longer fit with the company's charter of going after distributed processing. "We decided we had better things to do with our people resources and our money," concluded Regitz, "and we elected to get out."

In a carefully planned rampdown, MSO was phased out in 1983. The memory board business was sold to Zitel, and the add-on business was discontinued. The only vestige to remain was the solid state disk business, which was integrated into the Commercial Memory Operation.

DEVELOPMENT SYSTEMS AND INTEGRATED SYSTEMS

Intel had backed into memory systems by developing aids to assist engineers in using the 1103. The company found itself in a similar position when it unveiled the revolutionary 4004 microprocessor in 1971.

The idea for development aids for the 4004 grew out of efforts to broaden the market for the new chip. Ed Gelbach, who headed microprocessor marketing, explained, "We felt that those chips were so complicated, and the approach to using them was so new, that we needed to teach people that they were more than just a calculator replacement."

He assembled a team of five engineers that set about finding ways to show potential customers how the parts could be used. Ted Hoff developed the idea of building simulator boards, and the resulting SIM4-01 and SIM4-02 were introduced in May 1972. They were basically kit boards with a 4004 on them, and could be hooked to an I/O device and user's EPROMs. There was a simple assembler generated for them and some very simple monitors to debug software, allowing customers to develop their own software. By today's standards they were extremely primitive, but they were a start.

Shortly thereafter the company introduced the SIM8-01, a prototyping board for the 8008 microprocessor. At first Intel thought of the SIM boards simply as marketing aids, but the company soon noticed the eagerness which greeted the products. Remembered Gelbach, "There was a little difference of opinion as to whether we should give them to customers for free so they would use them with the microcomputers, or whether we should sell them. In the end we decided what the heck, let's see if we can sell them." Simulator boards soon began to generate healthy profits.

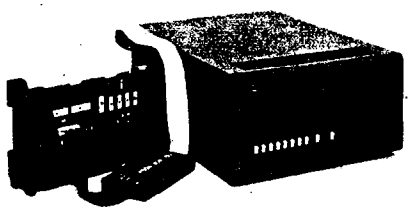
Meanwhile Gelbach's group of engineers was at work developing more sophisticated design aids for the microprocessors, and in 1973 the company unveiled the Intellec® 4 and Intellec 8 software development tools that added cross assemblers and other features to the basic simulator boards.

Intellec development systems soon became the key to Intel's microprocessor sales. "They made it easy for the customer to design the software to go into the microcomputer," explained Hank Josefcyzk, who joined Intel in 1974 as the Great Lakes regional sales manager, "and that was Intel's strength in the early years. I remember we ran promos for our distributors to get them to sell Intellec development systems: we gave away Microma watches, which at that time sold for about $250. In those days all you had to do was sell one development system and you got a watch. Our distributors would kill to get one of those watches, so they really cranked up the sales. We had a distributor in Kansas who sold five of them in 1974; we couldn't believe that you could sell even one of that kind of product in Kansas!"

The design aids were so popular that their revenues soon exceeded the sales of microprocessor components. In fact, it wasn't until 1978 that component sales would overtake those of systems. Noted Josefczyk, "A design aid was like an insurance policy. It hooked the customer, locked him into our concept, and later he'd start buying components."

Sales of development systems grew and the production atmosphere bordered on the chaotic. "There was little Intel discipline or rules," recalled Roger Nordby, who joined the company in 1975 and was soon assigned to head systems manufacturing operations. "You could pretty much do whatever you wanted. Because it was such a profitable business, if we couldn't get a board to work the first time through the test machine, we'd just put it aside. At one time I had over $1 million worth of boards sitting there. All we needed to do was to put more labor in to test them, but we didn't have enough time. We were trying to get as much product out as we could." It was not until the summer of 1978 when OEM Microprocessor Systems moved to Oregon, that its manufacturing capability took on more recognizable Intel discipline.

Intel's next advance in development aids for customers—and an industry first—came in 1975 with the introduction of the ICE™-80, an in-circuit emulator. ICE modules were devices that could be substituted for the microprocessor components that were actually used in a customer's system.



ICE™-80, the first in-circuit emulator, shown with one of Intel's microcomputer development systems. Introduced in 1975, ICE modules could be substituted for the microprocessor components that were actually used in a customer's system, providing a valuable tool for developing and debugging microprocessor-based systems.

They provided the engineer with a window through which he or she could actually look inside the component and see what was going on in the system. They proved invaluable in developing and debugging microprocessor-based systems.

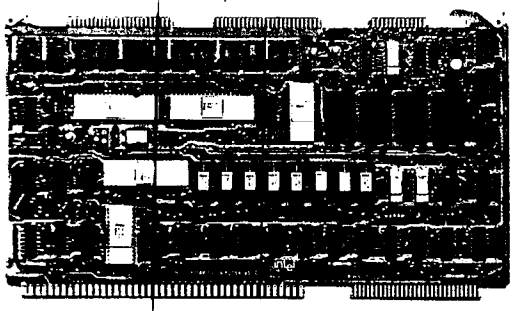
The inspiration for in-circuit emulators came from Bill Davidow. Bob Garrow and Hap Walker executed his idea.

Intel realized that in-circuit emulators were the key to letting customers debug their products, so the next set of development tools was based on that. The company knew that by designing a bus structure properly for the development system it could ultimately use those boards and set up an independent single board computer business. With conscious planning, Intel set about perfecting a bus system.

The result was MULTIBUS®, an interconnection mechanism that allowed the systems builder to link together any number of microprocessor boards to build a wide variety of computers. "We named it MULTIBUS," explained Tom Kinhan, general manager OEM Modules Operation (OMO), "because it was specifically designed to deal with multiprocessing. This means that any auxiliary board or extension module to the main system can have a processor on it, which allows functions to be performed at very high speeds. It allowed us to take advantage of the low cost of silicon to throw lots of processors at the job of building computers, rather than having to build one enormous, highly powerful processor."

In 1975 MULTIBUS was put to use in a re-engineered Intellec-like product, the MDS-800, the industry's first disk-based development system.

With in-circuit emulators and MULTIBUS in place, it was an easy step to single board



The iSBC® 80/10, the industry's first single board computer, was introduced by Intel in 1976.

computers. "At that time, most of Intel's customers were purchasing relatively low volumes of microcomputer products, like 100 a year," recalled Davidow. "That reinforced our conviction that we could build low-volume types of systems out of single boards. Our feeling was this: if customers are only going to buy 100 sets a year, why should they design the systems themselves, when we could sell them the board sets that would take their place?"

The industry's first single board computer, the iSBC® 80/10, was introduced in 1976. Based on the 8080 microprocessor, it included an I/O device and 4K bytes of memory. Dedicated organizations were created under system district managers and sent out to the field to sell board-level products. Soon sales were soaring. Early customers were industrial OEMs who used the boards in

Glynnis Kaye

1982 photograph of Bill Lattin, now vice president and general manager, Systems Group.

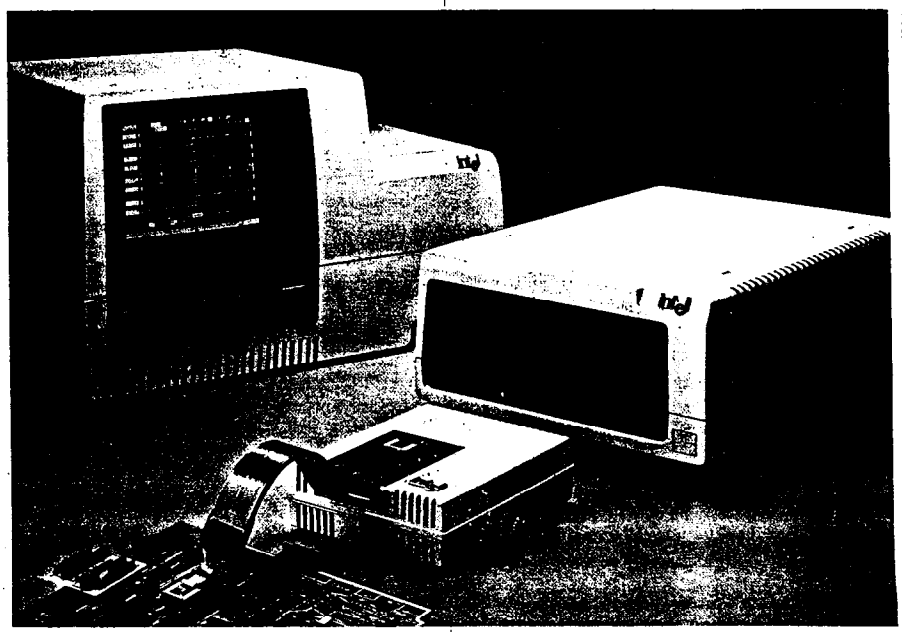
applications like traffic control signals, and companies like Diebold, who used SBCs in their trend-setting automatic teller machines. More board-level systems soon followed to meet customers' needs. Explained Bill Lattin, who assumed control of single board computer operations in 1980, "We found more and more companies wanted our technology at a board or system level. These were companies that realized that their real expertise was building a set of applications software, and it was a better use of their time to buy from us at a higher level of integration."

In the summer of 1978 the single board business, by then a small but rapidly growing operation, was spun off from the rest of development systems and moved to Intel's new facility in Portland, Oregon, where it became OMS (OEM Microcomputer Systems). Keith Thomson, Hank Bodio, Cliff Fahey, and Mike Maertz were among the members of the original team. Maertz and Bodio co-chaired the OMS Strategic Business Segment (SBS), which charted all the product and strategic plans.

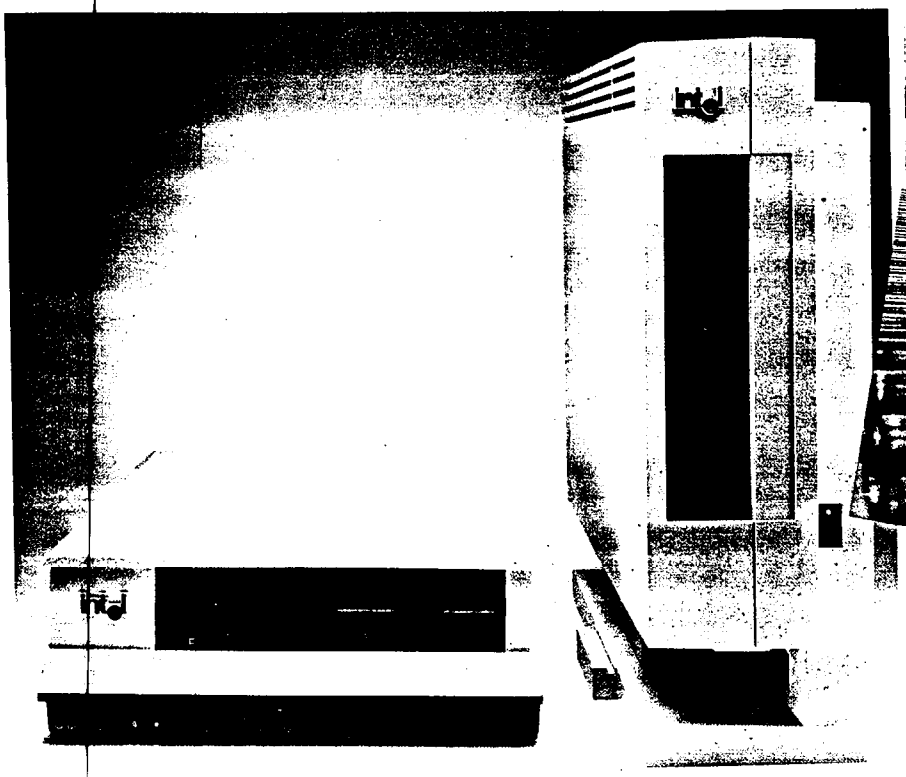
As demand increased for higher levels of integration, Intel developed a small real-time operating system, iRMX™ 80, to accompany the 8-bit iSBC 80, and shortly thereafter began working on a 16-bit operating system. "Bodio really drove that 16-bit product development," commented Kinhan. "He recognized the importance of operating systems software, which was fairly far-sighted for Intel then, and he created a team to implement it. It was an ambitious undertaking."

Not the least of iRMX's problems was the lingering prejudice of software engineers against working for a semiconductor company. "Software was then still a relatively misunderstood concept here at Intel," remembered Kinhan. Added Lattin, "Intel tried for a long time to recruit experienced hands, but found the biggest success rate in hiring was to go to the colleges and get younger people and convince them that microcomputers were really going to amount to something."

Some within Intel felt that iRMX was not the way to go and that the company should scrap the project and go with Digital Research's CP/M operating system. OMS, however, championed the project and iRMX 86 went on to become one of the most suc-



One of Intel's newest design tools, I²ICE (Integrated Instrumentation and In-Circuit Emulator) brings together high-level language software debugging, logic analysis, and in-circuit emulation in a single, integrated package. Shown here is an I²ICE system (right) configured with the Series IV development host computer.



System 310 assembly.

Holly McCluskey

Intel's System 310 represents the most advanced of Intel's systems products. The 286/310, for example, combines Intel's 80286 microprocessor and 80287 numeric coprocessor with a MULTIBUS™ architecture and new systems software, yielding a product with up to four times performance improvement over competitive minicomputer systems.

cessful real-time OEM operating systems on the market.

The next step was to combine SBCs with requisite memory boards in a rack, add an operating system disk and power supply, wrap it up in a chassis, and offer it to customers as an integrated system. All the customer had to add was application software and a display. The result of this fairly modest beginning was the 86/330, based on Intel's popular 8086 microprocessor. It was greeted enthusiastically upon its introduction in November 1981. It enabled OEMs to design and manufacture new products incorporating VLSI microprocessors more rapidly than with the board level systems and minicomputers then available.

Two years later, following the development of the 286 microprocessor, Intel introduced the System 286/310, which combined the microprocessor, a numeric coprocessor, an enhanced MULTIBUS architecture, and new systems software. It yielded a two-to-four times performance improvement over competitive minicomputer systems, and when combined with various software packages, could be used for such applications as robotics, environmental control, and engineering workstations.

Underlying Intel's move to higher levels of integration is a commitment to the concept of "open systems"—building systems with the "tinker toys" of components and boards, in which Intel has the leading edge. The approach is part of Intel's commitment to standardization, allowing other manufacturers to get into the system. By doing so, the marketplace is vastly expanded both for systems and for silicon chips. It was a boon to Intel internally as well. "It provided us with a test when we looked at a potential new product," said Lattin. "We could say, 'Yes, that's the right one to build; it adds to our tinker toys,' or 'No, we don't have critical mass of pieces to go into that market.' "

ADDING DATABASE OPERATIONS

By the late 1970s, Intel's evolution into systems had been in the OEM arena, where the company had strength and recognition based on its microprocessors and memory chips. But as the company ventured more deeply into systems, some company visionaries began to consider commercial systems as a new direction, and database management as a key software technology to get there.

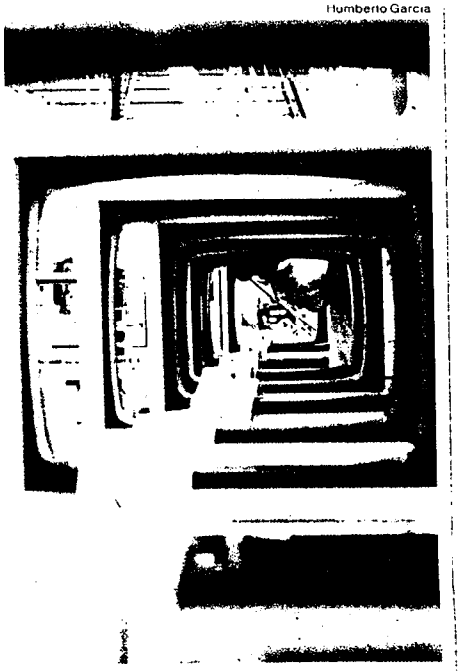
Databases use a lot of memory, and Intel thought there ought to be a way to build a database product using LSI technology. Intel learned of MRI, a small Austin, Texas database software firm looking to be acquired. Intel acquired MRI in February 1979, viewing it "as an opportunity to get a lot of software capability into the company at one shot," commented Gordon Moore.

MRI's basic business was database management systems and its principal product was SYSTEM 2000®. Introduced by MRI in 1972, SYSTEM 2000 was a mainframe database management software product that ran on IBM, Control Data Corporation (CDC) and Univac computers.

The most successful product to result from the blending of MRI's software and Intel's hardware was the iDIS™ 86/735, a microsystem introduced in 1982. It acts as a liaison between a mainframe database and a personal computer terminal, allowing the user to download centrally-maintained mainframe data.

In late 1984, Intel announced plans to move the iDIS business from Texas to Arizona. At the same time, because the SYSTEM 2000 didn't fit with the company's strategic business thrust as a microcomputer-oriented company, Intel sold the SYSTEM 2000 business to SAS Institute, Inc.

Humberto Garcia



Maria Hernandez, an employee at Intel's systems assembly facility in Puerto Rico.

WHERE TO FROM HERE?

Intel's original foray into the systems business back in the early days of MSO and design aids may not have been the result of a carefully drafted Strategic Long Range Plan, but the company's growing commitment to systems has followed a clear pattern that will shape its development in the future.

Initially, Intel's systems thrust was aimed at the low-volume user. "The board business was born out of a premise that there is a make-buy threshold," explained Kinhan, "where component customers with a low enough volume of component purchases would be willing to buy at a higher level of integration. It offered them a higher value added and faster time to market." Intel at first went after customers who built 100 or fewer boards a year.

But as technology developed at ever-increasing speeds, larger companies sought Intel's technology at a higher level. For one thing, Intel came on the scene at the right time. The emergence of the 16-bit market meant microprocessors had become powerful enough to perform an immense variety of tasks. Added to that was the company's development of supporting software and the concept of open systems, and suddenly big customers were saying to Intel, "We don't have to build systems ourselves; we'll buy from you." Soon Intel was serving customers who built 1,000 or fewer boards per year, and that figure was rapidly revised upward to 10,000.

"A good example is Diebold, the company that makes automatic teller machines," said Brannon. "At first they used our components in their machines. Then at some point we sold them on the idea of a little single board computer and much later they started buying boxes from us too."

What of the future? "Whatever it is, it will be based on Intel silicon," predicted Brannon, "and on leveraging industry standards." Intel has positioned itself as a supplier, primarily to OEMs, of "electronic building blocks"—products the customer can select, at multiple levels of integration, for the products they manufacture.

"We are devoted to the idea that systems should be 'open' or capable of providing an easy transition to the next generation of VLSI technology," stated the 1982 Annual Report. "This is why we offer software compatibility between microprocessor generations, why we offer multiple levels of integration, and why we support industry standardization programs in many areas."

A SYSTEMS APPROACH EVEN A COMPANY PRESIDENT CAN APPRECIATE.

"SYSTEMSTHINK"

As Intel ventured into the systems world it soon found that the components mentality with which it had been born and raised needed to change.

For starters, systems called for new marketing techniques and strategies, shifting from the spec sheet orientation of components sales to the "solutions sell" needed for systems. Whereas components were sold primarily at the engineer's desk, systems required a new approach to upper management. "The concept of open systems was the perfect format to use with top management," noted Tom Kinhan. "It appealed to management principles, rather than design principles. It addressed business issues, risks—a whole series of long-range issues—rather than the cost of some individual part."

This required special training for Intel's sales force, and a broad campaign to inform the rest of the company that Intel was in the systems business.

It also meant achieving credibility as a systems supplier and not just as a semiconductor company. To this end Intel launched a campaign of advertising, seminars and public relations.

At the same time, Intel faced a ticklish question vis-à-vis its customers: now that the company was producing systems, to what extent would it become its customers' competitor?

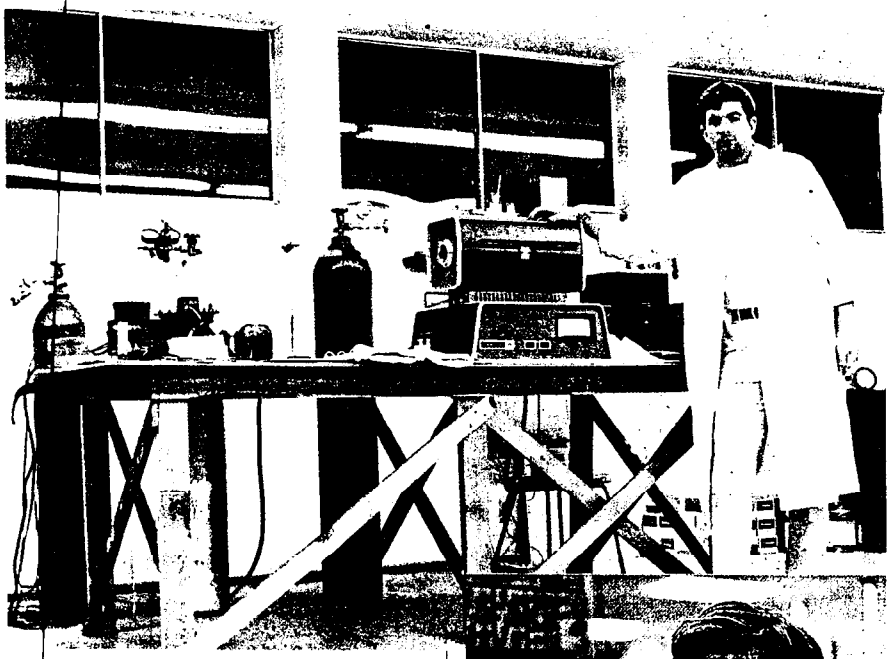
From the earliest days of moving beyond components to development aids, Intel had been keenly sensitive to this issue. One of Ed Gelbach's favorite stories involved the first ad for the Intellec development system. "We were going to call it a computer on a chip," he recalled, "but when Gordon Moore heard about it he got so angry I thought he was either going to faint or hit me. He was that sensitive about competing with our customers. We had to kill that campaign and reposition it to development systems."

"We don't really compete with our customers," said Bill Lattin. "It is not our intent to enter markets already served by Intel component customers. We want to provide tools for customers that allow them to get to the next level of integration more easily."

Systems also raised another new area of concern: product servicing. In the early days of systems, Intel's support of its products basically ended when they were shipped. In the case of certain Memory Systems products, like the IBM add-ons, Intel contracted with outside firms for service support, and if an early microcomputer system developed problems, the customer had to return it to the factory. "By the late 1970s," remembered Jim Grenier, who was hired in 1979 to build a coherent service organization, "Intel realized that the customers were not thrilled with the idea of packing up the defective product and sending it back; they wanted service on-site, so Intel recruited its first service force as part of the sales organization.

"We recognize that when we sell a systems product to an end-user we have 'womb-to-tomb' responsibility," explained Grenier. "From product inception to obsolescence we carry the responsibility of supporting it. We now offer service support of software in the field, customer hotlines, customer training, and repairs."

Such thorough customer support produces benefits within Intel as well. "It gets back to the development of the product," continued Grenier, "and the desire to have it as reliable and serviceable as possible. Seeing how the product performs after the fact, we are constantly going back to the design group and saying, 'This is what's wrong with the product. This is what needs to be changed.' "



Ted Jenkins proudly displays equipment at Intel's one-room light-emitting diode lab in Pasadena, California, circa 1969.

DETOURS ON THE ROAD TO FAME AND FORTUNE

Intel's road to success has not always been a smooth one. Being on the leading edge of technology necessarily entails risks, and with risks there are often mistakes. Interestingly, those stumbles have often had silver linings; they have produced lessons that have benefited later products.

JENKINS ELECTRONICS

In 1968 founder Gordon Moore became intrigued with an experimental process developed by two California Institute of Technology (Caltech) professors, Carver Mead and James McCaldin, to produce zinc sulfide light-emitting diodes, a technological innovation that offered colors other than red. Newly hired Ted Jenkins moved to Pasadena to launch Intel into the light emitter business.

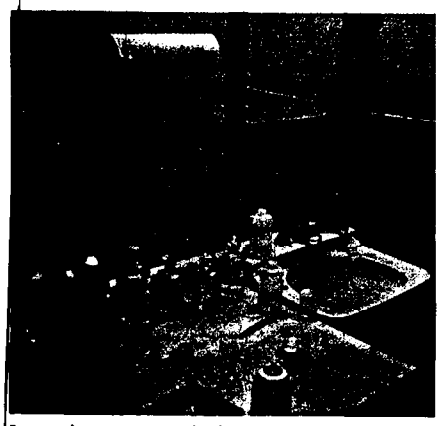
Ted Jenkins, 1984. Howard High

Jenkins established himself in a 1000-square-foot corner of a rundown warehouse, a space so small that the women's restroom had to be converted into a chemistry lab. "I was the only employee," recalled Jenkins. "I did all the lab work, the technician work and equipment maintenance."

Six months later Jenkins returned to Mountain View to join the Schottky bipolar team and was replaced by Gerry Parker, then a Caltech graduate student completing his Ph.D. "It was pretty fly-by-night," remembered Parker. "Jim McCaldin had this idea of diffusing sulphur by sealing an ampule full of sulphur and heating it up to 1000°F. Once, it exploded and shot all the way across the room and hit the wall, about two feet from another professor. After that I had a blast hood installed." The sulphur also emitted noxious fumes which did not endear Intel to its neighbors.

The business lasted only another six months. "It was a very high-risk, weird, avant garde process, more avant garde than anything we've done since," explained Andy Grove, "and we'd run into some fundamental limitations." To make a go of it would have required massive infusions of capital, which Intel—struggling in its small Mountain View plant with two new technologies—could not spare. In December 1969 the business was sold to Monsanto.

But the experience was not a total loss. "We did some good science," Jenkins acknowledged, "and we developed some good patents, particularly for ohmic contacts, which nobody else had done."



Because the space was so tight, the women's restroom was converted into a chemistry lab at the Pasadena operation.

CHARGE-COUPLED DEVICES

In 1975 Intel entered the charge-coupled device memory business. A CCD was a high-density dynamic serial memory which moved a charge along through a string of capacitors rather than transistors. It utilized basic MOS technology and was thus a logical extension of the company's memory products.

The market for Intel CCDs was limited ("we had only a few customers," remarked Tom Innes, "and none of them were household names"). Those few users began to report a perplexing problem: errors reappeared sporadically in the memory, a phenomenon dubbed "soft errors." Innes and his engineering group were having difficulty tracking the problem down, when Gordon Moore, concerned about the failures, suggested that cosmic rays might be the source. There were those who thought that Moore had slipped a hinge, but his analysis, it turned out, was very close to correct.

Matters got serious shortly thereafter when Western Electric complained of a similar soft error problem with the 2107, a 4K dynamic RAM. The correlation with the charge-coupled device errors was apparent, and Intel began a furious program to determine the cause "before the roof fell in," as Gerry Parker put it.

Parker continued: "Tim May in Reliability thought it might be local radiation. He put a leak detector to one of the devices, and after considerable analysis concluded that it wasn't gamma rays, but rather alpha particles that were destroying the charge held in the memory. After more investigation, we realized the glass in the ceramic package emitted alpha particles at a steady rate."

The soft error problem caused by the rays was eventually solved by changing the

> *"Gordon Moore... suggested that cosmic rays might be the source [of soft errors]. There were those who thought Moore had slipped a hinge, but his analysis, it turned out, was very close to correct."*

glass and packaging and making modifications in the product's design. Although the company soon faced a production capacity crunch and decided to drop the more sensitive charge-coupled device entirely, Intel learned a lot from the CCD experience. The company now understood the effects of alpha radiation, not only on charge-coupled devices, but also on other memory products. This led to the development of devices which were insensitive to soft errors.

The soft error problem was becoming recognized but not understood throughout the industry at the time, and Intel shared its research widely, delivering a paper on the subject at the annual Reliability Physics Symposium.

And yet another plus: Gordon Moore acquired a lifetime source of fishing sinkers. During the weeks of frantic detective work to find the cause of the elusive errors, the Memory Systems Group bought several hundred lead bricks to build a chamber that would shield memories from cosmic rays. Once the problem was solved, the bricks became surplus, and Moore now has about a ton of lead under his house which he melts down from time to time for sinkers.

DON'T ASK THE TIME

Gordon Moore still wears his Microma watch. "It is to remind me, if I ever find myself thinking of getting into other consumer products, of the trouble we'd be getting into."

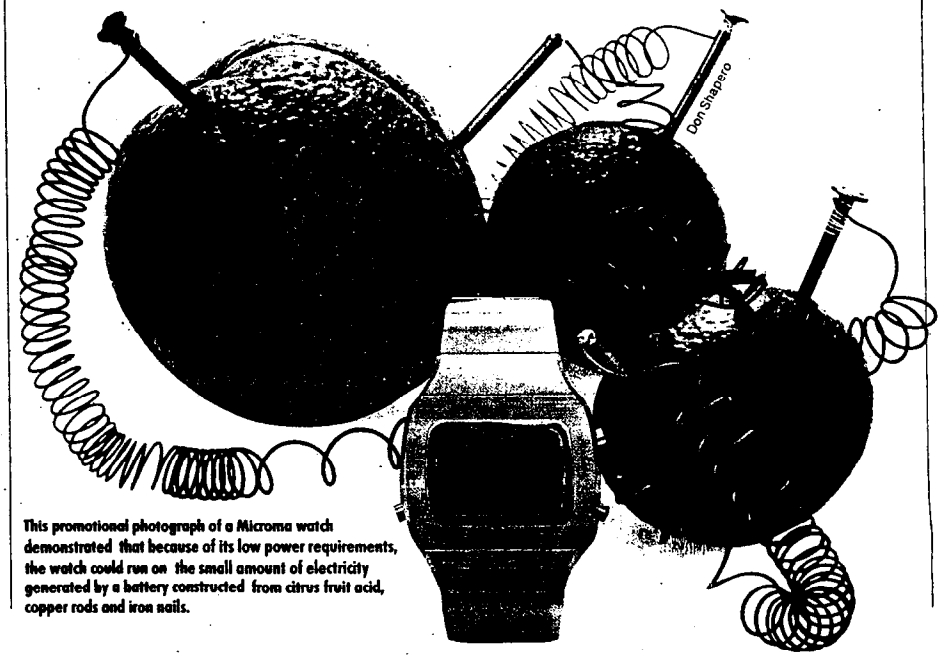
'We were in the jewelry business,' grimaced Andy Grove, as he recalled the $600,000 bill for Microma's one-and-only TV commercial. 'Just one ad and poof!—it was gone.'

In 1972 the digital watch was perceived as a great technological innovation with a potential market of some 200 million units. And, the Swiss—the world's foremost watchmakers—didn't want any part of it.

The company acquired Microma, a small firm that had a prototype liquid-crystal watch. "We went into the business because we thought we had a unique combination of capabilities: the CMOS chip, the liquid crystal display, and assembly facilities," Andy Grove explained. "We got out when we found out it was a consumer marketing game, something we knew nothing about."

Microma soon was the leading watch on the market. The Penang plant, built in 1973 primarily for memory component assembly,

Intel's one-and-only television ad for Microma watches starred William Christopher, who played Father Mulcahy on the popular M*A*S*H* television series.



This promotional photograph of a Microma watch demonstrated that because of its low power requirements, the watch could run on the small amount of electricity generated by a battery constructed from citrus fruit acid, copper rods and iron nails.

Father Time: *"Who has a terrific digital watch?"*

Inventor #1: *"Here, Father Time. Only $200."*

Father Time: *"Too expensive!"*

Special Effects: *Lightning bolt.*

Inventor #2: *"Mine's cheap."*

Father Time: *"Can't read it!"*

Inventor #2: *"Push the button."*

Father Time: *"Too much trouble!"*

Special Effects: *Lightning bolt.*

Inventor #3: *"Mine's a Microma. The time's always there to see. You don't have to push a button."*

Father Time: *"How much?"*

Inventor #3: *"$69.95."*

Chorus: *"Microma.*
Microma.
Microma."

took on the additional job of watch module assembly. But Intel's technology leverage was not enough. Texas Instruments and other competitors slashed prices to gain market share. Watches that sold for $100 and up at fine jewelry stores soon sold for $19.95, then $9.95, at discount markets. The handwriting was on the wall: unlike the memory business, Intel could not build more value into watch electronics along with high volume.

Moreover, Intel suddenly found itself in the unfamiliar world of competitive high-priced consumer advertising. "We were in the jewelry business," grimaced Andy Grove, as he recalled the $600,000 bill for Microma's one-and-only TV commercial. "Just one ad and poof—it was gone!"

Faced with the choice of sinking additional millions into a venture with unfamiliar points of leverage, Intel chose instead to abandon the watch business. In 1978 the company sold the Microma designs, equipment, and name.

Intel exited from the watch business with characteristic concern for its customers and employees. It maintained its Microma service facilities until 1981. (The early Microma watches had several reliability problems, and it was reported that the first item on the agenda of Board meetings in the mid-1970s called for Board members to return their watches for repair.)

Microma employees were placed in other jobs, a remarkable achievement, particularly in an industry noted for its wild swings in employment. After painful layoffs in 1970 and 1974, Intel management was determined to avoid a similar experience. The successful placement of Microma employees reflected this commitment to its employees.

The Microma experience strengthened Intel's resolve to be more selective about entering end-user businesses. It also provided valuable process technology that would have a substantial and favorable impact on future earnings.

Because of problems with a supplier of chips for Microma, Intel decided to build its own CMOS memory chip, a 1024-bit micropower device. This was difficult because it required an ion implant step and Intel people had to learn how to do it. The experience proved valuable a year or so later with the redesign of the 2102, a 1K NMOS static RAM, to increase its speed. The key to this project was the addition of depletion loads by means of an ion implant process, which proved very successful. The speed with which the 2102A reached the market was due largely to the knowledge gained earlier on the Microma implant.

Howard High

1982 photograph of Ken Moyle, who headed the 64K Operation which produced Intel's advanced 2164A DRAM.

BETTER THE SECOND TIME AROUND

Intel's entry into the important 64K DRAM (Dynamic RAM) market demonstrated its ability to mobilize resources and turn failure into success in a remarkably short time frame. The company's first 64K DRAM product—the 2164—suffered severe design and cost problems and was pulled from the market in mid-1981 soon after it was introduced. "We were late getting there, then we shot ourselves in the foot," said Ron Whittier, then general manager and vice president, Memory Components Division.

> *"We were late getting there, then we shot ourselves in the foot."*
> *—Ron Whittier*

Withdrawal of the 2164 from the market caused widespread negative reaction in the industry, the financial community, and among Intel employees, many of whom lost confidence in the company's ability to execute. Meanwhile, the Japanese continued to make huge inroads into the 64K business. Intel's dilemma: repair the existing part or go directly to the second generation?

Intel chose the second option, and a team led by Youssef El-Mansy totally redesigned the original 2164 and produced the 2164A, an outstanding DRAM, in just nine months. To meet this enormous challenge, Intel formed the 64K Operation led by Ken Moyle, now manager of Fab 5 in Aloha, Oregon. "It turned out to be a good decision," Moyle acknowledged, "but the risks were very large. We were exploring new areas of stepper technology, very thin oxides, and redundancy. There were a lot of 'unknowns' that had to become 'knowns.'"

Whittier agreed. "The 64K team resolved some mighty tough technical issues: solving process problems like metal cracking and getting wafer steppers rolling, optimizing design that led to an improved stepping, getting into plastic packaging, and cutting test times by more than a factor of two." What's more, high yields were established in multiple fab and test locations in less than a year.

And there were successes in the marketplace, the most visible of these being the transfer of the 64K technology to IBM. In September 1982, after evaluating other 64K RAM products and technology, IBM selected the 2164A as the one that met its objectives. "They were here before the ink was dry on the agreement," recalled Moyle, "and we set them up in trailers at Fab 5. The transfer was completed within one month of the target date, and they were up and running, shipping product."

BEYOND THE BAY AREA

In the early 1970s it became apparent that the Santa Clara area would not be able to accommodate Intel's projected growth. With this in mind, Intel began an expansion program in 1975 which would take it to other domestic sites in the western United States.

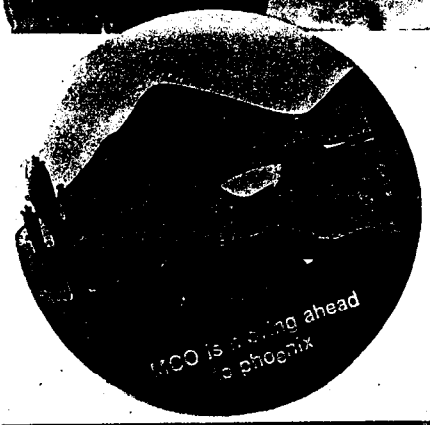
The domestic expansion philosophy was to locate new sites within an hour-and-a-half's flight of Santa Clara, a distance that would permit one-day trips and allow the company to maintain close communications. Equally important, a proposed site was to have the infrastructure of transportation, education, housing supply, etc. to support continued growth by Intel.

DOMESTIC EXPANSION

The years listed below mark the start of Intel operations at each major domestic site outside the Santa Clara area. In many of the locations, more buildings have been added over the years since the opening of the original facilities. In order to accommodate growth, from time to time Intel has also occupied a number of leased facilities in the areas surrounding major campuses. In addition to these major sites, Intel has sales and service offices in close to 50 cities throughout the U.S.

1973 Livermore, California.
1976 Aloha, Oregon.
1976 Santa Cruz, California
1979 Deer Valley, Arizona
1979 Hillsboro, Oregon
1980 Chandler, Arizona.
1980 Rio Rancho, New Mexico.
1984 Folsom, California

Fab 5's young, inexperienced start-up team viewed the building of a new fab as a task challenging enough for the Star Wars crew. Here the team posed with leader Ken Moyle (wearing black Darth Vader mask) after completing successful qualifying runs.



Buttons have been created to commemorate countless occasions in Intel's history. This one marked the Microcontroller Operation's (MCO) move from California to Arizona in 1979.

THE SUN NEVER SETS ON INTEL

Intel's international network grew rapidly from its first venture, Intel Europe, which was started in 1969. By 1984, the company operated more than 30 sales, service, and training offices outside the U.S. in Australia, Canada, Europe, Hong Kong, Israel, Japan, Korea, and Singapore. The company also has design centers in Japan and Israel and, with Matra-Harris Semiconducteurs, operates a jointly funded design center called CIMATEL in Versailles, France. Intel is building its first offshore fab in Israel, and systems manufacturing, components assembly and/or test facilities are located in Malaysia, the Philippines, Singapore, Puerto Rico, and Barbados.

A hallmark of Intel's international expansion has been its sparing use of U.S. expatriates, reflecting a practical view that the innate understanding of language and customs possessed by each country's nationals provides the best opportunity for Intel's

1973 photograph of Livermore Fab 3's start-up team members. From left, Ted Jenkins, Steve Cooper, Paul Hoefler and Al Patterson. Other members not shown were Chuck Dehont, John Phillips and Jim Nutter.

success. As of this writing, fewer than 60 U.S. citizens are employed in Intel's non-domestic workforce of more than 8,500 employees.

INTERNATIONAL EXPANSION

The years listed below mark the start of Intel operations at each of its major non-domestic sites. In many of these locations, more buildings have been added since the first facilities noted here were opened. Sales, customer training, or service offices have not been listed individually.

1969 Intel Europe established. (Started with a sales office in Geneva, Switzerland.)
1969 Intel Japan–Start of sales and marketing functions.
1972 Penang, Malaysia–Components assembly and test.
1974 Manila, Philippines–Components assembly and test.
1974 Haifa, Israel–Design Center.
1977 Barbados, West Indies–Components assembly.
1981 Tsukuba, Japan–Design Center.
1981 Las Piedras, Puerto Rico–Systems assembly, components test.
1984 Singapore–Systems assembly.

During Intel Philippines' 10-year anniversary party in 1984, Ken Thompson presented an award to one of the 10-year employees, Cora Pascual, as Gene Flath looked on.

A Shinto ceremony marked the 1981 groundbreaking of Intel's new facilities in Tsukuba, Japan.

FAB 3: THE McINTEL APPROACH

Intel's growth spurt in the early '70s demanded manufacturing expansion and new employees, and the manner in which the company tackled the problem set the standard for all future expansion.

The company's first two fab areas—Fab 1 at Mountain View and Fab 2 at Santa Clara 1—experienced numerous difficulties. Fab 1 had been acquired from Union Carbide and rebuilt and modified many times. Fab 2, in Santa Clara 1, was Intel's first try at designing and building its own plant, and Ron Whittier, who had just joined Gene Flath's manufacturing group, remembered it well.

"Tom Rowe, Bob Holmstrom, Jerry Larson, and I were the principals in building Intel's first fab from the ground up. Essentially we were a team of rookies trying to produce something very sophisticated, and the first five years of Fab 2 were struggle, struggle, struggle." Another factor that contributed to the problems of Fab 2 was bringing it up on bipolar and MOS simultaneously.

But the learning experiences gained at Fab 1 and 2 served as the foundation for the success of Fab 3, which was built at Livermore. Fab 3 started with a clear focus: manufacture 1103s, a "big 1103 machine," as Tom Rowe called it. It was designed by Gene Flath, Ted Jenkins and Bob Holmstrom, with overall project responsibility in the hands of Jenkins.

Jenkins recalled, "My charter in late 1972 was to start this facility and not use any other Intel people. It was just Paul Hoefler and I. Management said, 'Don't bother us; just go out and do it.' "

Most of Jenkins' start-up team members were recent college grads. The new team trained for nine months at the Santa Clara plants and the Livermore plant opened in April 1973.

Gene Flath remembered the day well: "Hoefler had prepared blue Intel binders with all the up-to-date process information, one for each employee. There were about 200 identical binders spread neatly at work stations throughout the plant. Everyone was reading out of the same book, as the saying goes. How different from Fab 1 and 2 start-ups!"

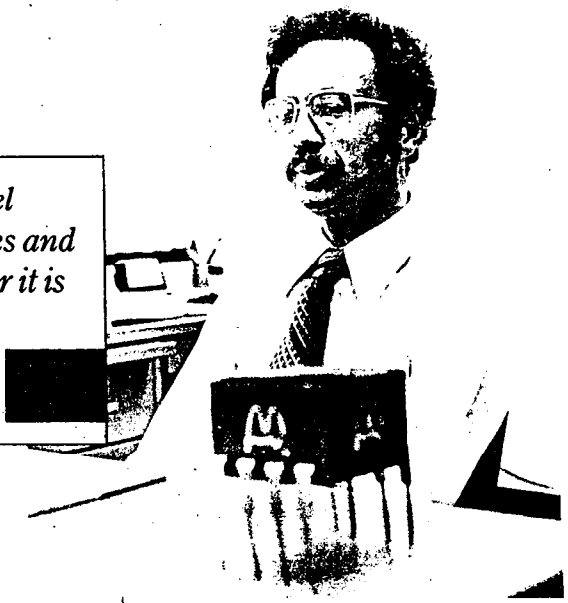
Thereafter, fab start-ups would employ the same system of hiring seed employees and training them at existing Intel plants. For example, Oregon Fab 5's start-up, led by Ken Moyle, was remarkably smooth, especially since it was the first Intel plant to work solely with the new 4-inch wafer size. Moyle had successfully led the conversion at Livermore from 3-inch to 4-inch wafers, and he brought the lessons he learned there to Fab 5. As in the Fab 3 start-up, a group of "youngsters" actually brought Fab 5 into production. Moyle and Al Patterson hired people right out of college in the summer of 1978, gave them a few weeks training at other fabs, and then brought them to Oregon when Fab 5 was ready to go.

Fab 3 was really the beginning of this franchise or "McDonald's approach" to building fab facilities. The technology and equipment required for each fab would be the same, modified and updated for improvements. And the facilities themselves would be modular, duplicating previous fabs, although larger in most cases.

The result: consistency of production. Observed Keith Thomson, "Every McIntel wafer looks and tastes the same wherever it is made."

Robert Isaacs

> *Every McIntel wafer looks and tastes the same wherever it is made.*
> *—Keith Thomson*



Intel president, Andy Grove, contemplates the "McIntel" franchise approach to wafer fabrication in this 1973 photograph. Note his custom-designed McIntel package.

MAY DAY 1975—PENANG BURNS

On May 1, 1975 Intel's assembly plant at Penang, Malaysia was destroyed by fire. Gene Flath, then director of Manufacturing, first learned of the calamity when he was awakened by a phone call at 2:00 a.m. from John Mandel, manager of assembly. "He kept telling me that the Penang plant had burned down and I kept saying that he was kidding and this was a terrible practical joke to be pulling at that hour. But he finally convinced me, and my first reaction, since it was early May, was that this was a communist-inspired May Day plot and that we had been attacked by communist insurgents who were active in the area."

Ken Thompson, plant manager at the time, was in Manila; Ronnie Gui was running the plant in his absence. Continued Flath, "I finally got the two of them on the phone. Ronnie described the scene and wondered what to do with the operators who had shown up for work. I told him to send home those he couldn't use but to assure everyone that they had a job and we'd keep paying them, which we did. This was a loyal workforce."

Thompson returned to Penang to find "the only thing standing was the cafeteria. Everything else had burned to the ground."

Fortunately there were no injuries; the fire broke out on a weekend. The building had been constructed of cinderblock walls and steel beams with a wooden roof. "The fluorescent lights were mounted up against the wood ceilings," Thompson said, "and apparently a spark from a faulty ballast ignited the wood." Fanned by 30-mph winds, the structure burned quickly, with such intense heat that even the steel beams were reduced to twisted, melted rubble.

The Penang plant may have been destroyed because it was not equipped with a sprinkler system, which at the time was not required in Malaysia. After the fire, every manufacturing building in the area was retrofitted with sprinkler systems, and today the Malaysian building code even requires a water tower to provide sufficient water pressure to operate a sprinkler system.

Fire rages at Intel's Penang, Malaysia plant in 1975. The plant was totally destroyed but the facility was rebuilt and production was started again within a year.

> *In just two weeks [after the fire] they had production going in rented space and with borrowed equipment. It was really a masterful piece of recovery.*
> *—Gene Flath*

PICKING UP THE PIECES

The most remarkable aspect of the Penang disaster was the speed with which the company resumed production. This favorable outcome was the result of truly heroic efforts made by the Intel people—from managers to the Malaysian workforce—and the cooperation of other semiconductor companies in Penang.

Flath remembered arriving at night in Penang some three weeks after the fire—he had been delayed getting a passport and shots—and meeting Ken Thompson for the first time. "Ken and his crew must have been working 22-hour days, and he was running the whole thing as if it were a big war room. In just two weeks they had production going in rented space and with borrowed equipment. It was really a masterful piece of recovery."

Actually, Intel was able to put part of its force back to work within 10 days using swing and graveyard facilities offered by neighboring semiconductor manufacturers. "We were fortunate," observed Thompson, "that the disaster struck at a time when other manufacturers were not at full capacity. Most of the equipment is interchangeable, and it was standard practice to share supplies with one another."

Recalled Thompson: "We were operating out of about four locations, plus our cafeteria, and by the end of our second week we shipped 100,000 units." He also boosted production at the Manila plant and secured more subcontract capacity in the Philippines and Hong Kong.

Until production started again, employees reported to work and were paid and sent home. Nobody lost any time. The management staff worked around the clock with the aid of four or five beds at one of the locations to ease the tension. "It was a total team effort," said Thompson.

While Thompson was directing the recovery in Penang, Mandel was working overtime in the States calling vendors all over the world, marshaling equipment for shipment to Penang, and organizing people for a new start-up. The plant was rebuilt and on line in less than a year.

"It was a duplicate of what was there, with some improvements," recalled Keith Thomson, "including sprinklers. And it remains a masterful tribute to the dedication and resourcefulness of Intel people."

INTEL IN ISRAEL

In 1984 Intel completed its tenth year of operations in Israel. Intel started with a design center in Haifa and is now building its first fab facility outside the United States in Jerusalem.

Dov Frohman, the inventor of the EPROM, is largely responsible for establishing the company in Israel. In 1973, aware of the growing manpower crunch in the semiconductor industry in the U.S., he urged Intel to consider setting up a design center in Israel. "The motivation for a design center in Israel was the availability and quality of manpower there," he explained. "We selected Haifa because it had an electronics industry and the coun-

1974 photograph of Rafi Nave (front) and Tom Innes, present general manager and first general manager, respectively, of Intel's design center in Haifa, Israel.

try's major engineering school, the Technion. Graduates in Haifa tend to remain there to work."

Frohman, Andy Grove, Les Vadasz and Art Rock (who was then vice chairman of the board), conducted interviews in Haifa in April 1974. They hired the Israel Design Center's first four engineers, who would report from Israel to Vadasz in Santa Clara. A manager had not been selected, and although Frohman wanted an Israeli for the job, there were no candidates. So the company recruited Tom Innes, then project leader of the MCS 4/40 design team in the U.S., for the job.

The unsettled conditions in the Mideast have occasionally posed challenges to operations in Israel. Provisions have been made for the staff to be away on extended military reserve duty. Explained Frohman, "We have always managed. From the beginning we were determined that reserve duty would not affect operations to any large extent. Within the organization we overlap projects and responsibilities so that more than one person understands what is going on in different projects." Even during the 1982-83 crisis in Lebanon, there was virtually no slippage in deadlines, with many employees demonstrating their loyalty by returning from reserve duty to the office on the weekends.

From the early days of Intel Israel, Dov Frohman had also been pressing for a fab plant and R&D facility. Waiting judiciously until the Design Center had proved a success, he began raising the issue with Intel management. It was not until 1979, after Gordon Moore visited Israel and came away highly impressed, that Intel made the commitment to proceed with its first offshore fab.

Groundbreaking occurred in November 1981 and production in Jerusalem's Fab 8 is scheduled to begin in 1985.

INTEL MEETS THE REAL WORLD

There have been times when Intel has been caught off guard by local conditions at its various sites in the U.S. and around the globe. For example, Keith Thomson and Andy Grove learned about Malaysian weather on their first visit to the Penang site in the early 1970s. "It was the monsoon season—I'll never forget it—" Thomson related, "and Andy, myself and our wives drove out to the plant in a rental car, which promptly sank into the mud. So there we were, the American visitors, with our shoes off and pants rolled up sloshing through the mud. The construction workers at the site helped lift the car back on the road."

Gordon Moore also got a quick lesson in Far Eastern weather on his first trip to Intel in the Philippines. He happened to arrive just as a major typhoon struck the island. "We wanted desperately to create a nice impression," recalled Letty Alcasid, international employee relations and compensation manager, "but it wasn't easy because the streets were flooded, transportation was not available, and a ship had actually been blown ashore by the wind and was 'docked' along the boulevard. Half the plant, including the managers, were not in by 8 a.m. In my eagerness to be on time, I hurriedly stepped out of the car into knee-deep, dirty flood water in front of the plant. There I was, greeting Gordon Moore in a sopping wet dress and shoes. I hate to think what kind of first impression he had of Intel Philippines!"

Rain again caused problems for Intel in Arizona in 1979. Some 300 employees of the Microcontroller Operation (MCO) were occupying leased buildings in Phoenix awaiting completion of new facilities and Fab 6 in Chandler, south of the city. About two-thirds of the employees lived on the Chandler side of the Salt River, normally a dry basin. When unprecedented rains caused massive flooding during the winter, Intel faced a severe crisis. Recalled John Ekiss, then MCO general manager, "The river washed away all but two bridges, so many of our employees ended up with two- or three-hour commutes. We finally set up commuter vans to take them to and from work." The problem was compounded by a delay in construction of the Chandler facility. "We got through it," said Ekiss, "but it was a trying period."

Mother Nature has not restricted her adverse treatment of Intel locations to rain alone. An earthquake measuring 5.8 on the Richter Scale struck near Fab 3 in Livermore in 1980. Fortunately, due in part to Intel's proactive earthquake safety and building programs, the quake caused only minor disruptions in fab operations.

In Oregon, Fabs 4 and 5 were threatened in the spring of 1980 when Mount St. Helens—a supposedly dormant volcano only 50 miles away—suddenly exploded to life in a series of eruptions. Mounds of fine gray ash poured into the air, posing serious threats of contamination to the clean rooms. Remarkably, the fabs lost little production time thanks to employees' heroic all-night efforts to activate disaster contingency plans aimed at keeping the particle count down in the clean rooms.

Intel has been caught off guard not just by the natural elements, but by differences encountered in various cultures around the world. Letty Alcasid remembered how aghast Andy Grove was on his first trip to Intel's facilities in Manila when he discovered that the walls were paneled in mahogany, with managers, in closed-door offices, seated behind mahogany desks. "This surprised us," recalled Alcasid, "because most Philippine offices look like that since mahogany is plentiful and cheap there. Then we learned that Intel buildings in the U.S. had open offices and plain desks. Of course, when we built our next building in Manila the 'decadence' was eliminated."

Tom Innes, the first manager of the Israel Design Center, tells the story of Les Vadasz's visit to Intel Israel in 1975. The plant was located in Haifa in an older, run-down area of small businesses. One of these establishments was a small cafe. The cafe owner's daughter tended a small herd of sheep which foraged for food in the nearby lots and alleys.

"I used to park my car under a tree," recalled Innes, "and the sheep would climb on the roof of the car to nibble tree leaves. I got used to it after a while. But when Vadasz and I left the building one night, he was dumbfounded to see the sheep on my car. The look on his face was something to behold. It must have dawned on him how crude a place we were in trying to develop some of the world's most sophisticated products."

Monsoons hit during Andy Grove and Keith Thomson's first visit to Intel's site at Penang, Malaysia. Here local workers help rescue their rental car from the mud.

EVOLUTION OF A CULTURE

When Intel consisted of 100-or-so people housed in one building, it was easy for everyone to understand "Intel Culture"—although no one would have thought to use such a term at the time. Intel Culture was what Bob Noyce, Gordon Moore, Andy Grove, Les Vadasz, Gene Flath, et al. did; it was how they acted and what they believed. One only had to come to work every day to get a good understanding of it.

As the company grew to thousands of people at multiple sites, that kind of hands-on, daily tutorial became impossible. The need remained, however, for new people to learn "how we do things around here" so that the company could work together with a minimum of policies and procedures.

Out of this need came the idea of a corporate culture, which can be thought of as the set of values that Intel prizes and propagates throughout the company. For example:

**Openness* and a high degree of communications among employees are encouraged. Management is accessible at all levels. Meetings are considered two-way teaching sessions, and decisions are made in open forum. Employees at any level are encouraged to voice their ideas without fear of ridicule. Politicking or closed lobbying for personal gain is not tolerated. Constructive confrontation, where people expect to hear outspoken comments not only from their bosses or peers, but also from subordinates, is an effective tool to resolve problems quickly. Keith Thomson explained, "In a large organization you can get trapped in a chain of command that can't resolve a problem fast enough. We want people to go right at it—'Hey, I've got a problem with what you're doing; either justify it or let's find a better way.' "

**Decision-making.* Intel encourages decision-making at the lowest possible levels. Employees are expected to face up to difficult decisions whether they be business, organizational or personal.

**Assumed responsibility.* Intel expects its people to take on a task and deal with it without being told.

**Discipline* is highly valued. The company demands that its people be tough on themselves. It doesn't like surprises, so a high degree of planning is required. Performance to commitments is closely monitored. "We sought discipline from the second year of our existence," remarked Andy Grove. "We realized that we were a bunch of technologists, and that there was a pitfall in being free-wheeling entrepreneurs who couldn't make the transition to a profit-making business."

**Problem solving* in an open manner is important. Problems are meant to be solved, not feared or hidden. The goal is to solve problems in a direct, straightforward manner rather than focusing blame.

**Risk taking* is rewarded. The company encourages its people to extend themselves, to focus on accomplishments, and to champion projects even if there is a chance of failure.

**Meritocracy.* Intel believes that its people should be rewarded and advanced solely on the basis of their contributions to the company, not on seniority or other criteria. High achievers are compensated better than the average performer and moved along quickly. Incentives such as bonuses and stock options are widely used.

**Results oriented.* Objectives are carefully defined and results measured throughout all organizations in the company.

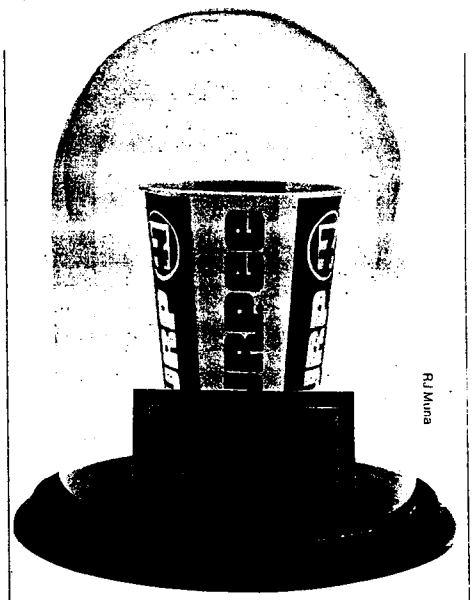
**Involvement.* Intel wants its employees to participate in their relationship with the company. To this end, communications are stressed heavily.

**Opportunity* for rapid development is offered to Intel employees. This requires a strong commitment to training, which is a major priority that involves the highest levels of management. A professional staff is supplemented by several hundred volunteer instructors certified to teach the extensive range of training courses offered by Intel. Through detailed written performance reviews, employees get feedback on how they are doing.

**Teamwork* is an integral part of the Intel work environment. It is fundamental that team objectives take precedence over individual objectives. The council system is an example of team action. It consists of some 90 cross-organizational groups of peers which meet regularly to set policy in their areas of common interest (i.e. engineering, materials, marketing, etc.). Councils started in the early 1970s when manufacturing spread to several sites and the need arose to standardize policies. As the company grew, people came together to discuss how they were doing things, and this evolved into the council system. The number of councils increased to the point where they had to be grouped into clusters with a senior manager overseeing each.

Task forces are another form of teamwork. These are typically small groups of specialists brought together to solve a critical short-term problem. They focus attention and responsibility on the challenge and then overwhelm it with talent. "This company has always had the ability to react quickly to problems and send a squad of top people in to fix them," commented Ron Whittier.

"Intel's culture is a living, breathing thing," noted Jim Jarrett, manager of Corporate Communications. "As the company continues to grow and change, no doubt its culture will too."



RJ Muna

Although its appearance may not suggest so, this SLRPy award is actually revered throughout the company as it is given annually to the Intel manager who presents the best, most believable and achievable strategic long range plan.

SLRP

Each spring Intel managers undergo a unique and arduous ritual with the unlikely name of "Slurp." Actually an acronym, SLRP (Strategic Long Range Plan) consists of a series of meetings to forecast the company's next five years.

The origins of today's complex SLRP process can be traced to annual half-day sessions where Intel's senior management looked at possible directions for the next few years and to product planning meetings held from time to time in the company's early days. The latter were attended by 10 to 15 middle managers who would determine product strategy while senior managers "were kibbitzing, guiding, and critiquing, but not setting product strategy," as Andy Grove explained.

As the company grew, Gordon Moore structured the planning process so that specific company goals, as well as product and group objectives, were established each year. This required that division and group leaders prepare increasingly elaborate plans for their activities and relate them to overall corporate objectives. It was through Moore's insistence on more formalized planning that the process evolved over time into a disciplined, thorough, long-range blueprint for the company's future.

In 1979 Intel named Les Vadasz, a company senior vice president, director of Corporate Strategic Staff, thus confirming the growing commitment to corporate planning. He developed the SLRP process into a more integrated plan in which some 250-300 representatives of various planning bodies prepare strategies. These bodies include

Strategic Capability Segments (SCSs) which plan capabilities like component manufacturing, technology, human resources, etc.; Strategic Business Segments (SBSs), which plan the evolution of Intel's product line; and Strategic Business Groups (SBGs), which include SBS representatives who integrate global plans for each major business area.

Representatives from these group-level meetings deliver presentations to Executive Staff SLRP meetings held each spring. The presentations are long and precise and they are competitive. Judges informally score participants' efforts on a scale of 1 to 10, which serves to focus presentations.

Not surprisingly, the intensity of the SLRP meetings, as they became increasingly more complex, began to take its toll. "The flow of presentations was interrupted too many times and it became 'destructively confrontive' and unpleasant for people to deliver a summary of their work," explained Vadasz. Interruptions included disparaging remarks, questions that anticipated what the speaker was about to explain, and passing of notes among audience members. To curb these distractions, in 1983 Vadasz introduced the fishbowl penalty. When an attendee got out of line or interrupted the flow of the presentation, he or she was required to pay a fine into a fishbowl which sat on the conference table in front of Vadasz. The fines varied from $1 to $5, and generally got a few laughs. By and large it was deemed effective, but there will always be the impatient or outspoken participant who will reach for his billfold before making a comment, saying, "It's worth it!"

After months of hard work, the SLRP process culminates with dinners held simultaneously at major Intel sites joined together by a phone hookup. Highlight of the ceremonies is the presentation of the coveted SLRPy (slurpy) award for the most effective and believable plan.

Les Vadasz launched SLRP's fishbowl penalty in 1983. Any time a SLRP meeting attendee breaks the SLRP rules of etiquette, he or she must pay a penalty into the fishbowl. Money collected is applied against the total SLRP expenditures.

This is followed by the infamous SLRP booby prizes which make a point and poke some fun at the same time. Jean Jones, Gordon Moore's secretary, and Geri Williamson, Les Vadasz's assistant, coordinate the complex task of locating appropriate prizes and getting them to the various sites in time for the awards. This is a tough logistics assignment because the SLRP meetings end on Wednesday and the dinners are held the following night. Noyce, Moore, Grove and Vadasz determine appropriate prizes for the lucky winners. Among past awards: a size 44D bra to the general manager of Intel Magnetics for having the most inflated plans, a spray gun to the general manager of microprocessor operations to debug a new product, rubber money to the general manager of the components group for spending 130 percent of his R&D budget, a jar of muddy water for "clarity" of a presentation, the Tower of Babel award for the presentation that was highest over the heads of the audience, and a laugh machine for the most unbelievable financial plan.

Noted Vadasz, "The biggest value of the SLRP process is the work each planning group does in preparation for it. The people who do our planning are the very same people who have to execute the plans."

INTEL DELIVERS PROMPTNESS

One of the most visible examples of Intel's disciplined working environment is the late list which employees sign if they arrive after 8 a.m. The list appears in a building when more than 7 percent of its employees arrive late for two months in a row. It remains until the percentage of tardy employees drops below 5 percent for a month. This practice was launched in 1971 by Andy Grove, the driving force behind the company's operations from the beginning. It was controversial then and it remains so today.

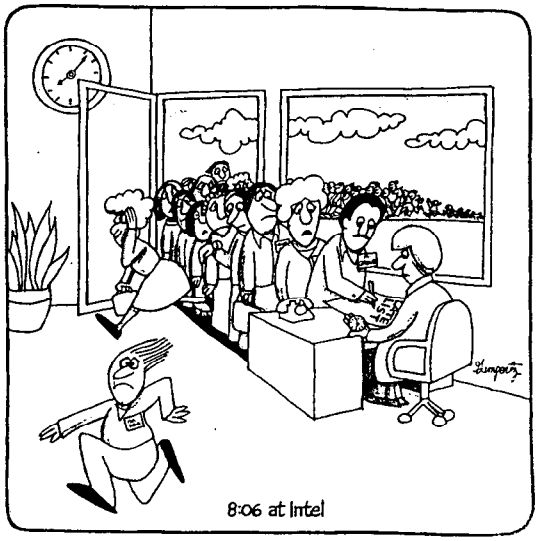
By 1971 the company had grown to about 300 employees, and Paul Metrovich remembered that many of them ignored the workday starting time. "It got to a point where as a technician I couldn't find anybody in the engineering staff until after 9 o'clock," he said. "If we had a problem, we'd put our feet up on the desk or find something else to do until they arrived."

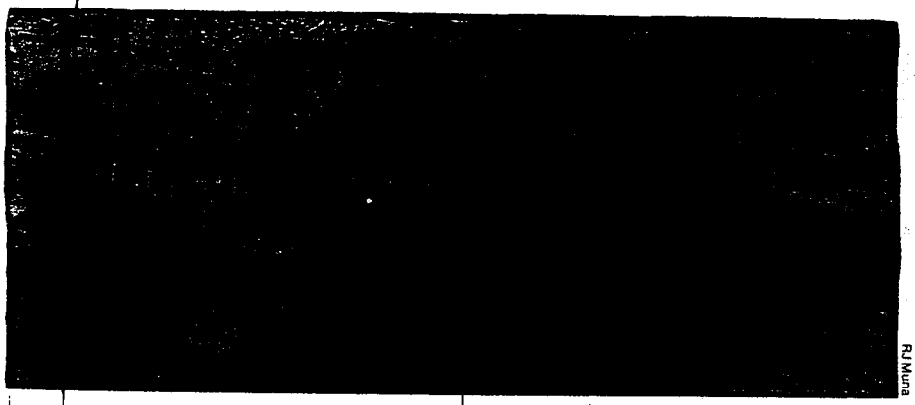
Grove had tried everything to establish punctuality: meetings, memos, warnings—but to no avail. Then during one regular Friday morning staff meeting he decided he'd had enough.

Keith Thomson remembered the meeting, which was held in a corner conference room with a sweeping view of the parking lot. "We'd periodically look up from our discussions and glance at the parking lot, watching people straggle in long after 8:00," he said. "Finally Andy pounded on the table and said he couldn't take it anymore, that this was a manufacturing organization and we should all start at 8 o'clock."

Shortly thereafter Grove initiated a sign-in monitor for his employees. The procedure went company-wide in the mid-1970s when he assumed overall control of operations.

"It's symbolic," Thomson explained. "It says we are a disciplined organization. If reports are due on the 5th, they should be done on the 5th. If the day starts at 8:00, the day starts at 8:00 for everybody. If you commit to do something, you do it."





RJ Muna

RJ Muna

Intel achieved its first $250 million quarter in the second quarter of 1983. Billion-dollar company status was also reached for the first time that year, as the company closed out the year at a record $1.1 billion in revenues.

"THIS IS A PROFIT-MAKING ORGANIZATION"

Gordon Moore has a small wooden plaque that reads: "This is a profit-making organization. That's the way we intended it,... And that's the way it is!"

The plaque is symbolic of the importance Intel places on successful financial management. Intel has always prided itself on being the most profitable company in the semiconductor industry, while investing heavily in research and development and facility expansion.

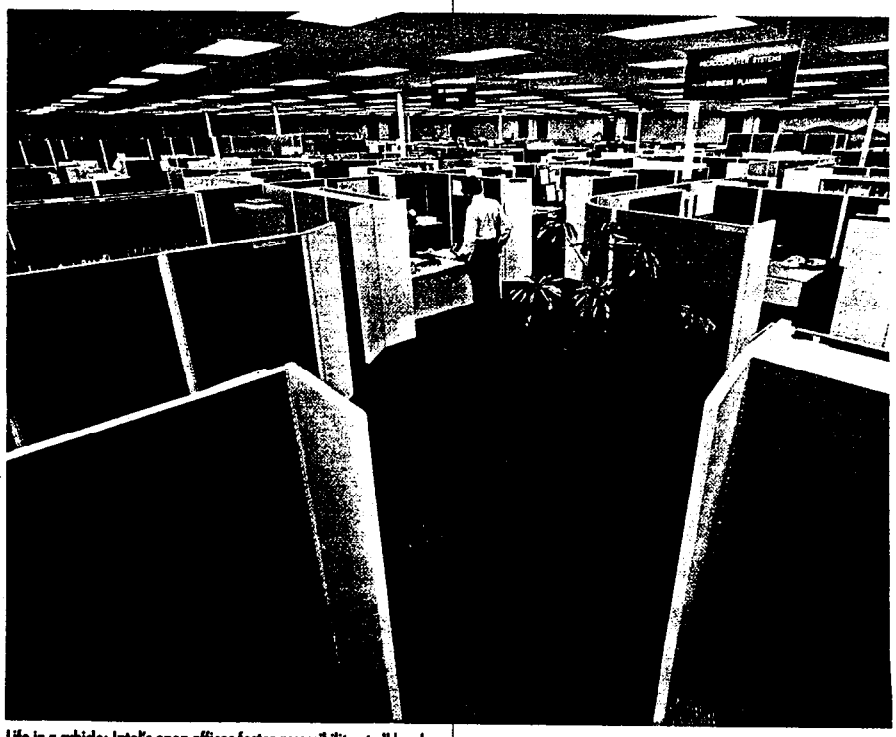
Larry Hootnick, who signed on in 1973 and is now senior vice president and director of Corporate Marketing, is considered the architect of the tight policies that give the company a greater probability of meeting its profit targets. Conservative financial and accounting methods were adopted early on and, having set the standard, were taken up by many other companies in the industry.

Another manifestation of Intel's desire to be—and be perceived as—a tightly managed company is its widely known history of being first with its financial reports. Rapid year-end reporting of audited company figures has been a hallmark of the company for years. Results are released within two weeks after the end of the year. The same schedule applies to quarterly results. "By getting the numbers out fast," explained Hootnick, "we get immediate feedback to the decision-makers as to what is going on, and then we can get on with the business at hand." It is part of the way Intel does things—its corporate culture—that projects should be done on time—or ahead of time, when possible.

The planning required for fast reporting is characteristic of the overall strategies that have kept the company ahead of the pack.

"We have a company profit goal," noted Hootnick, "but we also have a goal for each individual business unit—by area, by operation—so we can see if we are getting out of line in any specific area."

The company also believes in letting employees share in the profitability. Key employees are granted options to purchase shares of Intel's authorized but unissued capital stock, at fair market value at the date of grant. The Stock Participation Plan, which was launched in 1972, allows qualified employees to purchase shares of capital stock at 85 percent of market value at certain specified dates. The benefits are obvious: an employee who purchased 10 shares of stock at $208.20 under the plan in December 1972, for example, would find his or her portfolio had grown, by November 1, 1984, to 252 shares (thanks to stock splits) worth $7,056.00. And the benefit is mutual. Employee stock plans (including tax benefits) have provided capital for the company in amounts that have gone from $75,000 in 1971, when Intel went public, to $15,000,000 in 1983.



Life in a cubicle: Intel's open offices foster accessibility at all levels.

COPING WITH RECESSIONS

Intel's first experience with a recession was in mid-1970, just two years after its founding, when business turned down sharply. The company reacted by laying off employees and cutting costs. As a small company, its plight went unnoticed in the industry and community.

The gloom lifted later that year when Intel struck a deal with Microsystems International LTD., an Ottawa, Canada subsidiary of Bell Northern. MIL was to second source Intel's then-new MOS device, the 1103. The negotiating team, which included Jerry Larson, Larry Lubben, Larry Brown, Ron Whittier, Ted Jenkins, Tom Rowe, and Gene Flath, spent the winter commuting between Santa Clara and Ottawa, braving the frigid Canadian winter. In return for transferring the 1103 technology and design and the P-channel silicon gate process to MIL, Intel received a cash infusion of $1.5 million which, as Bob Noyce recalled, about equaled the net worth of Intel at the time. Intel later received a $500,000 bonus because certain yield targets were met. "The MIL deal really softened the blow of the 1970-71 downturn," said Gordon Moore. In a fitting postscript, those who participated in the project were treated to a pull-out-the-stops trip to Kauai—far from the chill of Ottawa—to celebrate their success.

"When preparing for recession, one must be careful not to emulate the generals who get ready to fight the previous war," commented Gordon Moore. "Just as no two wars are alike, recessions are all different. Each one comes at you from a different direction."

The 1974 recession hit with far greater force than the one in 1970. The oil crisis had created a hoarding mania, with businesses going on an inventory-building spree for months. "Suddenly demand just vanished," recalled Moore, and the nation plunged into a severe slump that would last 20 months. Intel was forced to lay off about 30 percent of its approximately 2,500 employees, an experience described by many as traumatic.

THE 125% SOLUTION

In 1981 the country found itself in a prolonged recession, the worst slowdown since the Depression. Intel suffered a terrible margin squeeze as component prices dropped sharply. Management rejected cutbacks in personnel and production activity and instead decided the company should fight its way out of the recession so that it would be poised for the eventual upturn. To do this, Intel decided to accelerate new product development so that it would have little competition and high margins when the recovery came. This plan would restore profitability sooner and extend the time frame of reduced competition.

The key to this novel program was the 125% Solution, which was launched in October. Exempt employees were asked to work an extra two hours a day without pay to speed product development and enhance their units' effectiveness. This extra effort was to be voluntary and was intended to last six months.

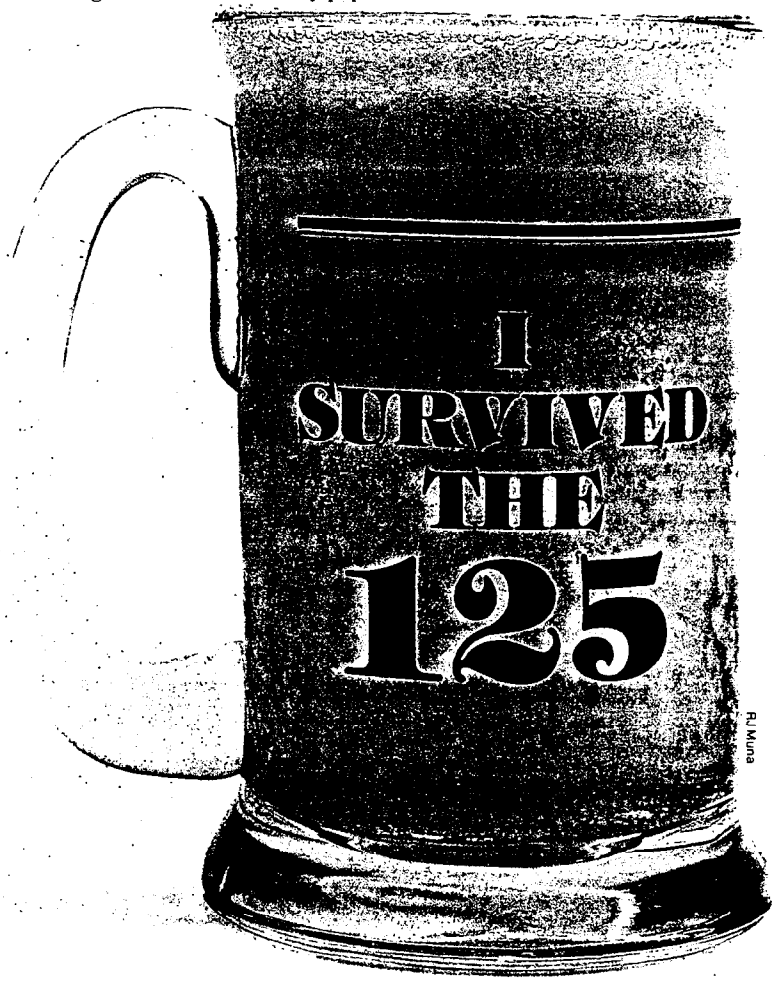
"Generally the program was well received," recalled Roger Nordby, then director of Personnel. "People could identify with the need and they were doing something positive, rather than sitting around doing nothing." He added that employees were kept informed during the period and understood the importance of the 125% Solution in advancing programs that had to be ready when the upturn came. Many nonexempt employees wanted to contribute free overtime to the program but were restrained by labor laws.

Dick Boucher, director of Marketing Communications and Business Development at the time, assessed the program as a sound move and a unique approach. "By working harder to get our products to market sooner we definitely strengthened our position," he explained. "We accomplished a lot, and although it was not universally popular, it was the right thing to do."

By March 1982, Intel's business started to pick up and the recession appeared to be ending. The 125% Solution had been a success, including among its accomplishments accelerated shipment of a new microcomputer system, acceleration of federal tax returns to obtain refunds six months earlier, speedup in the delivery of various engineering projects, and a large increase in microcontroller sales.

Intel ended the 125% Solution on March 31. Celebrations were held for exempt employees at major domestic sites. The festivities included refreshments, music, a presentation by Andy Grove, and special commemorative mugs (15 ouncers, 25 percent more than the usual mug). Within two days a videotape of Grove's presentation was shipped to employees at Intel's other locations in the U.S. and abroad.

Nordby recalled that the festive ending reaffirmed Intel's collective effort. "Unlike other companies that laid off employees, we decided to work our way out of the recession and not roll over. This gave our employees a sense of pride."



At the end of the 125% Solution program, exempt employees attended company celebrations where they received commemorative mugs (15 ouncers, 25 percent more than the usual mug).

FALSE ALARM

Although orders reached record levels in the second quarter of 1982, the euphoria faded fast. Apparently the surge had been caused by widespread inventory adjustment, particularly among distributors, and by September, bookings slumped badly. Meanwhile, Intel's costs increased sharply because it had expanded its employment by more than 3000 people in anticipation of the upturn. Despite cost-cutting measures, it appeared that a loss was likely in the first quarter of 1983.

The company faced a dilemma: it would have to slash expenditures or suffer a loss that could cripple its growth once the recession ended. It refused to mortgage its future by cutting product development or capital investment, and it didn't want to lay off employees. Furthermore, the disruption and loss of its people through a layoff would hinder the company's recovery when the upturn resumed.

After extensive deliberation, Intel management decided to impose a pay cut ranging up to 10 percent and a pay freeze that would last through 1983 unless certain profit levels were reached. This seemed to be the fairest alternative among those available. It would preserve momentum and maintain to employment stability.

During November the program was introduced to employees at over 200 meetings on the same day worldwide.

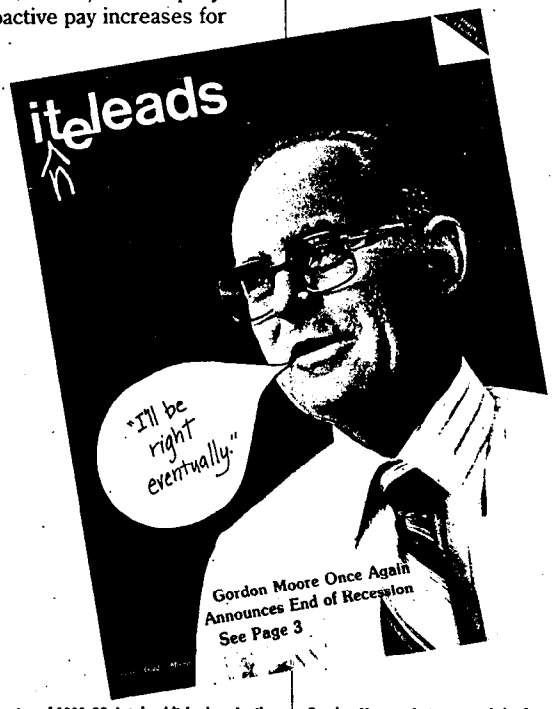
Reaction to the new program varied. A number of "Thank God We Still Have Jobs" parties were held, but there was still discontent, particularly among highly marketable employees. Most employees however, accepted the trade-off of lower pay for sustained employment.

The pay cut was not made any more palatable when in December the company announced IBM's investment of $250 million for 12 percent of the company's shares. Externally the deal was perceived as a big plus because it provided much needed equity financing to sustain Intel's growth. But internally, company employees did not understand why the IBM funds could not be used to offset their pay cuts. Despite a program of internal communications to explain the distinction, misgivings persisted among many employees. Gordon Moore acknowledged that the timing of the IBM announcement was not good in terms of gaining support for the pay cut. "But from the point of view of our future and the ability to continue to invest in spite of bad business conditions, it looked pretty good," he said.

By March, business had improved substantially, and Intel restored half of the pay cut effective April 1. Then, on June 12, the pay cut and freeze ended with a coordinated announcement over public address systems at the company's major facilities, by voice mail to field personnel, and telex to foreign offices. At the same time, the company announced retroactive pay increases for non-exempt employees who had missed a raise during the freeze. Many employees stood and cheered.

Throughout this trying period, Intel employees somehow managed to hold onto their sense of humor. Recalled Boucher, "We made up 125% Solution sweatbands to go along with the sweat shop image and sold them to employees for $2.00. The proceeds went to the United Way." His department also produced an April Fools' Day issue of the employee magazine, *Inteleads*, featuring Moore on the cover announcing once again that the recession was over.

By November Intel's profitability had improved to the extent that the company awarded two-week bonuses to all employees who had been hired in 1981 or earlier and one-week bonuses to those hired in 1982.



During the lengthy recession of 1981-82, Intel published an April Fools' parody edition of its monthly employee magazine, *Inteleads*. One article stated, "As he did in the Spring of 1981 and 1982, Gordon Moore, chairman and chief executive officer, recently predicted that the recession saddling the semiconductor industry would end soon."

LESSONS FROM THE ALOHA DOGHOUSE

Intel people tend to look on the lighter side of things, so when asked about the recession of 1974 they often tell of the doghouse at Aloha, Oregon. When the downturn hit, the new Fab 4—at the time the company's largest facility—was a nearly completed shell scheduled to go onstream in mid-1975. Management felt it could not justify continued expenditures to complete construction, so the project was completely stopped. A Doberman pinscher was installed as a security guard, and for over a year he had the huge facility all to himself. To this day, company "oldtimers" still refer jokingly to Fab 4 as the "Aloha doghouse."

When construction finally resumed in early 1976, nine more months were needed to bring the plant up and to recruit and train personnel. This delay was costly to Intel because it slowed the company's recovery and ability to compete.

Fab 7 in Albuquerque, which came onstream in 1983, offered an interesting contrast in corporate philosophy. This plant was scheduled for completion in the fall of 1982. As the recession of 1981-82 deepened, management put the plant in a "complete, don't start" mode: construction proceeded, but at a slower pace; equipment was delivered and employees were hired, but they were trained at other Intel locations. "We kept the plant alive," explained Gene Flath. "It was shut down for only about six months."

As conditions improved, the plant was gradually activated, starting with a pilot production line in early 1983 and the decision to bring it up in May.

The big difference between Fab 7 and the Aloha doghouse was that when the upturn was signalled, Fab 7 was much closer to start-up than Aloha. Gene Flath agreed that the two plant start-ups reflected a change in philosophy. "But it was also a question of being pragmatic," he said. "In 1982 we had better cash resources and it wasn't as painful."

Aggravating Intel management's agony over the pay cut was the matter of the memory systems business. Explained Bill Regitz, then Memory Systems Operation (MSO) general manager, "The recession forced us to make a decision. We were limited in where the R&D dollars could go, and if we continued to invest in a product line that didn't match our corporate goals we would be wasting money. Well, without R&D money you don't have a product line, so that decided it."

The basic reasons to shut down the business were there with or without a recession. As the company became less and less a factor in memories, it began having to buy parts from competitors. MSO just didn't match the strategic long-term thrust at all.

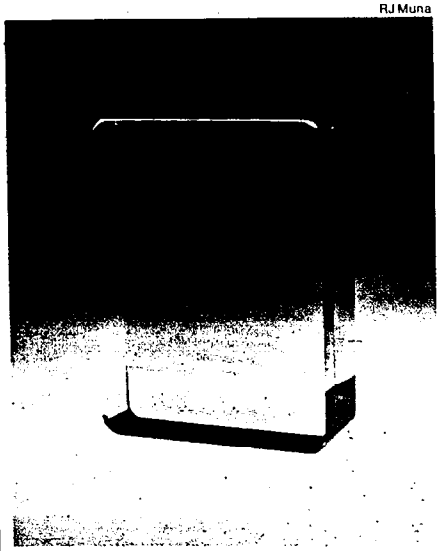
With some 350 employees involved—and the company's payroll already enlarged by another 3000 recent hires—Intel confronted the unpleasant possibility of a layoff.

"We didn't know how we were going to do it, but we told our employees that we'd find jobs for all of them," recalled Regitz, who supervised the MSO rampdown.

The bulk of the operation was sold to Zitel, a young San Jose firm that was concentrating on memory systems. Zitel improved its benefits package for employees, which proved an added incentive for the some 30 Intel people who chose to move with the product line to Zitel.

The MSO shutdown was a trying assignment. It involved disposing of the business, placing and retraining employees (almost 250 Intel people were absorbed in other company operations), and keeping production moving smoothly until manufacturing could be transferred to Intel in Oregon and Puerto Rico and to Zitel. But it proved the company's mettle in the face of a severe recession.

RJ Muna



One of the many awards and honors Intel and its employees have earned over the years is this Tiffany crystal piece which was presented to chairman Gordon Moore by *Dun's Review* magazine. Out of scores of companies across the nation, the magazine selected Intel one of America's five best-managed companies for 1980.

RJ Muna

Intel vice chairman, Bob Noyce, received the National Medal of Science from U.S. President Jimmy Carter in 1979. The National Medal of Science is the federal government's highest honor accorded U.S. scientists and engineers. Noyce was honored because of his work on a variety of semiconductor devices, especially the integrated circuit.

Employees are the most valuable assets of any company. In a book such as this it is impossible to name individually the thousands of employees who have helped build Intel into the leading corporation it is today. The following 910 employees, however, have earned special recognition because, as of June 30, 1984, each had reached his or her ten- or fifteen-year service mark.

FIFTEEN-YEAR EMPLOYEES

Patte Beem
Larry Brown
George Chiu
Nobuko Clark
Miriam Eichelkraut
Eugene Flath
Andrew Grove
Thomas Innes
Ted Jenkins
Jean Jones
Gerald Larson
Angie Lewis
Patricia McVey
Paul Metrovich
Gordon Moore
Robert Noyce
Gerhard Parker
Alice Ray
Thomas Rowe
Norman Shanks
Leslie Vadasz
Andy Volckaert

TEN-YEAR EMPLOYEES

A. Anchale
Richard Abascal
Carol Abbey
Robert Abbott
Abdul Jalil Bin Ibrahim
Abdul Mutalib B. Ali
Stephen Abreu
Dave Accornero
Cindy Adam
Kathleen Adelman
Carmen Afanador
Patricia Affeldt
Mary Aguilar
Gregory Ahearn
Nancy Ahre
Leticia Alcasid
Richard Aldrich
John Alfoldy
Alias Bin Ahmad
Mitsuko Allen
Quincy Allison
Josephine Alvarez
Ernestine Amaral
Aminah bt Che Wan
Aminah bt Sa'aid
Aminah bt Yusoff
Darlene Amos
Dorothy Anderson
Larry Anderson
Owe Anderson
Ang Chai Lean
Ang Geok Tin
Yolanda Antonio
Jovita Ara
Allonia Archie
Beatrice Arelliano
Maria Arenas
William Baerg
Gene Bailey
Flordivinia Bala
Helen Barieau
Carmen Barnes
Wilfreda Basa
Reijeana Battles
Mariana Bautista
Editha Baylon
John Beaston
Sharon Beckham
Ana Bedoya
Beh Yeang Hua
Neno Belecora
Pascual Bercasio
Cecile Bergeron
Dorothy Billingsley
Magdalena Birmodiz
Arnida Bituin
Lourdes Blanco
Rita Blanco
Dona Blobaum
Richard Bock
Edward Boleky
Ruth Bonilla
Jack Borok
Heriberto Botello
Margaret Bowes
Dennis Brabeau
Dorothy Brenden
Carrie Brenner
Lawrence Brigham Jr.
Margie Britt
Sharon Britton
Violet Brodesser
Lawrence Brown
William Brown
Rachael Bryant
Robert Buck
Pamela Buckley
Homer Buller
Ling Bundgaard
Erlinda Burkhart
Geoffrey Burns
Helen Burris
Margaret Burston
Richard Burton
Diane Butler
Joann Cablas
Jennie Calderon
John Calhoun
Oscar Camposagrado
Rita Canales
Ruth Cannon
Sylvia Cano
Nenita Canovas
Mary Cantere
Clarence Cantua
Emilita Canul
Cristina Cardona
Joanne Care
Edward Carpenter
Mary Carvalho
Ana Casco
Jessica Castillo
Leticia Castro
Sally Chambers
Chan Chong - Chan Seong Chong
Chan Gook Chee
Helena Chan
Chan Huan Heng
Chan Mei Lai
Chan Hooi Chin
Chan Quat Khin
Keith Chapple
Charles John
Cheah Kim Hoon
Che Bu bt Hamat
Che Jam bt Chin
Cheng Ah Ngia
Cheng Nai Choo
Cheong Saw Aing
Che' Puan Ismail
Che Saniah Bte Darus
Che Sayang bt Abdul Rahman
Che' Siah bt Ismail Tajudin
Chew Eue Hock
Robert Childress
Chin Cheng Lean
Chin Chew Fong
Ch'ng Saw Phaik
Chong Yoke Choon, Anthony
Choo Juat Boay
Choo Siew Bee
Sunlin Chou
Paul Christensen
Chuah Sow Tin
Eugene Churchill
Cik Rabhzi bt Chik
Amelia Clarke
Stephen Clifford
William Clifford
Don Clinkinbeard
Mary Cobb
Colet Cochran
Nancy Cole
William Cook
Chris Cooleman
Dean Coombs
Evert Cooper
Robert Cooper
Jean Claude Cornet
Paul Corona
Evelyn Corpus
Johnnie Corpuz
Maryann Corpuz
Conchita Cotillon
William Craig Jr.
Janet Creech
Ruby Creelman
Leroy Croll
Manuel Cron
Harry Cross
Page Cross
Izola Crum
Lorrie Cruz
Nenita Cruz
Philip Dahm
Robert Dalrymple
Jene Dass
William Davidow
Lance Day
Sharon Day
Kathryn Deagen
Bea Deem
Marlys Deets
Charles Dehont
Teresita Dela Cruz
Janet DeLeon
Virginia DeLeon
Rizalina Del Valle
Nobuyuki Denda
Robert DeVore
Steven Dickey
Michael Dion
Raeann Dixon
Stephen Domenik
Margie Downs
Jane Dredge
Sunja Drinkwater
Dave Duchan
Henry Dumlao
William Dunaway
F. Thomas Dunlap Jr.
J. Dunn
Catherine Earhart
Easah Bee bt Mond
Michael Edson
Alice Eduarte
Gerald Elder
Richard Elliott
Blain Erskine
Dorothy Esler
Elvira Espanto
Teresa Esparza
Abicinia Estacio
Delia Estrada
Joan Evans
Hilda Everson
Fadzilah bt Din
William Fagerstrom
Rosario Falsis
Faridah Hussain
Jose Faria Jr.
Barbara Farsaci
Fatimah Bee bt Sardar Mohamed
Fatimah bt Abd. Hamid
Fatimah bt Darwi
Fauziah bt Eusoff
Fazilah bt Osman
Shirley Fedora
Harold Feeney Jr.
Larry Feetham
Francis Fegan
Florabelle Feldbauer
Yung Feng
Remedios Fernandez
Donald Ferris
Sallee Fetter
Barbara Field
Joe Flack
Mary Flores
Maria Flores
Miguel Flores Jr.
Laurie Flores-Moore
Evelyn Fojas
Rae Forrest
Barbara Foster
Jennifer Frahs
Amor Francisco
Vickie Francone
James Frederick
Albertina Freiberger
Mary Frick
Rose Friedlund
Joseph Friedrich
Dov Frohman
James Fry
Mariano Gali
Amancia Gallegos
Joan Garber
Ruth Garcia
Esther Garcia
Jacqueline Gardner
Gazali Bin Ismail
Patricia Geary
Michael Geilhufe
Edward Gelbach
Eddie Gentry
Gerbak Singh
Pamela Gibeson
Bruce Giron
Bernard Giroud
Goh Hew Sim, Doris
Goh Poh Gaik
Goh Saik Choo
Errol Golsan
Robert Gomar
Manuela Gonzales
Debbie Gonzales
Mary Helen Gonzalez
Goon Soo Pheng
Howard Gopen
Gary Gossoo
Peter Governanti
Violeta Gracilla
Robert Greene
Jose Gregorio
Lawrence Gregory
Gert Griese
Josie Guerrero
Maria Guevara
Ronnie Gui Heng Huat
Elviro Guillen
Concepcion Guillena
Gurbachan Kaur
Joseph Gutierrez
Teresita Guting
Raymundo Guzman
Carol Hadsell
Patricia Hajduk
Verdale Hales
Halijah bt Ashari
Halimah Ashari
Andre Hall
Barbara Hall
Dorothy Hall
David Hamilton
Marcia Hamilton
Danilo Harder
Martha Haro
Harris Bin Mohd. Shariff
Cheryl Harrison
Marian Harrison
Hasnah bt Halim
Hatijah bt Yahaya
Patricia Hauser
Umar Hayat
Hazinah Osman
Michael Hernandez
Erma Herrera
Patricia Herrera
Karl Heydeck
Barbara Hill
Kirk Hirschfeld
Ho Hoay Teen
Ho Yee Hun
Paul Hoefler
Dolly Holsinger
William Holt
Laurence Hootnick
Hor Lean See
Grace Horibe
Roy Hornbaker
David House
How Lay Chin
Harold Hughes Jr.
Corazon Imbat
Raquel Ingram
Diane Irby
Ismail Nizar
Carl Ito
Michiko Itoi
Catalina Jacinto
Macaria Jacob
Arthur James
Thomas James
William James
John Janus
Jayamani
David Jeffrey
Richard Jensen
Mary Jett
Paz Jimenez
John Johansen
Elaine Johnson
James Johnson
Rose Marie Johnson
Bunpa Jones
Thomas Jones Jr.
Henry Josefczyk
Anais Kahermanes
Kaliyama Kandasamy
Kam Theam Huat
Kang Gaik Suan
Steven Kastner
Willard Kauffman
Gregory Kawabata
Kee Eng Lan
Elizabeth Kern
Dorenda Kettmann
Khalit Sin Yahaya
Kheong Cheow Chye
Khoo Chin Hoe
Khoo Kay Huat
Khoo Pek Wah
Khor Ah Moy
Kim Siew Gaik
Esther King
Glenn King
Lucille King
Theodore Kirkiles
Koay Siew Choon
Koay Siew Kooi
Deborah Koch
Tandy Koch
Judith Kochanowski
Julie Kreger
Ronald Kueber
Stephanie Kueber
Kuppusamy S/O Ramu
Jane La Fuente
Marsha La Grange
P.Y. Lai
Lalitah A/P Tannimalai
Cynthia Lamiel
Shelia Lane
Joseph Langston
Jeanne Latham
Lee Gim San
Lee Gih Siew
Lee Guat Kooi
Lee Kim Hiuk
Lee Kwee Choong
Lee Jee Siew
Lee Lay Hoon
Lee Saw Har
Dennis Lenehan
Leng Choy Fong
Evelyn Leones
Leong Mee Mee
Leow Ah Lan
Arnolfo Lesende
Isaac Levy
Norma Lias
Liew Chai Fong
Lily Jan bt Md. Joonos
Lim Ah Yang
Lim Bee Cheng
Lim Bee Keow
Lim Choon Ean
Lim Choon Seng, Joe
Lim Eng Hai
Lim Gaik Hong
Lim Geik Choo
Lim Hoe Teong
Lim Poh Keat
Lim Sau Leng
Lim Saw Sim
Lim Siew Hwah
Lim Sim Wah, Francis
Lim Swee Luan
Lim Tai Heang
Lim Teo Fung, Kathleen
Angela Lindsay
Linda Linn
Ludivina Lising
Danilo Llamas
Dolores Llamas
Loh Mei Fong
Loh Peng Kim
Loh Yuen Fatt, Steven
Loh Yuit Hoe
Frank Louie
Mark Lovestrand
Low Guk-Lan
Jose Lua
Larry Lubben
Lucas S/O Benjamen
Lupe Lujan
Terry Lundblad
Dennis Lundien
Ruth Lynch
Frank Ma
John Mack
Sylvia Madrigal
Benita Magday
Cynthia Magno
Maha Letchemi D/O Kolandeveloo
Maheswar A/P Subramaniam
Mah Mar Hak, Michael
Eugene Malatesta
Hattie Malone
Jacqueline Malsam
Ben Manny Jr.
Marian Manuel
Jerry Mar
Ted Marlbrough

Jennifer Martin
Richard Martin
Angie Martinez
Anthony Martinez
Elda Martinez
Maria Martinez
Mary Martinez
Richard Martinez
Yolanda Martinez
Sheila Marvin
Cynthia Marymee
Isla Mathews
Mathuran Thagee D/O Vasuthavan
Lorraine Matthews
Timothy May
Mazihah Osman
John McCollum
Margaret McFarland
Mary McGee
Deborah McKenna
Adeline McKinnon
Michael McNulty
Md. Mokhtar B. Hassan
Elvira Medrano
Victoria Mee
Eugene Meieran
Carmen Mendez
Beatrice Mendoza
Leone Mendoza
Patricia Mendoza
Barbara Mennell
Dennis Menta
Jose Mernelo
Howard Merritt
William Messick
Ed Metzler
David Miller
Rosario Miranda
Kenneth Mitchell
Mohd. Arshad B. Abd. Karim
Mohd. Azhar
Mohd. Ghazali
Mohd. Noor B Bakar
Mohd. Sohimi Mustaffa
Mohd. Yusoff Bin Md. Ibrahim
Brian Mohondro
Dale Moore
Wynema Moore
Lita Morales
Ross Morgan
Taylor Morgan
Tom Morrison
Terrence Mudrock
John Muhawi
Muhibuh Nicha bt Abdul Subhan
Lewis Mullen III
Asuncion Mulles
Anna Munoz
Jeanne Murphy
Na Chiew Chua
Joyce Naggar
Dianne Nation
Vinaya Natu
Potenciano Nava
Felicidad Navarro
Rafi Nave
Jacquelyn Navone
Wayne Needham
Linda Nelson
Neoh Siew Eng
Mary Nesbit
Marie Nesbitt
Robert Nesbitt
David Neubauer
Robert Nichols
Michael Ng
Ng Poy Lai
Ng See Keong, John
Ng Siew Hong
Ng Tong Hoon, Dicky
Thomas Nolan
Noor Azmi Bin Mohd. Noor
Nooriyah Yusoff
Noorjahan bt Abdul Haid
Noraini bt Hassan
Normah bt Jan Mat
Normah bt Mohd. Noor
Normah Hashim
Normah Mohd.
Norman Sheikh Mohd.
Norsiah bt Mohd.
Betty Northup
James Nutter
Jacquiline Nyburg
Rosario Obar
Connie Ocana
Teresa Oceguera
Maria Ochoa
Karen O'Connell
Carlota Ogana
Oh Swee Kin
Leticia Ojeda
Janet Oliveira
Noemia Oliveira
Angelo Onalfo
Ong Ah Hock
Ong Beng Hock
Juliet Ong
Ong Cheng Huah
Ong Phaik Suan
Ong Seok Gnoh
Ooi Ah Choo
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Ooi Gaik Tin
Ooi Guat Poh
Ooi Hock Chai
Ooi Kay Suan
Ooi Kin Huat
Ooi Kooi Lian
Ooi Mui Kui
Ooi Pho Chuan
Ooi Saw Lian
Oon Hee Kai
Oon Soo Chee
Gloria Orden
Bonnie Ortega
Thomas Orton
Osman Omar
Mona Otomori
Raquel Pacheco
Lydia Padua
Linda Pajarillo
Chester Palmer
Elsie Palomar
Dionisia Panelo
Carmen Paredes
Katharina Parker
Norma Parlin
Ronald Parsons
Forrest Parsons
Elena Pasache
Gregory Pasco
Corazon Pascual
Richard Pashley
Dolores Pasion
Mila Patricio
Alan Patterson
Ellen Patterson
Graham Paul
Carmen Penaranda
Jacob A. Pena
Estrella Perea
Rose Perez
Blaine Peterson
Craig Peterson
Imogene Petruce
Philip Limuco
Alfred Phillips
Gloria Phillips
Phuah Chiew Lan
Phuah Siew Hong
Phuah Siew Soon
Yvonne Pierson
Sonia Pinillos
William Pinter Jr.
Brenda Pixley
Terrence Plette
P'ng Gaik Hwa
Poh Sin Eng
Harvey Press
Thelma Prince
Cheryl Pruss
Pubalan Govindasamy
Pushparani D/O Saminathan Pillai
Quah Eng Siang
Quah Siew Khuan
Josefina Que
Camille Quenneville
Gabriell Quenneville
Roberto Querubin
Ernest Quinones
Dorthella Rader
Rajeswary D/O Jaganathan
Mercedes Raquel
Debra Rattler
Justin Rattner
Donald Ray
Faye Ray
Michael Ray
Magdalena Rayonez
Leonida Razon
Marcelina Rebugio
Rebecca Reddin
Oscar Reeder Jr.
Regina D/O Arulandu
William Regitz
Kenneth Reid
Dora Rendon
Mary Rendon
Renuka Devi D/O Kannan
Rolando Reyes
Linda Reynolds
Wayne Ricciardi
Shirley Riddley
Patricia Ridley
Virgie Ring
Alan Risk
Celia Rivas
Santos Rivera Jr.
Daniel Robbins
Laura Robbins
Rodiah bt Morat
Maria Rodrigues
Hoy Rogers
Marjorie Rogers
Rokiah Bee bt Babjan
Cheryl Romani
Josephine Romero
Stuart Rosenberg
Rosinah Man
Alan Rowland
Rugayah bt Bakar
Esther Ruiz
Teresita Ruiz
Xochitl Ruiz
Kathleen Rusk
Max Rusk
Logan Sage
Faustino Salamanca
Barbara Salcido
Carmen Sallas
Sallem Idrus Bin Din
John Samoranos
Teresita Santos
Santha Bai
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Sheila Sardi
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Timothy Sargent
Saridah bt Ahmad
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Karen Sarid
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Frank Schillaci
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Suppamah D/O Ledchumanan
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Carry Talhelm
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Tan Ai Bee
Tan Bee Eng
Tan Bee Eng
Tan Cheng Im
Tan Chong Huat
Tan Eng Bee
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Tan Guat Bee
Tan Kim Duan
Tan Lay Beng
Tan Leong Wah
Tan Peng Hong, Patrick
Tan Phaik Suan
Tan Seng Huat, Gordon
Tan Siew Bee
Tan Swee Hong
Tan Sze Geok
Tan Teik EE, Swas
Tan Thean Yean
Akira Tanabe
Tay Geok Hong
Joan Taylor
Kathleen Taylor
Susan Taylor
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Teh Teow Hai
Teng Siew Lean
Nicanora Tenorio
Teoh Kim Geok
Teoh Seok Keong
Teoh Soo Cheng
Tham Geek Mooi
Kenneth Thompson
Keith Thomson
Michelle Thorstad
Regina Todd
Toh Sin Lean
Toh Ah Ngoh
Sharon Tolby
Virgie Tomas
Gary Toms
Angelina Torres
Zenaida Torres
Mary Toth
Jeanette Tovar
Marshall Townsend
Teresa Trawinski
Renee Turner
Gloria Tynes
Donna Van Buren
Greenie Van Buren
Charles Vanleeuwen
Jerald Vannier
Ronald Vargas
Connie Velez
Theodore Vian
Charlene Vierra
Nancy Vierra
Vijayal D/O Ramasamy
Weixler Vila
Evelyn Villalon
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Yeap Say Sim, Helen
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Yeoh Chye Har
Yeow Un Poh
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James Yong
Yow Ah Kin, Catherine
Zainab bt Md. Hussain
Zainab Mat Kassim
Zainul Abidin Bin Abu Bakar
Zaleha Bee bt Yacob
Zarinah bt Mohd. Hussein
Zarinah Bibi bt Sheriff
Zarina bt Sinthar Madar
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3065 Bowers Avenue
Santa Clara, CA 95051

Printed in USA/1284/60K/D265/CG/GK
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Order number: 231295

EXHIBIT D

Borders Group And Intel Promote High-Speed Wireless Internet Access At Borders Books & Music® Stores Nationwide

ANN ARBOR, Mich. and SANTA CLARA, Calif., March 11, 2003 – Borders Group Inc. and Intel Corporation today announced an agreement to launch a joint marketing campaign to promote the availability of high-speed wireless Internet access to customers at more than 400 Borders Book & Music locations nationwide. The program coincides with the launch of the Intel® Centrino™ mobile technology for notebook PCs that feature built-in wireless capability.

The co-marketing agreement between Borders and Intel will include a signage program that identifies where Intel-verified wireless Internet zones (aka hotspots) are located. T-Mobile is providing the wireless service offered at Borders and has worked with Intel to verify the compatibility of the network with Intel Centrino mobile technology.

"We are extremely excited about Centrino mobile technology's ability to provide a better wireless broadband experience and integrate of Wi-Fi into the lives of our customers," said Tami Heim, president, Borders stores. "More than 400 Borders hotspot locations will be live by this summer, enhancing our stores and reinforcing Borders as the best loved provider of books, music, movie and entertainment products."

"In preparation for the launch of Intel Centrino mobile technology, Intel is working with leading edge companies such as Borders to verify wireless compatibility and drive awareness of hotspots and wireless technologies that will change how and where people compute," said Ann Lewnes vice president, Intel Sales and Marketing Group, and director, Intel Inside® Program and Co-Marketing. "Whether at work, in an airport or caf?Centrino mobile technology offers the freedom and flexibility of being unwired."

About Borders Group, Inc.
Borders Group is a leading global retailer of books, music, video and other information and entertainment items with stores in the United States, United Kingdom, Australia, New Zealand, Singapore, and the commonwealth of Puerto Rico. A FORTUNE 500 company headquartered in Ann Arbor, Mich., Borders Group employs 32,000 worldwide and operates over 405 Borders domestic superstores, 31 international Borders stores, 37 Books etc. locations and approximately 775 Waldenbooks stores. Teamed with Amazon.com, the company also offers online shopping through Borders.com and Waldenbooks.com. More detailed information on the company is available at www.bordersgroupinc.com. Information on Borders stores is available through www.bordersstores.com.

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McDonald's and Intel Debut High-Speed Wireless Access in Manhattan Restaurants

Eat In and Log On at McDonald's!
Fast, Easy Internet Access Begins in New York
Several Hundred McDonald's Restaurants in Three Major U.S. Markets by Year End

OAK BROOK, Ill. and SANTA CLARA, Calif. [redacted] Selected McDonald's restaurants in New York City now offer high-speed wireless access for customers who are constantly "on-the-go" and looking for a place to eat, rest and log-on to their laptop computers. The pilot program currently includes 10 McDonald's restaurants in Manhattan and is scheduled to expand to several hundred restaurants in three major U.S. markets by year's end.

McDonald's Corporation (NYSE: MCD) today launched a joint marketing campaign promoting a new dimension of customer service that delivers high-speed wireless access to coincide with the launch of Intel® Centrino™ mobile technology for notebook PCs that feature built-in wireless capability. The co-marketing agreement between McDonald's and Intel will include advertising, in-store merchandising and a signage program that identifies where Intel-verified wireless Internet zones are located.

"McDonald's is bringing broadband to Broadway," said Mats Lederhausen, president of McDonald's Corporation's Business Development Group. "McDonald's pioneered convenience so it makes perfect sense for us to offer our customers a great way to unwire, unwind, enjoy an Extra Value Meal and catch up on email."

McDonald's is scheduled to test high-speed wireless access in hundreds of restaurants in New York City, Chicago and a major market in California by the end of the year.

"McDonald's is known for being at the heart of where people work and live, so offering our customers another value -- Internet access -- is a great example of being the most relevant choice out there," said Lederhausen. "Both McDonald's and Intel understand how important value, speed, convenience and ease of service are for today's time-pressed consumer."

For the next three months, wireless-enabled laptop customers in New York City who purchase an Extra Value Meal™ at participating McDonald's restaurants will receive an added benefit-- one hour of free high-speed wireless Internet access. Customers also can purchase a single session of up to 60 minutes for $3.00.

Current estimates indicate the number of wireless consumers is growing rapidly, with more than 78 million "windshield warriors" nationwide today. "This partnership is all about a new way of connecting with our customers and maximizing the power of our convenient locations," said Lederhausen. McDonald's is offering an open network for all wireless users, so customers do not have to set up an account.

"Whether you're a 'road warrior' who's starving for a trusted wireless connection or a student seeking a quick and convenient place to download, Intel is working with leading edge companies such as McDonald's to verify wireless compatibility and drive awareness of hotspots and wireless technologies that will change how and where people compute," said Ann Lewnes, Intel vice president, Sales and Marketing Group, and director, Intel Inside® Program and Co-Marketing. "Whether at work, in a restaurant, at an airport or hotel, Centrino mobile technology delivers the freedom and flexibility of being unwired."

Intel's Wireless Verification Program includes engineering and testing of the Intel Centrino mobile technology with network architecture that supportsvarious wireless access points, software combinations, hotspot locations, and wireless service providers to ensure they are all compatible, further enhancing the consumer's

wireless experience.

In addition to McDonald's customers, this wireless service is also accessible to McDonald's employees. "This technology enables us to share information immediately with hundreds of mobile employees who are dedicated to serving our customers and our restaurants," said David Weick, chief information officer for McDonald's Corporation.

About McDonald's
McDonald's is the world's favorite restaurant, with more than 30,000 local restaurants serving 46 million people each day in 119 countries. Approximately 85 percent of all McDonald's restaurants worldwide are owned and operated by independent franchisees. More information about McDonald's is available at http://www.mcdonalds.com and for further details about this initiative and locations of participating restaurants, visit http://www.mcdwireless.com.

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Toshiba And Intel To Advance Adoption Of Wireless Broadband Hotspots Across The United States

Marketing program to support and compliment Intel® Centrino™ mobile technology offerings from Toshiba

IRVINE, Calif., and SANTA CLARA, Calif., March 10, 2003 -- Toshiba's Computer Systems Group (CSG) today announced it is working with Intel Corporation on a joint marketing campaign to advance the adoption of wireless broadband hotspots. The program coincides with the forthcoming launch of Intel® Centrino™ mobile technology for notebook PCs that features built-in wireless capability. Toshiba will support the Intel Centrino mobile technology introduction with new mobile and wireless computing products on March 12.

Toshiba and Intel are working together to drive awareness of wireless broadband hotspots at public locations such as coffee shops, hotels and convenience stores. The co-marketing agreement will include direct marketing, advertising and point-of-sale materials. Additionally, the companies are performing interoperability verification on Intel's Centrino mobile technology with Toshiba's network, through Intel's Wireless Verification Program, to enhance the end users' wireless experience.

"We will strive to give our customers the most innovative mobile platforms, but we are also looking to fill the void in wireless access in public spaces," said Oscar Koenders, vice president of product marketing and worldwide product planning, Toshiba CSG. "We have an aggressive hotspot strategy and plan to wirelessly enable public locations across the country and believe that wireless technology combined with the notebook computer is a powerful and even addicting combination based on our customers' feedback."

Toshiba's Wireless Broadband Hotspot solution allows end users with Wi-Fi enabled notebooks or PDAs to connect with the access point, or hotspot to launch an Internet browser and access e-mail, surf the Web, watch streaming video or download multimedia presentations. Using Wi-Fi technology, also referred to as 802.11b, Toshiba's hotspot service makes it convenient for people who are traveling to connect to any Toshiba hotspot, reducing the complexity of data connection around the ability to gain remote access.

Intel's new Centrino mobile technology includes a mobile processor, chipset and built-in WiFi capability that have been designed to work together to enable a great wireless notebook experience. The Intel Centrino mobile technology represents Intel's best technology for mobile computing and delivers an unwired computing experience while enabling extended battery life, outstanding mobile performance and thinner and lighter system designs.

"Intel and Toshiba are working together to advance wireless computing for mobile PC users by enabling broadband hotspots across the country," said Anand Chandrasekher, vice president and general manager, Intel's Mobile Platforms Group. "Our joint efforts provide business customers and consumers with the mobile computing devices and the network that enables the freedom and flexibility to wirelessly work and play."

The Toshiba Wireless Broadband Hotspot Solution is a new business opportunity that enables dealers and resellers to enter the hotspot market with little capital and minimal time. Toshiba's hotspot solution can generate revenues through connection for wireless access at each hotspot deployed by the hotspot operator. Hotspot operators simply sell and install the hardware and conduct maintenance at the hotspot location, while Toshiba and Accenture maintain responsibility for back-end service and support to end users. Interested dealers may visit www.hotspot.toshiba.com for more information.

About Toshiba America Information Systems, Inc.

Toshiba Computer Systems Group is a division of Toshiba America Information Systems, Inc. ("TAIS"), a leading vendor for portable computers. In addition to notebooks, the company offers portable and wireless accessories, Pocket PCs, projectors and mobile server computing solutions for business customers under the Toshiba brand name. For more information call 1-800-TOSHIBA or visit the company's Web site at www.csd.toshiba.com.

Headquartered in Irvine, Calif., TAIS is comprised of multiple divisions that provide computer, communications and imaging products and services. Products include industry leading portable computers, PDAs, mobile computing accessories, servers, including communications and portable servers, storage subsystems, cable modems, digital business telephone systems, voice-mail, digital cameras, security systems, and projectors. TAIS provides sales, marketing, services and manufacturing for its wide range of information products in the United States and Latin America. TAIS is an independent operating company owned by Toshiba America, Inc., a subsidiary of Toshiba Corporation, which is a world leader in high technology and integrated manufacturing of electrical and electronic components, products and systems. Toshiba has global sales of over $40 billion and more than 300 subsidiaries and affiliates worldwide.

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Portland Named 'Hottest' Spot In Intel's 'Most Unwired Cities' Survey

Wireless Mobile Computing on the Rise Nationwide

SANTA CLARA, Calif., March 4, 2003 - The most unwired city in America is ? Portland, Ore.

The Portland metropolitan statistical area (MSA) ranks as the top market for wireless Internet accessibility, according to Intel's "Most Unwired Cities" survey released today. The survey reveals a growing number of metropolitan areas across the country where people have greater freedom to access information and entertainment on notebook PCs and wireless Internet connections.

Outpacing typical trendsetters Los Angeles (No. 13) and New York (No. 23), Portland and its residents are quickly embracing this new unwired lifestyle, evidenced in part by the region's growing number of "hotspots." Hotspots are areas where users can tap into WiFi - short for wireless fidelity networks - with their laptop PCs, personal digital assistants and other devices. They enjoy a truly mobile experience without the constraint of a fixed or wired connection.

Following Portland on the top 10 unwired MSA list are San Francisco; Austin, Texas; Seattle; Orange County, Calif.; Washington, D.C.; San Diego; Denver; Ventura, Calif.; and Boston. The West leads all other regions with eight metropolitan areas in the top 10.

The complete list of Intel's "Most Unwired Cities" is available at:
www.intel.com/products/mobiletechnology/unwiredcities.htm

The Intel "Most Unwired Cities" survey was conducted by Bert Sperling, a research analyst well known for compiling Money Magazine's annual "Best Places to Live" feature.

"For so long, being 'wired' was shorthand for being connected to the Internet," Sperling said. "Now, we don't need the wires. Wireless network technology is changing the way people work and live in these cities."

More than 3,700 hotspots are currently in the United States.[1] They appear in such unexpected locations as a barbershop on Long Island, a chowder house in Seattle, a pub in California's Lake Tahoe and a pool hall on Maui. In addition, such companies as Starwood Hotels, Marriott International Inc. and Connexion by Boeing are enabling customers to enjoy an unwired mobile computing experience while sitting in a hotel lobby or while flying at 30,000 feet.

"WiFi is the most revolutionary technology to hit the computing world since the arrival of the Internet browser in the early 1990s," said Sean Maloney, Intel executive vice president and general manager of the Intel Communications Group. "WiFi promises to do for computing what cell phones did for voice communication. It is eliminating boundaries and allowing people to access the Internet and communicate freely while they're on the go."

The Unwired PC

Along with the rapid deployment of hotspots, analysts foresee dramatic growth in the sales of wireless-enabled notebook PCs. Market research firm IDC predicts that wireless-enabled notebooks will represent 35 percent of all mobile PC sales in 2003 and 96 percent in 2006.[2]

Later this month, Intel will introduce Centrino™ mobile technology, Intel's best technology for wireless notebook

PCs. "Intel Centrino mobile technology will usher in a new generation of notebook PCs that are thinner, lighter and offer built-in wireless LAN capabilities," said Anand Chandrasekher, Intel vice president and co-general manager of the Intel Mobile Products Group. "Centrino mobile technology will help bring this exciting world of wireless to the mainstream."

About the Survey

Survey findings are based on the number of public and commercial wireless access points (hotspots), cell phone coverage offering wide area network Internet access and Internet penetration. The data was also calculated at the per-capita level to determine how many people share hotspots within a given city or region. The data was collected from a variety of industry sources and weighted across a 100-point scale.

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

[1]IDC 2003
[2]IDC 2003

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T-Mobile And Intel To Promote Wireless Broadband

BELLEVUE, Wash., and SANTA CLARA, Calif., March 3, 2003 – T-Mobile USA and Intel Corporation today announced an agreement to launch a joint marketing campaign to promote T-Mobile's WiFi (802.11) high-speed wireless Internet service, the most widely available public network of its kind with more than 2,100 locations across the country. The program coincides with the upcoming introduction of Intel® Centrino™ mobile technology for notebook PC's that feature built-in wireless capability. T-Mobile is also announcing new monthly pricing plans for unlimited T-Mobile HotSpot℠ service, as the company further delivers on its GET MORE® promise to provide customers with the best overall value in their wireless voice, messaging and high-speed data services.

T-Mobile and Intel are working together to drive awareness of T-Mobile HotSpot service where notebook users can wirelessly connect to the Internet and corporate networks at fast speeds at airports, airport lounges, book stores and coffee houses.

In addition, to enhance the end users' wireless experience and enable interoperability, T-Mobile and Intel have conducted engineering testing or "verification" of the Intel Centrino mobile technology on T-Mobile's network. The two companies are also working on co-marketing initiatives, including advertising, on-line marketing campaigns and co-branded signage, to drive awareness for T-Mobile HotSpot locations.

T-Mobile today announced new monthly pricing plans. For $29.99 a month, customers get unlimited access, with an annual agreement, to the T-Mobile HotSpot service at more than 2,100 locations nationwide including Starbucks coffee houses, national and regional airports and American Airlines Admirals clubs. The service will also be available in new locations as they are deployed, including airports, Borders Books and Music, and United and Delta Air Lines clubs and lounges.

Intel's new Centrino mobile technology includes a new mobile processor, chipset and built-in WiFi capability that have been designed to work together to enable a great wireless notebook experience. This technology will be implemented in PC manufacturers' notebook computers and will be available in March.

"The agreement between T-Mobile and Intel is a big win for our customers," said Cole Brodman, senior vice president and chief development officer, T-Mobile USA. "The Intel Centrino mobile technology represents an important step toward consumerizing WiFi service, making it more affordable and more accessible through a range of integrated devices."

The Intel Centrino mobile technology brand represents Intel's best technology for mobile computing and is designed to deliver an unwired computing experience while enabling extended battery life, outstanding mobile performance and thinner and lighter form factors.

"Notebook users want the freedom of being unwired while enjoying longer battery life and cutting-edge performance when they are accessing the Internet," said Anand Chandrasekher, vice president, Intel Mobile Platforms Group. "Intel is pleased to work with the leading wireless service provider like T-Mobile to enable a great user experience with Intel Centrino mobile technology at T-Mobile HotSpots."

T-Mobile operates the largest WiFi network in the country and was the first U.S. wireless carrier to fully embrace wireless broadband technology as a complement to its wireless voice and 2.5 G high-speed data services. With T-Mobile, customers get a complete wireless voice and data service offering that meet their needs and provides business people both mobility and true office portability.

About T-Mobile USA, Inc.
Based in Bellevue, Wash., T-Mobile USA, Inc. is one of the fastest growing providers of wireless voice and high-speed data services. T-Mobile operates a nationwide GSM/GPRS voice and high-speed data network that covers more than 210 million people. Additionally, T-Mobile operates the largest carrier owned Wi-Fi (802.11b) network in the country, under the service name 'T-Mobile HotSpot.' T-Mobile USA is a member of the T-Mobile International group, the mobile telecommunications subsidiary of Deutsche Telekom (NYSE: DT). T-Mobile is committed to providing the best value in wireless service through its GET MORE?romise to provide customers with more minutes, more features and more service than any other wireless provider. For more information, visit the company web site at www.t-mobile.com.

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Intel CEO Craig Barrett: Innovation Unwires The Consumer

INTERNATIONAL CONSUMER ELECTRONICS SHOW, LAS VEGAS, Jan. 9, 2003 – Intel CEO Craig Barrett said that technology innovation will unwire consumers, giving them more freedom to connect to people, information and entertainment at any time from any place on any device.

"Unwiring the consumer is the next logical advance in consumer electronics," Barrett said from the 2003 International Consumer Electronics Show, where he will deliver a keynote speech later today. Barrett will describe the technology forces shaping the marketplace, industry innovations that are unwiring consumers, and the need to bring interoperability to computing and consumer electronics devices within the home.

"All consumers will be digital consumers," Barrett said, explaining that a worldwide digital conversion is being driven by the personal computers, proliferation of digital devices and content, the rapid adoption of broadband and wireless technologies, and the ongoing Internet build-out. "At the same time, young people who have grown up alongside powerful home PCs, cell phones and the Internet are now coming into the marketplace as digital consumers. They are connected by technology that permeates and enriches their lives in ways not experienced by previous generations."

Brought up in an era of fast-moving technology innovation, these digital consumers have higher expectations of what tomorrow's devices must do.

"Consumers will be drawn to devices that give them greater mobility, productivity and style, as well as new ways to enjoy digital music, movies, photos and games in more places," Barrett said. "Unwiring the consumer minimizes physical connections and inspires people's imaginations to explore new ways to work, live and play through easy-to-use technology."

To accelerate the process of unwiring the consumer, Intel is bringing more capabilities to silicon and creating new computing and communications architectures.

"This developmental work will lead to the creation of unwired digital devices, more users and more opportunity," Barrett said, adding that in the future all devices will be able to communicate and compute. "Consumers want technology to be available at any time and any place," he said.

Since introducing the Extended PC concept two years ago at CES, Barrett said powerful PCs connected to the Internet and a vast array of such new digital products as digital cameras, MP3 players and personal digital assistants (PDAs) have become a reality for consumers worldwide.

"The PC remains the most powerful and flexible device available to consumers, and it continues to evolve with new capabilities," Barrett said. "The PC is becoming unwired; wireless technologies are being integrated into the PC, which will offer the user more freedom and flexibility."

Barrett said that in the first half of this year, Intel will introduce the Intel® Centrino™ mobile technology for notebook computers. The technology includes a wireless capability as well as features designed to enable extended battery life, thinner and lighter form factors, and outstanding mobile performance.

"The Intel Centrino mobile technology will bring more communications capabilities to the notebook PC," Barrett said.

Citing the recent introduction of Hyper-Threading (HT) Technology, Barrett said that Intel will continue to bring

innovation to the desktop PC. The PC is extending wirelessly to enable consumers to view images, music and video any where in the home. HT Technology, available on the Intel® Pentium® 4 processor at 3.06 GHz, enables a new class of desktop PCs to work simultaneously among several computing applications, such as playing a realistic PC game while burning a CD, or running a virus scanning program while editing family photos.

Intel® XScale™ Technology is a third Intel architecture that merges communications and computing capabilities within a single device. XScale technology allows for new cellular phones, PDAs as well as new types of handheld devices such as Personal Media Players and Smart Displays. Smart Displays are wireless flat-panel displays that are used as monitors when docked to a base desktop PC, but when detached, become a mobile monitor using 802.11b wireless LAN technology to access information and applications from the desktop PC.

Barrett said these architectures and devices will be connected and interoperate through advances in software and wireless technologies.

In 2003, Intel will pursue greater cooperation among PC and consumer electronics industry leaders to advance the inevitability of the Digital Home where personal computing and consumer electronics devices work together simply and easily. Interoperability among devices in the home and solutions for content protection are critical components to enable the Digital Home so that consumers can create and distribute personal content and acquire and distribute premium content within the home.

Barrett's keynote will feature unwired demonstrations of the extended wireless PC, Intel Centrino mobile technology and the future of the Digital Home.

Intel's CES Booth Will "Inspire, Unwire"
Under the theme "Inspire, Unwire," Intel's CES booth will feature three theaters where attendees can participate in the latest experiences in gaming, multimedia and convergence. Each theater will showcase PCs based on the Intel® Pentium® 4 processor at 3.06 GHz with HT Technology, notebooks based on the Mobile Intel® Pentium® 4 Processor-M and Intel Centrino mobile technology, and handheld devices based on Intel® XScale™ Technology. Every demo is wireless, operating on either an 802.11a or 802.11b network. The booth (#14607) is located in the Central Hall of the Las Vegas Convention Center.

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

Important Information: Wireless connectivity requires additional software, services or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life and functionality will vary depending on your specific hardware and software.

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Starwood And Intel Enable Wireless Internet Access In Hotels Nationwide

WHITE PLAINS, NY and SANTA CLARA, Calif., Feb. 12, 2003 – Starwood Hotels & Resorts Worldwide, Inc. (NYSE:HOT) and Intel Corporation today announced a marketing agreement to enable wireless Internet access in more than 150 Sheraton, Westin and W hotels in the United States.

The installation of wireless 802.11, or Wireless Fidelity (WiFi) technology, in Starwood hotels will take place between March and August and coincides with the upcoming launch of Intel® Centrino™ mobile technology for notebook PCs. Intel's Centrino mobile technology features built-in wireless communications capability.

Starwood and Intel are working together, through nationwide marketing, advertising and in-hotel promotion, to drive awareness of WiFi hotspots in participating Starwood hotels where notebook users can connect to the Internet and corporate networks wirelessly. In addition, Starwood's wireless LAN solution will also enable the use of other wireless devices such as PDAs, pocket PCs and tablets. Hotspots will primarily be installed in hotel lobbies and public areas to complement in-room high-speed Internet access already installed in most Starwood hotels.

"Frequent business travelers tend to be early adopters of new technology, especially technology that makes life on the road easier and more productive," said Steven M. Hankin, president, Starwood Technology and Revenue Systems. "By being among the first to offer WiFi connectivity, Starwood's hotels will benefit as awareness and usage of WiFi builds and users search out hotspots when traveling. We continue to aggressively research new technologies, and develop technology amenities that make sense for our guests."

"In preparation for the launch of Intel Centrino mobile technology, Intel is working with companies such as Starwood to establish hotspots that will enable consumers and business travelers to have wireless access worldwide," said Ann Lewnes Intel vice president, Sales and Marketing Group, and director, Intel Inside® Program and Co-Marketing. "Through this agreement, we are enabling notebook users to have access to their information and entertainment in the common areas of the hotel."

Intel designed Centrino mobile technology from the ground up, as well as optimized and validated a set of technologies to enable an outstanding mobile experience. The Intel Centrino mobile technology brand represents Intel's best technology for mobile computing based on a new processor architecture and wireless LAN capability and is designed for an unwired computing experience while enabling extended battery life, outstanding mobile performance and thinner and lighter form factors.

About Starwood Hotels & Resorts Worldwide, Inc.
Starwood Hotels & Resorts Worldwide, Inc. is one of the leading hotel and leisure companies in the world with more than 750 properties in more than 80 countries and 110,000 employees at its owned and managed properties. With internationally renowned brands, Starwood is a fully integrated owner, operator and franchisor of hotels and resorts including: St. Regis, The Luxury Collection, Sheraton, Westin, Four Points by Sheraton, W brands, as well as Starwood Vacation Ownership, Inc., one of the premier developers and operators of high-quality vacation interval ownership resorts. For more information, please visit www.starwood.com.

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

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A New Notebook Produc Designed Specifically for Mobile World

Announcing Intel® Centrino™ mobile technology. Intel is expanding its history of innovation with new notebook capabilities designed specifically for the mobile world. Soon, you'll be able to work, play and connect without wires. And choose from a whole new generation of thin and light notebooks that are designed to enable extended battery life.

This new innovative technology delivers cutting-edge system performance and low-power enhancements to enable extended battery life in notebook PCs, combined with integrated wireless connectivity and standards-based security support.

With Intel Centrino mobile technology, three components work together to deliver a breakthrough in freedom and capability—so you can work, learn and play on the go. These components include:

- Intel® Pentium® M Processor
- Intel® 855 chipset family
- Intel® PRO/Wireless network connection

The Intel Centrino mobile technology brand is your assurance that you're using innovative and reliable technology. With Intel Centrino mobile technology, you won't need to study a technical manual or bring along special equipment to connect on the go. That's because Intel is working with hardware and software developers, and wireless services providers, to deliver a reliable and integrated wireless mobile computing experience.

Work, Play and Connect Without Wires

With Intel® Centrino™ mobile technology, you'll be able to connect from WiFi-certified wireless LAN networks and hotspots all over the world. Without hunting for a phone jack or plugging in a special card. Find out more.

Get a Notebook That Enables Extended Battery Life

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Intel Centrino mobile technology enables extended battery life and keeps you going—so you'll be able to unplug without being disconnected. Find out more.

Experience Cutting-Edge Notebook Performance

Get the advanced mobile computer power you need when you're away from your desk. Intel Centrino mobile technology based notebooks are engineered to run the most sophisticated multimedia programs. Find out more.

Use a Sleeker, Lighter Notebook

Intel Centrino mobile technology is uniquely designed for mobility. And that means you'll be able to choose from a whole new generation of lighter, sleeker notebooks. Find out more.

Wireless connectivity requires additional software, services or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life and functionality will vary depending on your specific hardware and software.

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Mobile Technology Advancements

Announcing Intel® Centrino™ mobile technology. Intel is expanding its history of innovation with new notebook capabilities designed specifically for the mobile world. Soon, you'll be able to work, play and connect without wires. And choose from a whole new generation of thin and light notebooks that are designed to enable extended battery life.

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- Intel® 855 chipset family
- Intel® PRO/Wireless network connection

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Work, Play and Connect Without Wires

With Intel® Centrino™ mobile technology, you'll be able to connect from WiFi-certified wireless LAN networks and "hotspots" all over the world. Without hunting for a phone jack or plugging in a special card. Find out more.

Get a Notebook that Enables Extended Battery Life

Intel Centrino mobile technology enables extended battery life and keeps you going—so you'll be able to unplug without being disconnected. Find out more.

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Experience Cutting-Edge Notebook Performance

Get the advanced mobile computer power you need when you're away from your desk. Intel Centrino mobile technology based notebooks are engineered to run the most sophisticated multimedia programs. Find out more.

Use a Sleeker, Lighter Notebook

Intel Centrino mobile technology is uniquely designed for mobility. And that means you'll be able to choose from a whole new generation of lighter, sleeker notebooks. Find out more.

Wireless connectivity requires additional software, services or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life and functionality will vary depending on your specific hardware and software.

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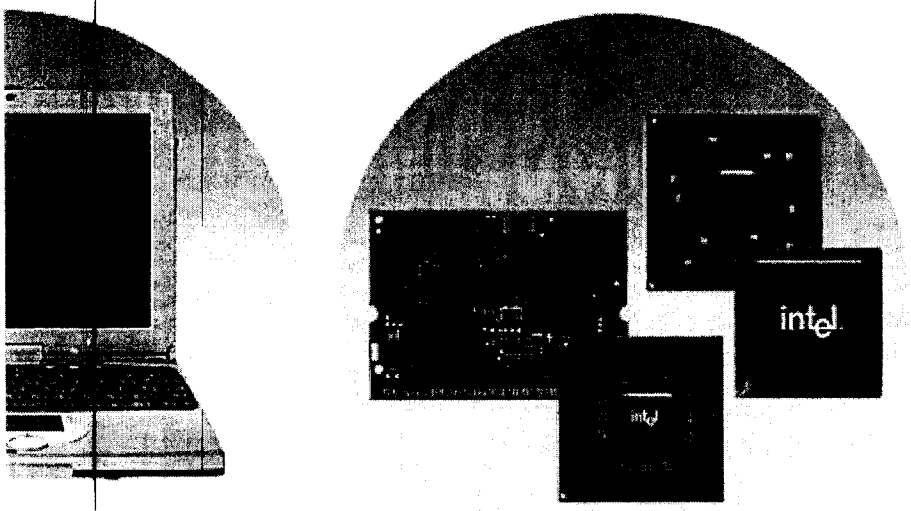
Designed from the ground up for mobility, Intel® Centrino™ mobile technology brings together key Intel silicon components, all integrated, designed and validated by Intel to work together.



Mobile Technology

This new innovative technology delivers cutting-edge system performance and low power enhancements to enable extended battery life in notebook PCs, combined with integrated wireless connectivity and standards-based security support. With Intel® Centrino™ mobile technology, three components work together to deliver a breakthrough in freedom and connectivity. These components include:

- **Intel® Pentium® M processor**
- **Intel® 855 chipset family**
- **Intel® PRO/Wireless network connection**

See how Intel is collaborating with the wireless technology industry.

Get more details now.
Sign up for product updates.

Wireless connectivity requires additional software, services, or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life, and functionality will vary depending on your specific hardware and software.

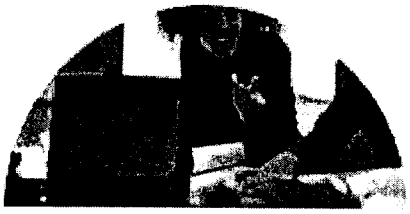
Your workforce wants greater mobility. You want lower Total Cost of Ownership (TCO) and longer platform stability. And now, one new mobile technology is about to deliver the true mobility your users crave — along with the Intel-tested and tuned platform reliability and compatibility you expect.

Lower your TCO.

With a host of new technology benefits including integrated wireless, connectivity at public and private WLAN hotspots, and increased platform stability, Intel® Centrino™ mobile technology can make client management easier, drive down IT costs, and reduce user downtime.

The Intel Centrino mobile technology brand is your assurance that you have technology that enables extended battery life, high performance, and integrated wireless LAN (WLAN) capability — all in the sleekest notebook designs available. So users will be able to stay connected and productive on the go.

Help your users be more productive than ever.



Get longer platform stability.

Designed to provide up to 18 months of stability, Intel Centrino mobile technology will reduce qualification costs, enable management of a broad range of PCs with the same software image, and free up IT to focus on other business-critical tasks.

See Intel® Centrino™ mobile technology on the road.

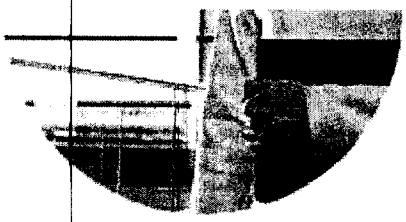
- **Get more details now.**
- **Sign up for product updates.**

Wireless connectivity requires additional software, services, or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life, and functionality will vary depending on your specific hardware and software.

Deploying early in the Intel Centrino mobile technology lifecycle is the best way to ensure long platform stability. A full 18 months of platform stability is achievable if you purchase and deploy the earliest commercially available Intel Centrino mobile technology platform-based systems.

Multiple chipsets are available and care must be taken to select systems that use the same chipset to derive this benefit.

Now you'll truly be able to take your office on the go — without wires, hassles, or holdups.



Lighten your load.

Intel® Centrino™ mobile technology will deliver cutting-edge notebook performance — even in the lightest, easy-to-carry notebook PC designs. Which is why major computer makers have rallied around the opportunity to design light, thin, high-performance notebooks.

Send an instant message to a co-worker. Connect to your office network from an airport or cafe. With integrated wireless LAN (WLAN) capability, Intel Centrino mobile technology allows you to connect from WLAN networks—including thousands of wireless service locations worldwide—without wires, cables, or add-on adapter cards. You can even move from wired to WLAN environments without interrupting your work or rebooting.

Connect from wireless locations around the globe.

More flexibility on the go.

The flashing battery icon is not your friend. Intel Centrino mobile technology is. It's designed to enable extended battery life and keep you going longer. So you can stay productive in an airport, a cafe, or an place where you need to work unplugged.

See Intel® Centrino™ mobile technology wherever life takes you.

- **Get more details now.**
- **Sign up for product updates.**

Wireless connectivity requires additional software, services, or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life, and functionality will vary depending on your specific hardware and software.

Intel® Centrino™ mobile technology represents a leap forward in notebook and communications power. And that means you can connect to the people and things that are most important to you — even when you're on the go.

Run sophisticated programs without system slowdown.

Intel® Centrino™ mobile technology notebooks will be able to seamlessly handle your power-hungry applications wherever you go. So you can watch a DVD on an airplane, edit home movies in your living room, or listen to your entire music library in your backyard.

No more tangled cords trailing through your house. No more cables and special wireless cards cluttering your space. With Intel Centrino mobile technology, you'll get integrated wireless capabilities. So you can connect from locations equipped with wireless LAN (WLAN) access, whether you're at a café, in the airport, or relaxing on your couch.

Take care of the business of life where you want, when you need to.

Stay ahead of the curve with break-through technology.

Throw out your clunky old laptop and replace it with an object of desire Intel Centrino mobile technology will enable lighter and sleeker notebooks. Without sacrificing performance.

Find out how Intel® Centrino™ mobile technology works.

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Wireless connectivity requires additional software, services, or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life, and functionality will vary depending on your specific hardware and software.

The new wireless world will be built on collaboration. That's why Intel is working extensively with the wireless technology industry to develop advanced mobile technology products and offer complete wireless computing solutions. Which means you'll be able to experience true mobility. Without sacrifices.

Intel® Centrino™ Mobile Technology and Wireless LAN: A Perfect Match

The emergence and increasing popularity of wireless LAN (WLAN) technology makes it possible to connect wirelessly from more locations than ever before. With thousands of WLAN hotspots worldwide, you can connect from airports and cafes across the globe. And with more hotspots being added every day, WLAN is making true mobility a reality.

Intel's Integrated Wireless LAN

Intel has teamed with hardware developers and wireless service providers to advance wireless LAN access. In addition, Intel® Centrino™ mobile technology is ready to connect at wireless hotspots around the world, you won't need to study a technical manual or bring along special equipment to connect on the go.

Intel's Investment in WLAN

To ensure that WLAN access continues to grow, Intel plans to invest $150 million over the next two to three years in companies that are advancing wireless technology. By 2006, estimates show that WLAN access will be available at 42,000 sites worldwide — and that more than 30 million notebooks will be equipped with the technology to connect to these WLANs.

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MOBILE TECHNOLOGY

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PARTEIEN

„Bürgerliche Gegenwehr“

Nach dem Treueschwur des Regierungsduos Schröder/Fischer schmieden auch Angela Merkel und Guido Westerwelle ihr Wahlbündnis 2006.

Gleich nach dem Frühstück telefonierte Guido Westerwelle am Donnerstag vergangener Woche mit dem bayerischen Ministerpräsidenten Edmund Stoiber. Kurz darauf bekam der FDP-Vorsitzende auch Angela Merkel, die Chefin der CDU, an die Strippe. Worum es bei den Gesprächen ging, posaunte Westerwelle aufgekratzt in einer eilig anberaumten Pressekonferenz hinaus. „Wir, die Oppositionsparteien, werden eine bürgerliche Gegenwehr zur rot-grünen Regierungspolitik bilden.“

MICHAEL URBAN / DDP

Parteichefs Westerwelle, Merkel: *„Sie sagt, wo es langgeht“*

Am 12. November darf sich der Chefliberale von Gleich zu Gleich mit den Spitzen der Oppositionsparteien beraten. Offiziell soll es darum gehen, wie sich die von CDU und FDP regierten Länder (Baden-Württemberg, Hamburg, Niedersachsen, Sachsen-Anhalt) im Bundesrat zu den Reformgesetzen im Bundesrat stellen.

Westerwelle wittert vor allem eine Chance, von der Führungsdebatte in der eigenen Partei abzulenken. Flugs redet er das Arbeitstreffen zum „Oppositionsgipfel“ hoch und sich selbst zum Ober-Oppositionellen, der schon mal für Stoiber und Merkel mit formuliert: Bei der Reform des Arbeitsmarkts müssten die rot-grünen Pläne noch verschärft werden.

Hinter der rhetorischen Offensive verbirgt sich ein geordneter Rückzug. Der hochtrabend „Äquidistanz-Strategie“ genannte Versuch der Liberalen, sich von der Union zu emanzipieren, ist kläglich gescheitert. Nun suchen die Freidemokraten ihr Heil wieder bei ihrem traditionellen Partner CDU/CSU, mit dem sie seit Gründung der Bundesrepublik unter wechselnden Kanzlern 29 Jahre regiert haben. Die sozial-liberale Ära währte nur 13 Jahre.

Die CDU will von dem Spitzentreffen im November nicht viel Aufhebens machen. Merkel werde, wie es in ihrem Umfeld heißt, nur „in groben Zügen“ eine gemeinsame Verhandlungslinie ausloten. Doch das Treffen sei „symbolisch keine schlechte Sache“, findet Merkels Sprecherin Eva Christiansen. Denn auch die CDU ist auf die FDP angewiesen.

Die nahe liegende Vermutung, dass die Liberalen sich die Hilfsaktion dadurch erkaufen, dass sie einen CDU-Kandidaten bei der Wahl des nächsten Bundespräsidenten unterstützen, weisen alle Beteiligten pflichtgemäß zurück. Aber, räumt CDU-Generalsekretär Laurenz Meyer ein: „Alles hängt mit allem zusammen.“ Und das wisse schließlich auch die FDP.

Die Freidemokraten, so heißt es, hätten durchblicken lassen, sie würden einen Kandidaten Wolfgang Schäuble wohl mitwählen. Einen eigenen Bewerber um das höchste Staatsamt aufzustellen, wie die Parteispitze um Westerwelle eine Zeit lang erwogen hat, dazu fehlt den Liberalen zurzeit das politische Gewicht.

Im Bundesrat sind CDU/CSU und FDP aufeinander angewiesen, wenn sie die Pläne der Regierung blockieren wollen. Die Union hat nicht vergessen, dass es der liberale Parteivize Rainer Brüderle war, der Gerhard Schröders Steuerreform 2000 zum Erfolg verhalf. Und sie weiß, dass ihr demoskopisches Hoch kein Grund zum Übermut sein sollte. „Die guten Umfragewerte dürfen die Union nicht zu dem Trugschluss verleiten, es gäbe eine bürgerliche Mehrheit ohne die FDP“, warnt CSU-Landesgruppenchef Michael Glos. Das gilt nicht nur für die nächste Bundestagswahl, sondern auch für die vorher anstehenden Landtagswahlen in Nordrhein-Westfalen und Schleswig-Holstein.

Geradezu gebettelt hatte Edmund Stoiber als Kanzlerkandidat der Union im vergangenen Jahr, die FDP solle doch eine Koalitionsaussage zu Gunsten der CDU/CSU machen. Westerwelle weigerte sich. Seit Kanzler Schröder und Vize Fischer einander vor einigen Wochen erneut die Treue geschworen haben, ist klar, dass den Liberalen nur die Union als Partner bleibt.

Die „Koalition in der Opposition“, die beide Parteien öffentlich bestreiten, ist längst politischer Alltag. So darf an jeder Besprechung der Union vor einer Sitzung des Vermittlungsausschusses ein FDP-Politiker teilnehmen, in der Regel Fraktionsgeschäftsführer Jörg van Essen. Er sitzt dort keineswegs als stiller Beobachter: Egal ob es um Zuwanderung, Gesundheitsreform oder taktische Fragen geht, van Essen diskutiert gleichberechtigt mit.

Im Vermittlungsausschuss überlassen die Christdemokraten den Liberalen großzügig auch einen Platz in den Arbeitsgruppen, in denen die FDP eigentlich nicht vertreten ist. Das gilt selbst dann, wenn beide Parteien unterschiedliche Auffassungen haben, etwa in der Ausländerpolitik. Nur bei den oft wichtigen Verfahrensfragen muss

Stabile Regierung

„Wird die rot-grüne Bundesregierung bis zum Ende der Legislaturperiode Bestand haben, oder wird sie vorher zerbrechen?“

wird Bestand haben

59 %

wird vorher zerbrechen

33 %

NFO-Infratest-Umfrage für den SPIEGEL vom 21. bis 23. Okt.; Angaben in Prozent; rund 1000 Befragte; an 100 fehlende Prozent: „weiß nicht“

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software and drivers

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Wireless Internet Service Providers and Offers

wireless service providers | wireless venues | content & technology

Intel is working to bring wireless computing to users everywhere. The companies below have verified their hotspots for Intel® Centrino™ mobile technology.† Intel does not control the content of these vendor Web sites.

Special Offers

- T-Mobile HotSpot
- Wayport
- Hotspotzz

Other Collaborators

- AT&T Wireless Wi-Fi Service
- Bell Canada
- Boingo
- Cometa
- Connexion by Boeing
- Fatport
- iPass
- STSN
- TelMex
- Toshiba

Hig

WAYPORT.

airports for 30 d
more.

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Learn more abo
notebook PCs f
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† Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. System performance measured by MobileMark* 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. Get more information.

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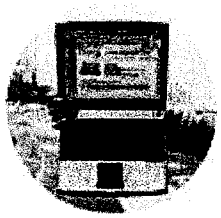

MOBILE TECHNOLOGY

Building the Wireless World

Wireless computing is changing the way people work and live and Intel is taking a leadership role in shaping the wireless world. In support of Intel® Centrino™ mobile technology, Intel is actively working with various industry leaders to help accelerate wireless LAN infrastructure deployment and expand content and service capabilities to deliver a more compelling mobile experience.

Signs of Wireless Life

Whether in the workplace, at cafes, airports, hotels — even public parks — notebook users are enjoying the freedom and flexibility of working wirelessly in a growing number of locations wordwide. In fact, the number of wireless hotspots, locations where you can connect using 802.11 wireless technology, is growing so fast that market research firm IDC estimates there will be 100,000 public hotspots globally by 2005. Find a wireless LAN hotspot near you by searching our hotspot finder tool and looking for the Wireless Identifier signs which can be found at thousands of verified public hotspots around the world.

Hotspots with signs like this are compatible with Intel Centrino mobile technology-based PCs.

Enabling the Wireless Movement

Intel's Wireless Verification Program includes testing of Intel Centrino mobile technology with various access point devices and wireless service providers to determine compatibility. Verification means that the hotspots have been tested by the service providers to work with notebooks built on Intel Centrino mobile technology. For instance, Intel and Cisco are working together to extend Intel Centrino mobile technology's security capabilities to support leading wireless security protocols (LEAP, TKIP, WPA).‡ In fact, through this program 50 wireless internet service providers in 18 countries have already verified thousands of hotspots around the globe.

Learn how these select companies can help you go wireless.

Find a Ho

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additional software, services or external hardware. Availability of public wireless LAN access points limited. System performance measured by MobileMark* 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. Get more information.

‡ Current LEAP support is a PC manufacturer option and may not be offered by all PC manufacturers. WPA and LEAP support available in future Intel PRO/Wireless software update. Contact your PC manufacturer for more details.

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Learn More About Hotspots

What Is a Hotspot?

An increasingly popular way to work and play on the go, hotspots provide wireless LAN service, for free or for a fee, from a wide variety of public meeting areas, including coffee shops and airport lounges. There are currently thousands of hotspots worldwide—and new access points are being added daily.†

Using a Hotspot

To use these hotspots, your notebook must be configured with Wi-Fi-certified technology so you can connect with other Wi-Fi-certified products.* Wi-Fi-enabled notebooks can send and receive data indoors and out—anywhere within the range of a wireless LAN base station. With Intel® Centrino™ mobile technology, you get integrated wireless LAN connectivity and the Wi-Fi certification you need.†

Get Hands-On Experience With Intel® Centrino™ Mobile Technology

Find out just how easy it is to Unwire Your Life when you visit Intel Centrino mobile technology zones at airports and other designated locations across the world. These are special locations where you can test-drive sleek new Intel Centrino mobile technology-based notebook PCs—without wires. Come visit an Intel Centrino mobile technology zone and see Intel Centrino mobile technology in action. It will change how you think about mobile computing.

Find out about upcoming Intel Centrino mobile technology zones.

How to Unwire

1. Purchase a wireless LAN-capable notebook. Intel Centrino mobile technology is built for wireless LANs and doesn't require additional add-on cards or equipment.† You can also set up other notebooks to be wireless using an adapter card and accompanying software.

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Use our hotspo hotspots that h service provide Centrino™ mot

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Announcing Intel® Centrino™ Mobile Technology

Inspire. Unwire. Intel® Centrino™ mobile technology is coming soon — but you can get more information now.

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- See networking & communications and wireless components.

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- Explore resources for retail sales people.

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- Intel® Centrino™ Mobile Technology
  Intel announces brand name for the next generation mobile technology
- Are You Ready for What's Next?
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Smart Displays, powered by Intel® XScale™ technology, extend the PC to every room in the house.

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Delivering significant performance for your home and office processing needs.

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You may wonder what's behind all Intel's promises. Promises of power and performance. Promises that Intel really can make a difference in your business and your life. Find out about Intel's message of Yes.

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Intel® Centrino™ mobile technology. Coming soon.

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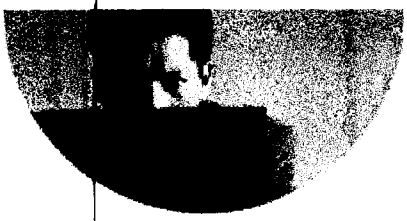
Your workforce wants greater mobility. You want lower Total Cost of Ownership (TCO) and longer platform stability. And now, one new mobile technology is about to deliver the true mobility your users crave — along with the Intel-tested and tuned platform reliability and compatibility you expect.

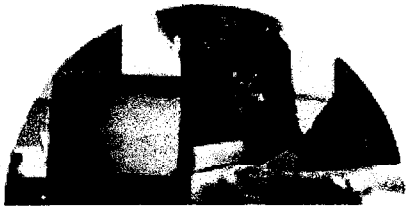


Lower your TCO.

With a host of new technology benefits including integrated wireless, connectivity at public and private WLAN hot spots, and increased platform stability, Intel® Centrino™ mobile technology can make client management easier, drive down IT costs, and reduce user downtime.

The Intel Centrino mobile technology brand is your assurance that you have technology that enables extended battery life, high performance, and integrated wireless LAN (WLAN) capability — all in the sleekest notebook designs available. So users will be able to stay connected and productive on the go.

Help your users be more productive than ever.



Get longer platform stability.

Designed to provide up to 18 months of stability, Intel Centrino mobile technology will reduce qualification costs, enable management of a broad range of PCs with the same software image, and free up IT to focus on other business-critical tasks.

See Intel® Centrino™ mobile technology on the road.

- Get more details now.
- Sign up for product updates.

Wireless connectivity requires additional software, services, or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life, and functionality will vary depending on your specific hardware and software.

Deploying early in the Intel Centrino mobile technology lifecycle is the best way to ensure long platform stability. A full 18 months of platform stability is achievable if you purchase and deploy the earliest commercially available Intel Centrino mobile technology platform-based systems.

Multiple chipsets are available and care must be taken to select systems that use the same chipset to derive this benefit.

Intel® Centrino™ mobile technology. Coming soon.

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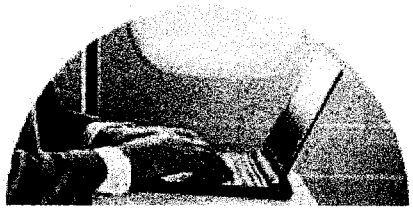
Now you'll truly be able to take your office on the go — without wires, hassles, or holdups.

Lighten your load.

Intel® Centrino™ mobile technology will deliver cutting-edge notebook performance — even in the lightest, easy-to-carry notebook PC designs. Which is why major computer makers have rallied around the opportunity to design light, thin, high-performance notebooks.

Send an instant message to a co-worker. Connect to your office network from an airport or cafe. With integrated wireless LAN (WLAN) capability, Intel Centrino mobile technology allows you to connect from WLAN networks—including thousands of wireless service locations worldwide—without wires, cables, or add-on adapter cards. You can even move from wired to WLAN environments without interrupting your work or rebooting.

Connect from wireless locations around the globe.



More flexibility on the go.

The flashing battery icon is not your friend. Intel Centrino mobile technology is. It's designed to enable extended battery life and keep you going longer. So you can stay productive in an airport, a cafe, or any place where you need to work unplugged.

See Intel® Centrino™ mobile technology wherever life takes you.

- Get more details now.
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Intel® Centrino™ mobile technology. Coming soon.

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Intel® Centrino™ mobile technology represents a leap forward in notebook and communications power. And that means you can connect to the people and things that are most important to you — even when you're on the go.

Run sophisticated programs without system slowdown.

Intel® Centrino™ mobile technology notebooks will be able to seamlessly handle your power-hungry applications wherever you go. So you can watch a DVD on an airplane, edit home movies in your living room, or listen to your entire music library in your backyard.

No more tangled cords trailing through your house. No more cables and special wireless cards cluttering your space. With Intel Centrino mobile technology, you'll get integrated wireless capabilities. So you can connect from locations equipped with wireless LAN (WLAN) access, whether you're at a café, in the airport, or relaxing on your couch.

Take care of the business of life where you want, when you need to.

Stay ahead of the curve with break-through technology.

Throw out your clunky old laptop and replace it with an object of desire. Intel Centrino mobile technology will enable lighter and sleeker notebooks. Without sacrificing performance.

Find out how Intel® Centrino™ mobile technology works.

- Get more details now.
- Sign up for product updates.

Wireless connectivity requires additional software, services, or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life, and functionality will vary depending on your specific hardware and software.

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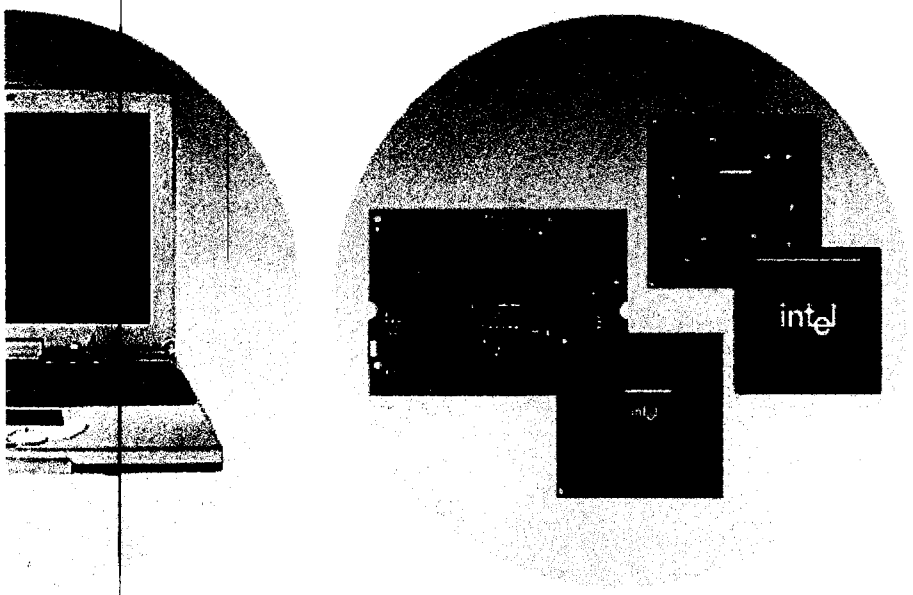
in your business | on the road | wherever life takes you | how it works | Intel and wireless

Designed from the ground up for mobility, Intel® Centrino™ mobile technology brings together key Intel silicon components, all integrated, designed and validated by Intel to work together.



Mobile Technology

This new innovative technology delivers cutting-edge system performance and low power enhancements to enable extended battery life in notebook PCs, combined with integrated wireless connectivity and standards-based security support. With Intel® Centrino™ mobile technology, three components work together to deliver a breakthrough in freedom and connectivity. These components include:

- **Intel® Pentium® M processor**
- **Intel® 855 chipset family**
- **Intel® PRO/Wireless network connection**

See how Intel is collaborating with the wireless technology industry.

- Get more details now.
- Sign up for product updates.

Wireless connectivity requires additional software, services, or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life, and functionality will vary depending on your specific hardware and software.

Intel® Centrino™ mobile technology. Coming soon.

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The new wireless world will be built on collaboration. That's why Intel is working extensively with the wireless technology industry to develop advanced mobile technology products and offer complete wireless computing solutions. Which means you'll be able to experience true mobility. Without sacrifices.

Intel® Centrino™ Mobile Technology and Wireless LAN: A Perfect Match

The emergence and increasing popularity of wireless LAN (WLAN) technology makes it possible to connect wirelessly from more locations than ever before. With thousands of WLAN "hot spots" worldwide, you can connect from airports and cafes across the globe. And with more hot spots being added every day, WLAN is making true mobility a reality.

Intel's Integrated Wireless LAN

Intel has teamed with hardware developers and wireless service providers to advance wireless LAN access. In addition, Intel® Centrino™ mobile technology is ready to connect at wireless hot spots around the world, you won't need to study a technical manual or bring along special equipment to connect on the go.

Intel's Investment in WLAN

To ensure that WLAN access continues to grow, Intel plans to invest $150 million over the next two to three years in companies that are advancing wireless technology. By 2006, estimates show that WLAN access will be available at 42,000 sites worldwide — and that more than 30 million notebooks will be equipped with the technology to connect to these WLANs.

- Get more details now.
- Sign up for product updates.

Wireless connectivity requires additional software, services, or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life, and functionality will vary depending on your specific hardware and software.

Circuit News

New brand combines multiple technologies

Intel reveals name of new mobile technology

Posted January 8, 2003; WW02
From *Intel Press Relations*

Intel has announced that Intel Centrino™ mobile technology is the new brand name for its upcoming wireless mobile computing technology. The new brand signifies Intel's best technology for notebook computers, based on a new mobile processor microarchitecture and a wireless capability as well as features designed to enable extended battery life, thinner and lighter form factors, and outstanding mobile performance.

The technologies represented by the Intel Centrino brand will include a microprocessor (formerly code-named "Banias"), related chipsets, and 802.11 (Wi-Fi) wireless networking capability. These components are designed, optimized, and validated by Intel to maximize the wireless mobile computing experience. The Intel Centrino brand marks the first time Intel has branded a combination of technologies under one name.

Intel Centrino mobile technology is planned for introduction in the first half of this year.

"The Intel Centrino brand signifies a new generation of mobile PCs that will change where and how people compute," said Pam Pollace, Intel vice president and director, Corporate Marketing Group. "Whether at work, at home, at an airport, or a café, Intel Centrino mobile technology will bring the freedom and flexibility of being unwired."

The new Intel Centrino mobile technology brand name will be represented by a new logo carrying the famous Intel Inside® mark. The logo, featuring a striking magenta color and a completely new shape, suggests flight, mobility, and forward movement.

* * *

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Intel Press Release

Intel Announces Centrino™ Mobile Technology Brand Name

print
email

SANTA CLARA, Calif., Jan. 8, 2003 - Intel Corporation said today Centrino™ mobile technology is the new brand name for its upcoming wireless mobile computing technology. The new brand signifies Intel's best technology for notebook computers, based on a new mobile processor microarchitecture and wireless capability as well as features designed to enable extended battery life, thinner and lighter form factors, and outstanding mobile performance.

The technologies represented by the Centrino brand will include a microprocessor (formerly code-named "Banias"), related chipsets and 802.11 (Wi-Fi) wireless networking capability. These components are designed, optimized and validated by Intel to maximize the wireless mobile computing experience. The Centrino brand marks the first time Intel has branded a combination of technologies under one name.

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The new Centrino mobile technology brand name will be represented by a new logo carrying the famous Intel Inside® mark. The logo, featuring a striking magenta color and and a completely new shape, suggests flight, mobility, and forward movement.

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

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The new Centrino mobile technology brand name will be represented by a new logo carrying the famous Intel Inside® mark. The logo, featuring a striking magenta color and a completely new shape, suggests flight, mobility, and forward movement.

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Egal wo Sie klare Gedanken fassen,

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MOBILE TECHNOLOGY

In der richtigen Umgebung fällt vieles leichter. Warum also auf Wände starren? Machen Sie die Welt zu Ihrem Büro – mit den Wireless-Lösungen von Toshiba. Die Tecra M1 verfügt über die neueste Intel® Centrino™ Mobiltechnologie mit einem Intel® Pentium® M Prozessor bis zu 1,6 GHz, Intel® PRO/Wireless 2100 Netzwerkunterstützung und Intel® 855PM Chipsatz. Dank einer Akkulaufzeit von bis zu 6,2 Stunden und dem robusten Magnesium-Druckgussgehäuse können Sie überall dort arbeiten, wo Sie sich wohl fühlen.

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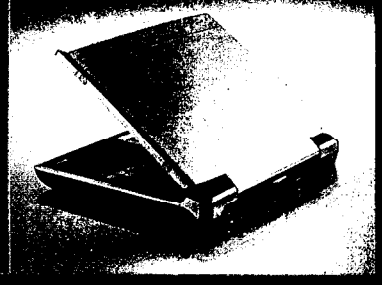

Toshiba empfiehlt Microsoft® Windows® XP Professional für mobile Computer.

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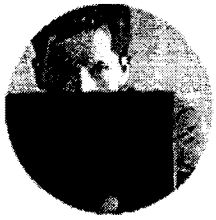

A New Notebook Produc Designed Specifically for Mobile World

Announcing Intel® Centrino™ mobile technology. Intel is expanding its history of innovation with new notebook capabilities designed specifically for the mobile world. Soon, you'll be able to work, play and connect without wires. And choose from a whole new generation of thin and light notebooks that are designed to enable extended battery life.

This new innovative technology delivers cutting-edge system performance and low-power enhancements to enable extended battery life in notebook PCs, combined with integrated wireless connectivity and standards-based security support.

With Intel Centrino mobile technology, three components work together to deliver a breakthrough in freedom and capability—so you can work, learn and play on the go. These components include:

- Intel® Pentium® M Processor
- Intel® 855 chipset family
- Intel® PRO/Wireless network connection

The Intel Centrino mobile technology brand is your assurance that you're using innovative and reliable technology. With Intel Centrino mobile technology, you won't need to study a technical manual or bring along special equipment to connect on the go. That's because Intel is working with hardware and software developers, and wireless services providers, to deliver a reliable and integrated wireless mobile computing experience.

Work, Play and Connect Without Wires

With Intel® Centrino™ mobile technology, you'll be able to connect from WiFi-certified wireless LAN networks and "hot spots" all over the world. Without hunting for a phone jack or plugging in a special card. Find out more.

Get a Notebook That Enables Extended Battery Life

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- Thin and Ligl

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Intel Centrino mobile technology enables extended battery life and keeps you going—so you'll be able to unplug without being disconnected. Find out more.

Experience Cutting-Edge Notebook Performance

Get the advanced mobile computer power you need when you're away from your desk. Intel Centrino mobile technology based notebooks are engineered to run the most sophisticated multimedia programs. Find out more.

Use a Sleeker, Lighter Notebook

Intel Centrino mobile technology is uniquely designed for mobility. And that means you'll be able to choose from a whole new generation of lighter, sleeker notebooks. Find out more.

Wireless connectivity requires additional software, services or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life and functionality will vary depending on your specific hardware and software.

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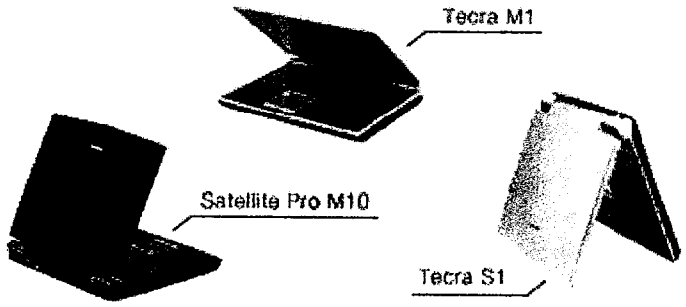

Vi introducerar

Nya bärbara datorer, baserade på Intel® Centrino™ Mobile Technology, som ger användaren avancerad prestanda och fler alternativ för mobil datoranvändning.

Välj en produkt

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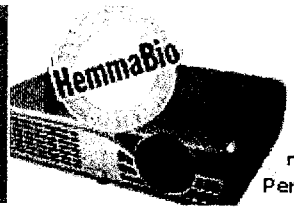
DVD SD-520

Det ultimata valet för hemmabio entusiasten



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IT Week

January 27, 2003

SECTION: 28

LENGTH: 687 words

HEADLINE: CLIENT WEEK - MOBILE TECHNOLOGY ANALYSIS - MOBILE CHIP INTEGRATES WLAN.

BYLINE: Daniel Robinson.

BODY:

Intel this month unveiled its latest brand name, Centrino, which will cover a family of technologies including a forthcoming laptop processor and associated motherboard chipsets and wireless networking capabilities.

However, the Centrino component, which is expected to arrive during the first half of this year, could end up being a solution in search of a problem if the current trend towards desktop-replacement notebooks continues.

The Centrino brand includes the processor formerly known as Banias - a chip designed from scratch for the laptop market. This processor, which will be known as the Pentium-M, has been designed to keep power consumption down, so many of the parts of the processor, including the Level 2 cache, are expected to be power-aware so they can be partly or wholly powered down when not in use.

The Pentium-M element of Centrino was created partly to counter the perceived threat posed by Transmeta, with its rival low-power Crusoe processors that can run Intel-based software. But Transmeta has so far failed to make much of an impact in the European or US markets. In fact, recent market research indicates that buyers are more interested in desktop-replacement notebooks rather than lightweight systems that can be used on the move.

Desktop replacement laptops are designed to offer all the capabilities of a standard desktop PC, but in a format that can be closed up and carried home or to customer locations by staff. These high-end portables have built-in networking capabilities, high-resolution screens, large hard-disk capacities and DVD-ROM drives, and many can be fitted with as much memory as a typical desktop system.

A recent phenomenon is the popularity of laptops featuring the full-blown desktop version of the Pentium 4 processor, instead of Intel's mobile version of the component, with many customers citing the availability of more processing power as the reason for preferring such models.

This trend could affect Intel's plans for Centrino. Intel's Centrino Pentium-M is expected to be introduced somewhere around the 1.4GHz to 1.6GHz mark, but current Mobile Pentium 4 chips are available above 2GHz, and the desktop Pentium 4 is now shipping at 3.06GHz.

Though Intel has hinted that Centrino will outperform current Mobile Pentium 4 chips, the danger is that it could be perceived as a technology aimed purely at ultraportables, where size and battery life are more important than performance.

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January 27, 2003, Monday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS AND TECHNOLOGY EDITORS

LENGTH: 639 words

HEADLINE: Wayport and Intel to Promote Wi-Fi Wireless Connectivity in Hotels And Airports Nationwide

DATELINE: AUSTIN, Texas, Jan. 27

BODY:

Wayport, the leading provider of wireless and wired high-speed Internet access in 475 hotels and 10 airports, today announced it is working with Intel Corporation to promote Wayport's service in hotels and airports in conjunction with Intel's forthcoming Centrino(TM) mobile technology for notebook PCs.

Intel's new Centrino mobile technology featuring built-in Wi-Fi capability will be implemented in PC manufacturers' notebook computers. Wayport and Intel are working together, through nationwide marketing and advertising, to drive awareness of Wayport's Wi-Fi (802.11b) hotspots-areas where notebook users can connect to the Internet and corporate networks wirelessly.

"The work between Intel and Wayport demonstrates a deep commitment to the industry to drive awareness and adoption of Wi-Fi," said Dan Lowden, vice president of marketing for Wayport. "Intel's Centrino mobile technology for notebook computers and Wayport's nationwide Wi-Fi service in hotels and airports, enable today's mobile user to take advantage of high-speed Internet access when they travel, keeping them more productive when away from the office."

As awareness and deployment of Wayport's service grows and usage of notebooks featuring Intel Centrino mobile technology increases, current and future Wayport-enabled locations will realize a boost in occupancy, and in turn, incremental revenues giving them a distinct competitive advantage.

"Wireless connectivity will change the way you use your notebook PC," said Don MacDonald, marketing director, Intel Mobile Platforms Group. "With the forthcoming Intel Centrino mobile technology, wireless capability becomes a standard feature in notebooks so, whether you are at work, at home, in the office or on the road, people will be able to use their notebooks in a whole new way."

To enable the highest quality user connection experience, Wayport and Intel are conducting extensive engineering testing of the Intel Centrino mobile technology on Wayport's network.

The Intel Centrino mobile technology brand represents Intel's best technology for mobile computing and is designed to deliver an unwired computing experience while enabling extended battery life, outstanding mobile performance and thinner and lighter form factors.

About Wayport, Inc.

Wayport provides high-speed Wi-Fi (802.11b) wireless and wired Internet access in more than 475 major hotels, including such brands as Four Seasons, Loews, Wyndham, Hilton, Marriott, Sheraton, Doubletree and Embassy Suites, and Wi-Fi wireless Internet access in five major airports: Dallas-Fort Worth, Seattle-Tacoma, San Jose, Austin-Bergstrom and Oakland. At airports, travelers also can take advantage of Wayport's 15 Laptop Lane airport business centers, which feature private offices with high-speed Internet access and other business services, as well as mobile devices and accessories for sale. To learn more, please visit www.wayport.net .

Wayport and the Wayport logo are trademarks of Wayport, Inc. All other names are property of their respective owners.

Important Information: Wireless connectivity requires additional software, services or external hardware that may need to be purchased separately. Availability of public wireless access points is limited. System performance, battery life and functionality will vary depending on your specific hardware and software.

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January 27, 2003

SECTION: Pg.28

LENGTH: 687 words

HEADLINE: Client Week - Mobile Technology Analysis - Mobile chip integrates; Desktop-replacement laptops are popular, but is there a gap in the

BYLINE: Daniel Robinson.

BODY:

Intel this month unveiled its latest brand name, Centrino, which will cover a family of technologies including a forthcoming laptop processor and associated motherboard chipsets and wireless networking capabilities.

However, the Centrino component, which is expected to arrive during the first half of this year, could end up being a solution in search of a problem if the current trend towards desktop-replacement notebooks continues.

The Centrino brand includes the processor formerly known as Banias - a chip designed from scratch for the laptop market. This processor, which will be known as the Pentium-M, has been designed to keep power consumption down, so many of the parts of the processor, including the Level 2 cache, are expected to be power-aware so they can be partly or wholly powered down when not in use.

The Pentium-M element of Centrino was created partly to counter the perceived threat posed by Transmeta, with its rival low-power Crusoe processors that can run Intel-based software. But Transmeta has so far failed to make much of an impact in the European or US markets. In fact, recent market research indicates that buyers are more interested in desktop-replacement notebooks rather than lightweight systems that can be used on the move.

Desktop replacement laptops are designed to offer all the capabilities of a standard desktop PC, but in a format that can be closed up and carried home or to customer locations by staff. These high-end portables have built-in networking capabilities, high-resolution screens, large hard-disk capacities and DVD-ROM drives, and many can be fitted with as much memory as a typical desktop system.

A recent phenomenon is the popularity of laptops featuring the full-blown desktop version of the Pentium 4 processor, instead of Intel's mobile version of the component, with many customers citing the availability of more processing power as the reason for preferring such models.

This trend could affect Intel's plans for Centrino. Intel's Centrino Pentium-M is expected to be introduced somewhere around the 1.4GHz to 1.6GHz mark, but current Mobile Pentium 4 chips are available above 2GHz, and the desktop Pentium 4 is now shipping at 3.06GHz.

Though Intel has hinted that Centrino will outperform current Mobile Pentium 4 chips, the danger is that it could be perceived as a technology aimed purely at ultraportables, where size and battery life are more important than performance.

However, a key feature of Centrino-based laptops will be a tighter integration with wireless LAN (WLAN) technology, which is likely to attract interest from corporates. "Our aim is to bring WLAN capability to the vast majority of laptops," said Intel UK spokesman Mathias Raeck.

Given Intel's history of supplying optimised drivers and management tools for wired LANs, it also seems likely that the firm will offer some software to simplify client connection to WLANs and to help IT managers with administrative procedures. Raeck indicated that some tools like this would be available, but declined to give any specific details.

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The Age (Melbourne)

January 23, 2003 Thursday

SECTION: Green Guide; Livewire; Pg. 1

LENGTH: 1443 words

HEADLINE: Year Of Living Seamlessly

BYLINE: Rod Easdown Charles Wright, Garry Barker

BODY:

Improved high-definition TV, wired homes, and huge computer, video and music advances. Livewire's experts scan the horizon for technology in 2003.

Sound & Vision

If I had to summarise the coming year in a word, I'd go for integration. Your digital camera will talk to your DVD player, your MP3 music will migrate from the computer's horrible little speakers to your audio system, and your mobile phone will talk to practically everything. There won't be lots of cables to snag the vacuum cleaner; it will be as simple as lifting the memory card out of one device and plugging it into another.

Yep, you'll see DVD players and televisions with memory card slots so you can show your photographs on the television or route your music files through the audio circuits. Using the television as a huge computer monitor will become a viable proposition. At the same time, the computer will control more and more of your home's electronics.

Increasingly, you'll see hard drives bobbing up in VCRs (they'll be called PVRs, or personal video recorders) which will allow you to watch the start of a program while it's still recording to the end.

Hard drive will also turn up in CD recorders. A 10GB hard drive will store up to 200 discs, meaning you'll be able to have your entire CD collection on call electronically, for instant retrieval.

Even if you can't see the point of digital television, high-definition screens will become increasingly attractive because you'll be offered the option of buying high-definition DVD movies that, instead of having bonus features, will present the movie in high-definition vision. And you'll start hearing about Blu-ray DVD recorders that, using a finer laser beam and special discs, can store 13 hours of movies. They'll be sufficiently expensive to and pose no threat to DVD.

Your screen options will increase as computer-style LCD panels get cheaper and better. They'll become most appealing as monitors for the kitchen or bedroom and, as you renovate or build, laying cable for a whole-of-house home entertainment system will become not just fashionable, but affordable - think $300 or so per room. The additional equipment you need is now inexpensive enough to make systems controlled from any room, that route to any room, entirely affordable.

Big things will happen in cars as people discover it's easy to install a rear screen to provide kids with movies, video and games with sound piped through cordless headphones, while their parents listen to music through the stereo. The problem will be getting the kids out.

As for technology that's already here, DVD recorders will become more plentiful and will drop below $1000. Plasma screens will also keep dropping, possibly below $5000 by the end of the year. DVD players, flat-screen televisions and home cinema systems are unlikely to get much cheaper, but you will see more value for the same price as the year rolls by, with more and better features and excellent bonuses, such as free movies and benefits.

A video iPod, with a colour screen derived from the Ericsson T68i mobile phone, could be among future products. Fitted with Bluetooth, it could become a sort of storage hub for images, music and other data transmitted over the mobile-phone network.

Apple could be contemplating a tablet-style computer. Perhaps significantly, Apple owns Inkwell, a sophisticated handwriting-recognition software that traces its origins back to the now mothballed Newton handheld computer.

One might also forecast the appearance of much faster Power Macs, the big machines that are the favourites of the graphics and multimedia industry. Or Apple might move back into the handheld market to challenge Palm, Handspring, Blackberry and iPaq. Or maybe they won't. Only the inner team really knows and they are so silent on their intentions that they make wooden Indians look like back-fence gossips.

At Macworld San Francisco in January, they produced a brace of fascinating products and, on the face of it, Apple seemed to be challenging Microsoft by producing the new Safari Internet browser and the Keynote presentation package that puts PowerPoint well into the shade. More than 500,000 copies of Safari were downloaded free in the first two days after its announcement.

It is entirely possible, indeed expectable, that 2003 will see major software innovations by Apple as it drives its "Digital Lifestyle" campaign - mobile applications, Internet applications, things probably of brilliant simplicity, along the lines of the now integrated iLife package (iPhoto, iMovie, iTunes and iDVD) that Jobs announced at Macworld San Francisco. Movie making - professional, keen hobbyist and blundering amateur - is very high on the Apple agenda. So is music, and all will take advantage of the steadily developing Internet. -- Garry Barker

LOAD-DATE: January 22, 2003

Other developments in 2003 are likely to be on a minor scale but I liked two low-key demonstrations this month: Microsoft's OneNote and Apple's Keynote.

The OneNote application, covered briefly on the last cover of IT Week, promises to make note-taking a digital task. Keynote is an intriguing alternative to PowerPoint that will ensure that the smartest presentations this year are on Macs. Add the highly desirable 17in-screen PowerBook and Apple could find more friends among image-conscious users who clock up lots of air miles.

Of the other technologies, 3G may surprise sceptics by finding a back door to businesses through consumer sales. By focusing on prized content - Premiership goal videos, for example - Hutchison's 3 service looks promising.

But 64bit computing is still a year off at least for most of us, and forget the computer watches and other gewgaws demonstrated at the Consumer Electronics Show in Las Vegas this month. Only Bill Gates could think a digital watch of such immense proportions is acceptable social attire.

- martin_veitch£vnu.co.uk.

JOURNAL-CODE: WVNU

LOAD-DATE: January 17, 2003

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LOAD-DATE: January 17, 2003

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January 14, 2003, Tuesday

DISTRIBUTION: Business Editors/High-Tech Writers

LENGTH: 4635 words

HEADLINE: Intel Reports Fourth-Quarter and Annual Results; Fourth-Quarter Earnings Per Share $0.16

DATELINE: SANTA CLARA, Calif., Jan. 14, 2003

BODY:

Intel Corporation today announced fourth-quarter revenue of $7.2 billion, up 10 percent sequentially and up 3 percent year-over-year.

Fourth-quarter net income was $1.0 billion, up 53 percent sequentially and up 108 percent year-over-year. Earnings per share were $0.16, up 60 percent sequentially and up 129 percent from $0.07 in the fourth quarter of 2001.

Fourth-quarter net income excluding acquisition-related costs(1) of approximately $106 million was $1.1 billion, up 37 percent sequentially and up 6 percent year-over-year. Earnings excluding acquisition-related costs were $0.16 per share, up 45 percent sequentially and up 7 percent from $0.15 in the fourth quarter of 2001.

"2002 ended with a strong quarter," said Craig R. Barrett, Intel chief executive officer. "By successfully executing our strategies, it appears we have increased our market segment share in microprocessors, chipsets, graphics, motherboards, flash, PDA microprocessors and LAN-on-motherboard gigabit Ethernet connections.

"In 2003, we will continue to deploy advanced technology, further our silicon leadership, deliver industry-leading products, and improve our competitiveness and cost structure so we can continue to outperform now and when the economic picture improves."

The fourth-quarter 2002 results included a tax benefit of approximately $75 million related to small divestitures that closed during the quarter. The fourth-quarter 2001 results reflected charges for the amortization of goodwill, which is no longer amortized under generally accepted accounting principles (GAAP) with the adoption of FASB rule 142 at the beginning of 2002.

Intel will discontinue reporting earnings excluding acquisition-related costs beginning with its first-quarter 2003 earnings announcement. The goodwill provisions of FASB rule 142 have resulted in a substantial reduction in the difference between the company's earnings on a GAAP basis and its earnings excluding acquisition-related costs. Intel reported earnings excluding acquisition-related costs during 2002 to provide supplemental information on performance and a consistent basis for financial comparisons.

Full-Year Results

Revenue for 2002 was $26.8 billion, up 1 percent from $26.5 billion in 2001. Net income was $3.1 billion, up 141 percent from $1.3 billion in 2001. Earnings per share were $0.46, up 142 percent from$0.19 in 2001. The 2001 results reflect charges for the amortization of goodwill.

Net income for 2002 excluding acquisition-related costs was $3.5 billion, down 4 percent from $3.6 billion in 2001. Earnings excluding acquisition-related costs were $0.51 per share, down 2 percent from$0.52 in 2001.

BUSINESS OUTLOOK

acceptance of Intel's new products. Future revenue is also dependent on continuing technological advancement, including developing and implementing new processes and strategic products, as well as sustaining and growing new businesses and integrating and operating any acquired businesses. The gross margin percentage could also be affected by the execution of the manufacturing ramp, excess manufacturing capacity, excess or obsolete inventory, and variations in inventory valuation, as well as adverse effects associated with product errata (deviations from published specifications). Results could also be affected by litigation, such as that described in Intel's SEC reports, as well as other risk factors listed in Intel's SEC reports, including the report on Form 10-Q for the quarter ended Sept. 28, 2002.

Status of Business Outlook and Mid-Quarter Business Update

During the quarter, Intel's corporate representatives may reiterate the Business Outlook during private meetings with investors, investment analysts, the media and others. Intel intends to publish a Mid-Quarter Business Update on March 6. From the close of business on Feb. 28 until publication of the Update, Intel will observe a "Quiet Period" during which the Outlook in this Release and the company's filings with the SEC on Forms 10-K and 10-Q should be considered to be historical, speaking as of prior to the Quiet Period only and not subject to update by the company. For more information about the Outlook, Update and related Quiet Periods, please refer to the Outlook section of the Intel Investor Relations Web site at www.intc.com.

FOURTH-QUARTER REVIEW AND RECENT HIGHLIGHTS

Financial Review

-- The average selling price (ASP) of Intel Architecture microprocessors used in PCs and servers was higher. The ASP including microprocessors used in embedded applications and the Microsoft* XBox was approximately flat.

-- The gross margin percentage was 51.6 percent, higher than the company's updated expectation. The gross margin percentage was higher than 49 percent in the third quarter of 2002, primarily due to higher revenue.

-- Amortization of acquisition-related intangibles and costs for the fourth quarter included a $15 million write-off of acquired intangibles related to the previous acquisition of Xircom Inc.

-- The tax rate was approximately 27.4 percent in the fourth quarter excluding the impact of acquisition-related costs and excluding the $75 million tax benefit related to divestitures of prior acquisitions.

-- Gains or losses on equity investments and interest and other resulted in a net loss of $117 million, greater than the previous expectation of a net loss of $90 million. The net loss on equity investments was $171 million, including the impact of impairment charges of approximately $177 million.

Product Shipment Trends (Sequential)

-- Intel Architecture microprocessor unit shipments set a record. -- Chipset unit shipments were higher. -- Motherboard unit shipments set a record. -- Flash memory unit shipments were higher. -- Ethernet connectivity product unit shipments were higher.

Intel Architecture Business

Intel increased its desktop performance leadership with the introduction of the Intel(R) Pentium(R) 4 processor at 3.06 GHz with Hyper-Threading (HT) Technology. HT Technology allows a variety of multithreaded operating systems and application software to run as though the PC has two processors, boosting performance by as much as 25 percent. The company also extended its leadership in the value segment during the quarter with the introduction of Intel(R) Celeron(R) processors at 2.2 GHz and 2.1 GHz.

In mobile, Intel began revenue shipments of its next-generation mobile processor, previously known as Banias. The company announced the Intel(R) Centrino(TM) brand name, which signifies the company's best technology for notebook computers. Intel Centrino mobile technology is comprised of the next-generation processor along with integrated wireless networking capability, chipsets and features that enable extended battery life, thinner and lighter notebook

Intel will hold a public webcast at 2:30 p.m. PST today on the Web site at www.intc.com. A replay of the webcast will be available until Jan. 21 on the Web site and by phone at (719) 457-0820, pass code 735793.

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

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*Other names and brands may be claimed as the property of others.

(1) Acquisition-related costs consist of one-time write-offs of purchased in-process R&D and amortization of acquisition-related intangibles and costs, which includes write-offs of acquisition-related intangibles. Earnings excluding acquisition-related costs in 2002 also exclude the $75 million tax benefit related to divestitures of prior acquisitions recognized in the fourth quarter of 2002. Intel's definition of earnings excluding acquisition-related costs is not necessarily comparable with how other companies might present this information. Earnings excluding acquisition-related costs are not in accordance with GAAP because GAAP earnings include these costs.

(2) Sources: Transaction Processing Performance Council, SAP, Standard Performance Evaluation Corporation.

(3) Sources: Top500 list, Nov. 2002, Intel.

INTEL CORPORATION
CONSOLIDATED SUMMARY INCOME STATEMENT DATA
(In millions, except per share amounts)

	Three Months Ended		Twelve Months Ended	
	Dec. 28, 2002	Dec. 29, 2001	Dec. 28, 2002	Dec. 29, 2001
NET REVENUE	$7,160	$6,983	$26,764	$26,539
Cost of sales	3,464	3,402	13,446	13,487
Research and development	1,022	952	4,034	3,796
Marketing, general and administrative	1,104	1,071	4,334	4,464
Amortization of goodwill	-	405	-	1,710
Amortization and impairment of acquisition-related intangibles and costs	106	145	548	628
Purchased in-process research and development	-	-	20	198
Operating costs and expenses	5,696	5,975	22,382	24,283
OPERATING INCOME	1,464	1,008	4,382	2,256
Losses on equity securities, net	(171)	(287)	(372)	(466)
Interest and other, net	54	73	194	393
INCOME BEFORE TAXES	1,347	794	4,204	2,183
Income taxes	298	290	1,087	892
NET INCOME	$1,049	$ 504	$3,117	$1,291
BASIC EARNINGS PER SHARE	$0.16	$0.08	$ 0.47	$ 0.19

TOTAL ASSETS	$44,224	$43,636	$44,395
CURRENT LIABILITIES			
Short-term debt	$ 436	$ 317	$ 409
Accounts payable and accrued liabilities	4,527	4,492	4,755
Deferred income on shipments to distributors	475	512	418
Income taxes payable	1,157	960	988
Total current liabilities	6,595	6,281	6,570
LONG-TERM DEBT	929	1,000	1,050
DEFERRED TAX LIABILITIES	1,232	1,048	945
STOCKHOLDERS' EQUITY	35,468	35,307	35,830
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$44,224	$43,636	$44,395

INTEL CORPORATION
SUPPLEMENTAL FINANCIAL AND OTHER INFORMATION
(In millions)

	Q4 2002	Q3 2002	Q4 2001
GEOGRAPHIC REVENUE:			
Americas	30%	32%	33%
Asia-Pacific	38%	38%	35%
Europe	25%	23%	25%
Japan	7%	7%	7%
CASH INVESTMENTS:			
Cash and short-term investments	$10,786	$9,615	$10,326
Trading assets - fixed income (1)	$1,460	$1,313	$836
Total cash investments	$12,246	$10,928	$11,162
INTEL CAPITAL PORTFOLIO:			
Trading assets - equity securities (2)	$98	$89	$74
Marketable strategic equity securities	$56	$56	$155
Other strategic investments	$947	$1,169	$1,499
Total Intel capital portfolio	$1,101	$1,314	$1,728
TRADING ASSETS:			
Trading assets - equity securities offsetting deferred compensation (3)	$243	$225	$314
Total trading assets - sum of (1)+(2)+(3)	$1,801	$1,627	$1,224
SELECTED CASH FLOW INFORMATION:			
Depreciation	$1,244	$1,136	$1,093
Amortization of goodwill	$0	$0	$405
Amortization and impairment of acquisition-related intangibles & costs	$106	$102	$145
Purchased in-process research & development	$0	$6	$0
Capital spending	($1,203)	($955)	($1,136)
Stock repurchase program	($1,006)	($1,001)	($1,003)
Proceeds from sales of shares to			

The Intel Architecture operating segment's products include microprocessors, chipsets and motherboards. The Wireless Communications and Computing Group's products include flash memory, application processors and cellular baseband chipsets for cellular handsets and handheld devices. The Intel Communications Group's products include Ethernet connectivity products, network processing components, embedded control chips and optical products.

The "all other" category includes acquisition-related costs, including amortization of acquisition-related intangibles and in-process research and development. Acquisition-related costs also include charges for impairment of goodwill and acquisition-related intangibles, including $127 million for impairments of identified intangibles recorded in the second and fourth quarters of 2002, primarily related to the previous acquisition of Xircom. "All other" includes the results of operations of seed businesses that support the company's initiatives and the results of the Web hosting business, including the charge of $106 million recorded in the second quarter of 2002 related to winding down this business. "All other" also includes certain corporate-level operating expenses, including a portion of profit-dependent bonus and other expenses that are not allocated to the operating segments. For 2001, "all other" also included goodwill amortization; however, goodwill is no longer amortized beginning in 2002.

CONTACT: Intel
Alex Lenke, 408/765-1773 (Investor Relations)
or
Tom Beermann, 408/765-6855 (Press Relations)

URL: http://www.businesswire.com

LOAD-DATE: January 15, 2003

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National Post's Financial Post & FP Investing

January 10, 2003 Friday National Edition

SECTION: Financial Post: Briefing; U.S. Business; Pg. FP2

LENGTH: 141 words

HEADLINE: Intel to launch new chips for laptops called Centrino

SOURCE: Agence France-Presse

DATELINE: LAS VEGAS

BODY: LAS VEGAS - Intel Corp. will introduce its new line of chips for laptops called Centrino in the first half of this year, chief executive Craig Barrett said in a key note speech at the 2003 International Consumer Electronics Show. As Centrino will reduce power consumption by chips, the technology will extend battery life in laptops.

The product line will include a microprocessor, formerly known as Banias, chipsets and wireless networking technology for high-speed wireless internet access which uses wireless fidelity (Wi-Fi) called 802.11. This marks the first time the chip maker has branded a combination of technologies under one name. "The Intel Centrino brand signifies a new generation of mobile PCs that will change where and how people compute," said Pam Pollace, Intel vice president and director, Corporate Marketing Group.

LOAD-DATE: January 10, 2003

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Business Wire

January 9, 2003, Thursday

DISTRIBUTION: Business Editors/High-Tech Writers

LENGTH: 1094 words

HEADLINE: Intel CEO Craig Barrett: Innovation Unwires the Consumer; 2003 International CES

DATELINE: LAS VEGAS, Jan. 9, 2003

BODY:

Intel CEO Craig Barrett said that technology innovation will unwire consumers, giving them more freedom to connect to people, information and entertainment at any time from any place on any device.

"Unwiring the consumer is the next logical advance in consumer electronics," Barrett said from the 2003 International Consumer Electronics Show, where he will deliver a keynote speech later today. Barrett will describe the technology forces shaping the marketplace, industry innovations that are unwiring consumers, and the need to bring interoperability to computing and consumer electronics devices within the home.

"All consumers will be digital consumers," Barrett said, explaining that a worldwide digital conversion is being driven by the personal computers, proliferation of digital devices and content, the rapid adoption of broadband and wireless technologies, and the ongoing Internet build-out. "At the same time, young people who have grown up alongside powerful home PCs, cell phones and the Internet are now coming into the marketplace as digital consumers. They are connected by technology that permeates and enriches their lives in ways not experienced by previous generations."

Brought up in an era of fast-moving technology innovation, these digital consumers have higher expectations of what tomorrow's devices must do.

"Consumers will be drawn to devices that give them greater mobility, productivity and style, as well as new ways to enjoy digital music, movies, photos and games in more places," Barrett said. "Unwiring the consumer minimizes physical connections and inspires people's imaginations to explore new ways to work, live and play through easy-to-use technology."

To accelerate the process of unwiring the consumer, Intel is bringing more capabilities to silicon and creating new computing and communications architectures.

"This developmental work will lead to the creation of unwired digital devices, more users and more opportunity," Barrett said, adding that in the future all devices will be able to communicate and compute. "Consumers want technology to be available at any time and any place," he said.

Since introducing the Extended PC concept two years ago at CES, Barrett said powerful PCs connected to the Internet and a vast array of such new digital products as digital cameras, MP3 players and personal digital assistants (PDAs) have become a reality for consumers worldwide.

"The PC remains the most powerful and flexible device available to consumers, and it continues to evolve with new capabilities," Barrett said. "The PC is becoming unwired; wireless technologies are being integrated into the PC, which will offer the user more freedom and flexibility."

Barrett said that in the first half of this year, Intel will introduce the Intel(R) Centrino(TM) mobile technology for notebook computers. The technology includes a wireless capability as well as features designed to enable extended battery life, thinner and lighter form factors, and outstanding mobile performance.

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January 9, 2003

LENGTH: 1126 words

HEADLINE: INTEL
Intel CEO Craig Barrett - Innovation unwires the consumer

BODY:

INTERNATIONAL CONSUMER ELECTRONICS SHOW, LAS VEGAS - Intel CEO Craig Barrett said that technology innovation will unwire consumers, giving them more freedom to connect to people, information and entertainment at any time from any place on any device.

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"The Intel Centrino mobile technology will bring more communications capabilities to the notebook PC," Barrett said.

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Business and Industry

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Telecomworldwire

January 9, 2003

RDS-ACC-NO: 03653639

LENGTH: 116 words

HEADLINE: Intel introduces Centrino wireless computer technology.

BODY:

TELECOMWORLDWIRE-9 January 2003-Intel introduces Centrino wireless computer technology(C)1994-2003 M2 COMMUNICATIONS LTD http://www.m2.com

Electronic chip maker, Intel, has announced its upcoming wireless computer technology will be brand named Centrino.

This new brand, Intel's technology for notebook computers, is based on a new mobile processor microarchitecture and wireless capability.

Centrino, which is due to be released in the first half of 2003, will also include features designed to enable extended battery life, thinner and lighter form factors, and higher mobile performance, according to the company.

Prices for the products in the Centrino range were not available.

TYPE: Journal; Fulltext

JOURNAL-CODE: TELECOMW

LOAD-DATE: January 21, 2003

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Global News Wire - Asia Africa Intelligence Wire

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Bernama The Malaysian National News Agency

March 14, 2003

LENGTH: 313 words

HEADLINE: IBM EXPECTS TO MAINTAIN LEADING POSITION IN MOBILE PC MARKET

BODY:

KUALA LUMPUR, March 14 (Bernama) -- IBM Malaysia expects to lead the mobile computer industry in the country with the introduction of its three new range of IBM Thinkpad notebooks with redesigned flagships.

Its Personal Computing country manager, Bernard Chiang, said that for the past year IBM had been the leader in the market and was confident of retaining its position this year especially with the its new range of notepads.

The new products, namely ThinkPad T40, ThinkPad X3 and ThinkPad R40 feature longer standard battery life, power management to conserve battery power, strengthened data security and wireless format and features.

These new products would not only support Intel's new Centrino mobile technology but will significantly enhance it, Chiang told reporters after announcing the new range of IBM ThinkPad notebooks here today.

"The ThinkPad models are customer focused in line with the company's business direction of making people and businesses more efficient and productive through innovation that address their business needs," he said.

The ThinkPad T40, X31 and R40 feature the new intel pentium-M processor together with enhanced IBM Vantage design to set new standards in mobility and baterry life.

In addition, select models include Intel's Centrino mobile technology, providing wireless connectivity while helping to deliver high performance and extended battery life.

Chiang said IBM has targeted its T40 series, priced between RM8,500 and RM14,000 and secure wireless computing environment in the industry for organisations.

Its X31, priced between RM8,000 and RM12,000 and with up to 11 hours of optional battery, was especially suited to travellers.

The R40 series, available in 13, 14 or 15-inch displays, with pentium-M or celeron processors are priced between RM5,500 and RM7,000 and are targeted for students.

JOURNAL-CODE: FBNM

LOAD-DATE: March 17, 2003

FierceWireless, an online publication that monitors the wireless industry, said Cometa's formation gave the most credibility to the viability of the wireless market.

"There will be enough hot spots and Wireless ISPs that you'll be able to get a wireless connection anywhere," Hoskins said, "and when that happens, wireless data will be as ubiquitous as cell phones are today."

Hoskins said getting in on wireless Internet now is like getting in on the ground floor of cell phones two decades ago. Just two years ago, wireless Internet was available in only 723 markets in the United States.

Last year, that number climbed to 2,673 and he has no idea how big the number will be by the end of 2003.

Some local companies have made changes, additions or created new divisions to tap into that growing market.

Logical Net began offering wireless Internet service to customers primarily in the rural outskirts of Johnstown and Gloversville who could not get high-speed connections through traditional cable modems or digital subscriber lines, better known as DSL service. It erected a dozen transmitting towers to provide that service.

After three years of successfully offering the service, the company is now promoting it.

Hudson Valley Communications of Albany is a 30-year-old company that got its start focusing on two-way radios and CBs. Hudson Valley Communications already had three transmitting towers.

John Guzzo, owner of Hudson Valley Communications and Hudson Valley Wireless, realized the same towers could also be used to create hot spots in the region.

He launched Hudson Valley Wireless a year ago. The company has a dozen clients in the Capital Region and landed a dozen more in Glens Falls last month in the wake of the closing of Prominet Inc., a wireless service provider.

"Our next market to open will be in Saratoga," Guzzo said. That will happen within the next 45 days.

Vision Systems Inc., an Albany-based networking company, just created two divisions aimed at wireless Internet. Vision Systems recently was hired by Albany International Airport to design the airport's hot spot.

That led to Vision System's President Brian Epstein creating Tech Valley Wireless, a local hot-spot installer and WiFi Fee, a payment software program.

With WiFi Fee-which stands for Wireless Fidelity-a hot-spot site can charge users to go online.

For example, hotels that already have Internet access can tap into it by creating a hot spot and charge guests a fee-$2 an hour, for example, Epstein said-to log on using wireless connections. WiFi Fee gets a cut of the bill.

"Some hotels will give it to you because they don't know how to bill for it," Epstein said. "We will enable hotels [and other entitites] to bill for it."

Epstein said WiFi Fee will be spun off this year.

"It's overwhelming," he said. "[Wireless] is starting to proliferate the country."

LOAD-DATE: April 1, 2003

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The Economic Times

March 14, 2003

LENGTH: 391 words

HEADLINE: INTEL BETS WIRELESS WITH CENTRINO

BODY:

: Chip major Intel on Wednesday announced the commercial launch of Centrino, its mobile chips and processor technology, to enable computer makers to offer wireless connectivity to mobile users from home and from a growing number of Wi-Fi hotspot locations.

Intel said its much-hyped new set of chips would make wireless Internet access a standard feature on laptops within a year.

This new chip package is the wireless equivalent to Intel's own Pentium 4 for wired computing. "Unwiring the PC will fundamentally change the way people use computers," Avtar Saini, director, Intel Asia said, adding, "our focus on integrating all the elements of mobility allows Intel's Centrino mobile technology to deliver a total wireless computing experience...the first time we've put a combination of technologies under a single brand."

Indian and global computer manufacturers like HCL, Wipro, Acer, Samsung who are our partners have already begun rolling out notebook computers powered by Centrino chips and micro-processors, Saini added.

With this new technology, Intel claims, PCs would now become totally unwired. In an otherwise dismal market for new technology this year, industry analysts now feel that the technology could also dent demand for mobile phones, being capable of connecting to the Internet.

Centrino laptop users would now be able to surf the Internet or sign onto corporate networks, if they are within 100 metres of access points.

Toshiba notebook computers with the latest Centrino technology, which HCL markets in India, have just landed in the country, a HCL Infosystems spokesman said. He, however, said that pricing for the notebooks was yet to be worked out.

Meanwhile, Taiwan-based Acer said its Travelmate 800 has Centrino technology with an entry price of Rs 1.35 lakh. Acer is expected to launch two more models later this year.

Wipro Infotech has also announced the launch of the Wipro LittleGenius C series notebooks based on Centrino technology. Besides OEMs, Intel also announced that corporates, universities, airports, cafeterias, hotels could also benefit from the technology by setting up hot spots of wireless access points based on the 802.11 technology.

IBM, HP, Dell, Toshiba Corp, and Sony, have pledged to include the chipset, microprocessor and software in their new notebooks.

JOURNAL-CODE: WETI

LOAD-DATE: March 14, 2003

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Malaysia Economic News

March 14, 2003, Friday

LENGTH: 309 words

HEADLINE: IBM EXPECTS TO MAINTAIN LEADING POSITION IN MOBILE PC MARKET

SOURCE: IBM-NOTEBOOK

DATELINE: KUALA LUMPUR, March 14, 2003

BODY:

IBM Malaysia expects to lead the mobile computer industry in the country with the introduction of its three new range of IBM Thinkpad notebooks with redesigned flagships.

Its Personal Computing country manager, Bernard Chiang, said that for the past year IBM had been the leader in the market and was confident of retaining its position this year especially with the its new range of notepads.

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LOAD-DATE: March 17, 2003

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NORDIC BUSINESS REPORT

March 14, 2003

LENGTH: 100 words

HEADLINE: Birdstep Technologies Inc raises NOK20m in private placement

BODY:

The Norwegian embedded database and wireless infrastructure software technologies developer Birdstep Technologies Inc said today (14 March) that it had raised NOK20m in a private placement.

"The funding provided will be used in market development and in the deployment of projects with large companies such as Cisco Systems (Ecosystem partner), HP (OEM partner for RDM), Intel Centrino and others," Birdstep Technologies said.

One Norwegian krone (NOK) is worth approximately 0.09 British pounds (GBP).

((Comments on this story may be sent to nbr.feedback£nordicbusinessreport.com))

LOAD-DATE: March 14, 2003

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March 13, 2003

LENGTH: 931 words

HEADLINE: INTEL LAUNCHES INTEL CENTRINO MOBILE TECHNOLOGY

BODY:

Dubai, UAE Representing Intel's best technology for mobile PCs, Intel Centrino mobile technology includes a new mobile processor, related chipsets and 802.11 wireless network functions that have been optimised, tested and validated to work together. In addition to wireless communications, Intel Centrino mobile technology includes features designed to enable extended battery life, thinner and lighter notebook designs, and outstanding mobile performance. Unwiring the PC will fundamentally change the way people use computers, allowing them to communicate, be productive or be entertained wherever and whenever they want, said Craig Barrett, Intel chief executive officer. Our focus on integrating all the elements of mobility allows Intel Centrino mobile technology to deliver an outstanding wireless computing experience and marks the first time we've put a combination of technologies under a single brand. This breakthrough innovation, together with industry-wide investment and WiFi hotspot deployments, brings computing and communications capabilities to businesses and consumers, adding new value to mobile PCs.Intel Centrino mobile technology-based notebook PCs are available immediately from leading computer makers worldwide. Computer shoppers can identify these notebooks by a Centrino brand logo featuring a striking magenta colour and the Intel Inside mark.Accelerating Hotspot Deployment WorldwideHotspots locations where users can connect using 802.11 wireless technology are on the rise, which is enabling users to be more mobile than ever. According to industry analyst firm IDC, there will be more than 118,000 hotspots worldwide by 2005.** Using a truly mobile notebook computer can change the way people live.

With notebooks based on Intel Centrino mobile technology, a business traveller can check office email or read the hometown newspaper online while waiting for a flight at the airport, and still have battery life left to watch a DVD movie on the plane ride home. A real estate agent can check the latest listings wirelessly while dining with prospective homebuyers. A financial planner can check the market and activate client orders while at a seminar without compromising on the performance necessary to run the most demanding office applications. Students can register for next semester's classes or seek a part-time job from the college library, all on a sleek, lightweight system that won't drag them down. "We are very proud to be able to bring this latest wireless technology to the Arab World at the same time as the rest of the world. Many retailers are already witnessing the majority of their PC sales are in laptop format. I am sure this trend will continue and actually accelerate with our new combination of computing and wireless technologies. We are sure it will change a lot of peoples' lives", said Gilbert Lacroix, General Manager Intel Middle East and North Africa. "This region already has some of the worlds earliest adopters of this wireless technology. The Higher Colleges of Technology have been working with wireless technology for nearly two years and two weeks ago signed a world first memorandum of understanding with us for the roll-out off a wireless infrastructure in all 11 of their campuses," concluded Lacroix.As part of the introduction of Intel Centrino mobile technology, Intel has been working with leading wireless network service providers, hotels, airports, retail and restaurant chains worldwide to accelerate deployment and increase awareness of wireless public hotspots. In addition to marketing and promotional activities, Intel developed the Wireless Verification Programme which includes engineering and testing of the Intel Centrino mobile technology with various access point devices, software combinations, hotspot locations and wireless service providers to verify they are all compatible, further enhancing the end user's wireless experience. Intel's efforts worldwide have already resulted in thousands of verified hotspots. The company expects to verify more than 10,000 by the end of the year. Intel has also

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March 13, 2003

LENGTH: 353 words

HEADLINE: TOSHIBA NOTEBOOKS REACH NEW HEIGHTS WITH SUPER-POWER WIRELESS TECHNOLOGY

BODY:

Dubai, UAE The company says the new products are a direct result of collaboration with Intel and will bring customers exceptional performance and extended battery life to enhance notebook performance and increase productivity.This new technology has enabled us to reach new heights in mobile computing, with amazing battery life and integrated wireless connectivity, said Ahmed Khalil, regional manager of Toshiba Middle East's computer systems division.

The four new Centrino-based series are specifically designed for corporate users and travelling professionals who insist on the latest technology to give them optimal flexibility and productivity. Integrated wireless LAN capability and extended battery life are combined with new mobile processor micro-architecture and wireless capability as well as thinner and lighter form factors, together delivering outstanding mobile performance. The new Centrino-based models carry Toshiba's exclusive three-year international warranty as do all Toshiba mobile computers.Centrino technologies include a microprocessor, related chipsets, and wireless networking capability the first time Intel has branded a combination of technologies under one name.Unwiring the PC will change the way people use computers, allowing them to communicate, be productive or be entertained wherever and whenever they want," said Ferruh Gurtas, business development manager, Intel MENA."Our focus on integrating all the elements of mobility allows Intel Centrino mobile technology to deliver an outstanding wireless computing experience. This breakthrough innovation, together with industry-wide investment and WiFi hotspot deployments, brings new computing and communications capabilities to businesses and consumers, adding value to mobile PCs, he added.The new Toshiba series the Portege R100, Tecra S1, Tecra M1 and Satellite Pro M10 will be launched later this month and will be available from Middle East distributors at the same time they reach European markets.For further information, please contact:Rana Mouawad or Hisham El-Masri, Bain Euro RSCG, DubaiTel: (9714) 3903030

JOURNAL-CODE: WMEC

LOAD-DATE: March 13, 2003

SOURCE: NVIDIA Corporation

03/12/2003 NOTE TO EDITORS: If you are interested in viewing additional information on NVIDIA, please visit the NVIDIA Press Room at http://www.nvidia.com/view.asp?PAGE=press_room./

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ASIA PULSE g

LOAD-DATE: March 13, 2003

This month, Optus announced it would launch 500 hotspots throughout Australia over the next 18 months.

A number of hardware makers have also partnered with Intel to incorporate the company's wi-fi technology in their devices. They include Dell, Panasonic, NEC, Acer, IBM, Ipex, ASI and Optima.

LOAD-DATE: March 12, 2003

-- Dell Latitude(TM) D600

-- Dell Inspiron(TM) 600M

-- NEC LaVieM

-- NEC Versa(R) S900

-- Acer TravelMate 800

-- TOSHIBA TECRA(R) S1 Series

MOBILITY FIRE GL 9000

-- IBM ThinkPad(R) T40

About ATI Technologies

ATI Technologies Inc. is a world leader in the design and manufacture of innovative 3D graphics and digital media silicon solutions. An industry pioneer since 1985, ATI is the world's foremost visual processor unit (VPU) provider and is dedicated to deliver leading-edge performance solutions for the full range of PC and Mac desktop and notebook platforms, workstation, set-top and digital television, game console and handheld markets. With 2002 revenues in excess of US $1 billion, ATI has more than 1,900 employees in the Americas, Europe and Asia. ATI common shares trade on NASDAQ (ATYT) and the Toronto Stock Exchange (ATY).

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LOAD-DATE: March 14, 2003

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LOAD-DATE: March 14, 2003

Utilizing Intel(R) Centrino(TM) Mobile Technology and the Intel(R) Pentium(R) M processor for maximum performance with minimal battery drain, the Toughbook(R) CF-18's feature a tilting-and-swiveling 10.4-inch high-visibility display panel that flips and closes over the unit's keyboard to become a fully functional, rugged Microsoft(R) Windows(R) XP Professional or Windows(R) 2000 Touchscreen PC tablet, or--in the digitized-screen variant--a state-of-the-art Windows(R) XP TabletPC.

"The Toughbook 18 is quite simply in a class by itself," said Rance Poehler, president of Panasonic Computer Solutions Company. "It will redefine the tablet PC category while setting new standards for versatility in notebook computing. Panasonic has leveraged its years of experience and engineering to design a tablet PC which provides the durability demands for both white and blue collar applications. The 'convertible' nature of the Toughbook 18 makes it ideal for use from claims adjusters to hospital nurses while also being able to withstand the pounding from Panasonic's Military and Public Safety customers. The Toughbook 18 can be carried up a ladder, hung on a wall as a tablet, or mounted in a vehicle like a standard notebook," notes Poehler.

"It also offers our customers--some of whom regularly find themselves in situations where reliable communication is literally a life and death matter--more simultaneous connectivity options than any other computer in its class, notebook or tablet PC. No longer does a department head or IT manager have to decide between wireless LAN, Bluetooth(TM), CDMA, or GPS access. Now a company can have many options working simultaneously, in an under-five-pound computer that they can depend on to keep them connected in even the most unforgiving operating environments.

As a provider of portable computing systems to some of the most demanding industrial, public service and military organizations in the world, we have always defined ourselves by our ability to deliver high-performance, rugged computers for use anywhere, anytime, under any conditions," comments Poehler. "Typical retail notebook computers have failure rates as high as 20 percent, according to Gartner. In my opinion, retail plastic tablet computers with no ruggedization will experience even higher failure rates than notebook PCs. Carrying into the field a plastic tablet PC with an unprotected glass LCD display is an accident waiting to happen and will present its user with a costly learning experience," further notes Poehler.

Resetting the Baseline of Portable Performance & Power Management

The Toughbook(R) CF-18's have been designed from the ground up to fully exploit Intel(R) Centrino(TM) Mobile Technology platform's unparalleled ability to streamline internal computer instruction operations, increase real-word computing efficiency and prolong battery life. Advanced instruction prediction is used to pre-load instructions based on past program behavior for smoother, faster transitions between operations; power-optimized logic regulates consumption and dissipation levels for lower CPU average power, and intelligent power distribution circuitry focuses the system power where the CPU needs it most.

Intel(R) Centrino(TM) mobile technology communications enhancements include the Intel(R) PRO/Wireless Network Connection 802.11b WLAN support and advanced encryption and security technology for Virtual Private Networks.

Full Pen Tablet Functionality With Maximum OS Flexibility

The Toughbook CF-18 Convertible is available in two models- a Windows(R) XP Professional or Windows(R) 2000 PC notebook that converts to a tablet using standard pen extensions or proprietary Windows-compatible applications and a Windows(R) XP Tablet PC Edition-based notebook with a magnetically digitized display that converts to a 100-percent Tablet PC-compliant pen tablet.

The digitized screen in the Tablet PC version allows users to incorporate handwritten input into Microsoft(R) Office applications, annotate documents imported from a server or other computer, instantly change screen views from portrait to landscape mode and use pen "gestures" to perform such functions as pointing, clicking, selecting and dragging.

Other features integrated into the CF-18 Tablet PC Edition include handwriting-to-text conversion, speech recognition (English, Japanese and simplified Chinese), and Microsoft(R) ClearType(R) technology for maximum text readability.

Innovative LCDs Make Everything Clear Day Or Night

American subsidiary of Matsushita Electric Industrial Co., Ltd. of Japan (NYSE: MC), which recorded annual sales of $51.70 billion in the most recent fiscal year. Matsushita Electric is one of the only manufacturers today that directly controls the process of design, manufacture and quality assurance of its portable PCs. Many key components, including LCD panels, Lithium Ion batteries, DVD and CD-ROM drives, and board-level electronics are the products of its divisions. The products, people and business of Panasonic Computer Solutions Company are entirely dedicated to the needs of the professional user, including Fortune 1000 business and government professionals. Panasonic also supplies mobile computing solutions to over 2,000 police departments in the United States.

Note to Editors: All brand and company/product names are trademarks or registered trademarks of the respective companies. All specifications are subject to change without notice.

Information on Panasonic's full line of notebook PCs for the mobile professional can be obtained by calling 800 662 3537 or at http://www.panasonic.com/toughbook

CONTACT: Panasonic Computer Solutions Company
Jeffrey Ayers, 516/609-9500
jayers£p2c2.com
http://www.panasonic.com/toughbook

URL: http://www.businesswire.com

LOAD-DATE: March 14, 2003

LOAD-DATE: March 13, 2003

JOURNAL-CODE: FBLN

LOAD-DATE: March 13, 2003

The Business Times Singapore March 13, 2003 Thursday

He added that Intel was talking with regional hotel chains in the Asia-Pacific to set up Wi-Fi points in their hotels. Apart from Changi Airport, Intel has Wi-Fi points in Sydney, Hong Kong and Taipei airports. In the US, it has an agreement with McDonald's and the Marriott group of hotels for providing Wi-Fi access. He said a popular coffee chain would soon introduce Wi-Fi connections worldwide, including Singapore.

At the local launch of Centrino yesterday, a number of leading mobile PC makers announced new models based on Intel's new mobile technology. They included the Acer TravelMate 800, IBM ThinkPad T40 notebooks, Dell Latitude D600 and D800, Fujitsu LifeBook S6120 and E4010, NEC Versa S900, and Toshiba Satellite Pro M10 series and Tecra M1 series.

LOAD-DATE: March 12, 2003

MDG VisionBook Pro 5000 Distinctive Features:

- Intel(R) Centrino(TM) Mobile Technology
  - Up to Intel(R) Pentium M processor 1.60-GHz
  - Intel(R) Wireless PRO Network Connection 802.11b
  - Intel(R) 855 chipset family
- 5-hour Extended Battery Life
- 64MB ATI MOBILITY RADEON 9000 4X AGP for exceptional graphics performance
- Up to 15.0" SXGA+ TFT-LCD Display
- 5.9-lbs. & 1.1" thin & light sleek design

Select VisionBook Pro 5000 Ready-to-Go Models

Includes Free SMC Router - retail value of $149:

Model	Key Specifications	Price
VBP5-41	Intel Pentium M processor 1.30-GHz 14.1" XGA TFT-LCD / 24X CD-ROM Drive 256MB DDR Memory / 30GB Hard Disk Drive Microsoft XP Home	$1999
VBP5-51	Intel Pentium M processor 1.30-GHz 15.0" SXGA+ TFT-LCD / DVD-CDRW Combo Drive 512MB DDR Memory / 40GB Hard Disk Drive Microsoft XP Professional	$2499
VBP5-52	Intel Pentium M processor 1.60-GHz 15.0" SXGA+ TFT-LCD / DVD-CDRW Combo Drive 512MB DDR Memory / 60GB Hard Disk Drive Microsoft XP Professional	$3399

(x) Customization available for processor, hard drive, optical drive and memory

MDG Computers, established in 1991, is a Canadian owned and operated manufacturer of MDG brand desktops and notebook computers, available across Canada through its network of stores and affiliates. Complete product information is available at www.mdg.ca.

(1) As tested on BatteryMark 4.01
(2) Available May 2003
(3) Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. As measured by MobileMark(x) 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations

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Global News Wire - Asia Africa Intelligence Wire

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CMPnetAsia.com

March 13, 2003

LENGTH: 1233 words

HEADLINE: INTEL LAUNCHES CENTRINO

BYLINE: Anthony Cataldo

BODY:

Intel it seems, has found a new religion, and it isn't about the worship of raw clock speed.

As the company rolls its latest mobile platform across the globe this week, starting in Tokyo, listeners aren't likely to hear the usual bragging about how the CPU giant crammed another muscle-bound processor into portables on the brink of a thermal meltdown.

To be sure, Intel's Centrino platform is still ambitious at the hardware level, bringing together a new microprocessor built from scratch, a chip set and an embedded wireless-LAN module. But this rollout is about more than components. Intel's goal is to create a portable computing environment that doesn't just mimic desktop systems, but offers glitch-free wireless access, longer battery life and no-hassle operation.

Marketing and promotions alone " more than it shelled out for the Pentium 4 " and dispatching thousands of engineers and technicians to validate Centrino-compatible hot spots worldwide make this a huge effort. This largesse will be disbursed to traditional OEMs as well as some new players that fall outside Intel's sphere of influence, including hotel chains, train stations and airports.

"They're doing a lot of validation with the OEMs at the platform level and then in the field to ensure that the way the machines are shipped, and how hot spots are set up, makes it an easy experience for users to find the access point and get logged on," said Nathan Brookwood, an analyst with Insight64. However, the platform is already drawing criticism for supporting only the IEEE 802.11b wireless-LAN specification. Though .11b is the prevailing WLAN standard, a/b combination systems are now in the market, and the emerging .11g spec is gaining momentum.

At the same time, the entry of such a mighty rival is a double-edged sword for competitors. "Telling the world about Wi-Fi and why you should get it should put pressure on IT departments and hotels to install access points," said Rich Redelfs, president and chief executive officer of Atheros Communications Inc., which offers dual-mode Wi-Fi chips for portable systems. "The bad point is that they're going to try to convince you to use only Intel." Atheros, which counts HP, IBM, NEC and Toshiba among its customers, also provides silicon that goes into access point cards and PCMCIA cards sold by Intel.

An Intel spokeswoman said that almost all the major PC makers will be at a launch event this week showing off new Intel-based portable systems.

Goodbye, desktop

Perhaps the real test for Intel is whether it can sell the total user experience and not get trapped by traditional performance measurements.

"To the extent that the new product can deliver and dramatically improve the wireless experience so you can use your machine for several hours without electrical outlets and carrying the charger with you, then that will be a substantial improvement in usability," Brookwood said.

This story first appeared in EE Times, a US-based CMP publication.

JOURNAL-CODE: WCMP

LOAD-DATE: March 24, 2003

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Indian Express

March 13, 2003

LENGTH: 273 words

HEADLINE: NOW UNWIRE YOURSELF WITH INTEL 'S WIRELESS COMPUTER

BODY:

Now Intel makes connecting to the Internet via wireless networks easier. Within Rs 1 lakh, the consumer may now just buy a laptop with Intel Centrino mobile technology or just spend around Rs 2,500 for a wireless local area network (WLAN) card to upgrade his old laptop.

And the laptop will now, Intel claims, be completely wireless and also with a battery-life of 5 hours. At a press meet in New Delhi, Intel commercially launched its mobile chips and processor technology, known as Centrino to enable computer manufacturers offer connectivity anytime and from anywhere. Talking to The Indian Express, Intel director G.B. Kumar said, "though we did face some resistance to the idea from notebook suppliers, almost all top-notch companies including H-P, Dell Computer, IBM, HCL, Wipro, Acer, Samsung and Toshiba Corp will be offering products with the new technology. Available in the market, Acer's TravelMate 800 (with Centrino technology) is priced Rs 1.35 lakh upwards. HCL is still working out the pricing of Toshiba notebook computers and Wipro also is slated to launch it. Wi-Fi provides high-speed Internet access from fixed-position phone or cable television network lines. Users of properly equipped laptops can gain access to the Internet, or potentially their own corporate network, if within 300 metres of a Wi-Fi access point. Already, Wi-Fi is popular among home computer enthusiasts who can install a small antenna box in any room of the house to create a local network linking PCs and other home electronics. Analysts say wireless computer connections could create a sea change in the way computers are used.

JOURNAL-CODE: WINE

LOAD-DATE: March 13, 2003

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March 13, 2003

SECTION: CITY EDITION; BUSINESS AND FINANCE; Pg. 19

LENGTH: 247 words

HEADLINE: Intel launches new chip

BYLINE: By KARLIN LILLINGTON

BODY:

Intel is manufacturing parts of its new Centrino family of chips, launched yesterday, at its Leixlip, Co Kildare, microchip fabrication plant. The new mobile processor is designed to make wireless computing easier and less demanding on the battery life of laptops and mobile devices.

"Leixlip is making the chipset immediately, and it is envisaged that we'll also probably produce the new processor when we move to the new fabrication plant early in 2004," said Intel country manager Mr Colin MacHale.

Intel halted construction of its new facility in Leixlip, Fab 24, during the start of the economic downturn but restarted the project recently. The Centrino technology has a low power usage and is expected to allow computer manufacturers to boost dramatically the performance of laptop batteries, in turn allowing thinner and lighter laptop designs.

"It's a ground-up design really aimed at mobility and at trying to get the five, six or seven-hour battery life that people are looking for," said Mr Iain Beckingham, a technical consultant with Intel.

Centrino searches for and locks on to wireless internet networks, such as those within some businesses and increasingly, in public "hotspots" such as train stations, hotels and airports. Intel said it was partnering with mobile operator O2 to provide wireless hotspots around the State.

"We're trying to drive the same seamless connectivity and roaming that you'd find with your mobile," Mr Beckingham said.

LOAD-DATE: March 13, 2003

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Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom <http://www.intel.com/pressroom/>.

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LOAD-DATE: March 13, 2003

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Agere's product will be compatible in the new "g" standard that has yet to be ratified by the Institute of Electrical and Electronic Engineers. Agere's combined-standard chipset eliminates anxiety on the part of the customer that a mobile device may only work on one frequency, he said. The new product also is smaller than the competitive offerings with fewer components.

The 802.11b standard, however, is the dominant protocol now and will be for some time to come.

Grewe said Agere has been involved in wireless chip technology for 15 years and its customers rely on that long history when buying the company's products. Agere's first wireless chipsets debuted in 1999, and the company has been refining the technology since then, he said.

Agere has struck deals with several PC makers including Dell to embed its wireless chipsets into computers. Agere is the sole supplier of wireless LAN chipsets used in Dell's Latitude PC.

Nonetheless, the wireless chipset market has become crowded and some experts predict Agere will wind up losing market share to Intel and other competitors. The profits to be made from the wireless boom are also diminishing as more players push the average selling price of wireless equipment ever downward.

Intel shares, which lost half their value last year, rose 35 cents Wednesday to $16.20 on the Nasdaq Stock Market. Dell rose 27 cents to $26.01, and Hewlett-Packard Co. gained 16 cents to $15.57. Agere shares fell 9 cents to $1.44.

IBM has shipped 2,600 machines with Centrino, said Steve Ward, an IBM senior vice president. He says 620 customers estimate they'll save a total of $2.3 billion a year by reducing the amount of time spent setting security features and backing up data.

Centrino's Pentium-M chip also offers as much as 80 percent more battery life and 20 percent better performance than the Pentium 4, said Intel, of Santa Clara, Calif.

IBM's new T40 ThinkPad runs up to 5.5 hours on a battery, twice as long as its predecessor, and costs $2,000. Gateway Inc.'s 450 model laptop runs more than five hours on a single battery and eight hours with an add-on power cell. The machine costs $1,600 with a 1.3-gigahertz chip and $2,000 for a 1.5-GHz version.

Intel is counting on partners such as Hilton Hotels Corp. and Borders Group Inc. to increase the number of "hot spots," or public areas where wireless-equipped PCs can connect to the Web.

The chipmaker, which tests the services to make sure they run correctly, estimates there will be 10,000 sites verified to work with Centrino by the end of this year.

More than 80 percent of mobile PCs will have wireless features by 2005, researcher Gartner Inc. predicted.

At 1.6 gigahertz, the new processor's top speed is slower than that of other laptop chips sold by Intel. Prices start at $292 each in shipments of 1,000 or more for a model that runs at 1.3 GHz; the price jumps to $720 for 1.6-GHz chips.

Advanced Micro Devices Inc., Intel's biggest rival in PC microprocessors, on Tuesday released 12 chips for notebooks, including several designed to consume less power and fit into laptops that weigh less than four pounds, spokeswoman Duyen Truong said.

Those chips cost $71 to $246 and will be included in PCs sold by Fujitsu Siemens Computers Holding BV, Europe's biggest maker.

Staff writer Jeanne Bonner and Dan Goodin of Bloomberg News contributed to this story.

GRAPHIC: 2 Photos by Anthony Upton and Rick Maiman, Bloomberg News; **1. STACY SMITH, an Intel executive, uses a laptop with Intel's new chip that can connect to high-speed Internet service in wireless hotspots such as London's Paddington Station. The chip will compete with an Agere chipset that can connect via+ multiple protocols. **2. CRAIG BARRETT, CEO of Intel Corp., speaks at the launch of the Centrino chip package in New York.

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National Post's Financial Post & FP Investing

March 13, 2003 Thursday National Edition

SECTION: Financial Post; Wireless Internet; Pg. FP1

LENGTH: 630 words

HEADLINE: Intel bets its future on mobile technology chip: Centrino Pentium-M: New chip offers Internet access from public 'hot spots'

SOURCE: Financial Post, with files from wire services

BYLINE: Kevin Restivo

BODY: Intel Corp., the microprocessor maker that has seen its fortunes wane with the decline in desktop computer sales, placed a big bet on the future of wireless computing yesterday when it unveiled its much hyped mobile technology, Centrino.

The company's new Centrino chips, found in laptop computers, will give people using the technology untethered access to the Internet from home and public places via radio waves. Intel has already announced partnerships with McDonald's Corp. and Borders Group Inc. in the United States to offer "hotspots", or public areas where wireless-equipped PCs can connect to the Web.

The other major selling point is longer battery life -- the Centrino Pentium-M chip offers as much as 80% more battery life and 20% better performance than the Pentium 4, the company said.

"Mobile [devices] are the fastest-growing segment of the PC industry," said Pat Gelsinger, Intel's chief technology officer, who was in Toronto yesterday. "Both consumers and businesses are moving from desktops to mobile platforms."

Gartner Inc., a U.S.-based market research company, predicts that 80% of all commercial notebooks sold will be wireless-enabled by 2005.

Intel, based in Santa Clara, Calif., has long dominated the market for microprocessors, which act as an engine for personal computers.

Despite the firm's success, sales of desktop computers have slowed in recent years and the company's sales have dropped in six of its past seven quarters.

That is partly why the company is spending US $300-million to promote its mobile technology, in its biggest advertising campaign since the launch of the Pentium.

Intel is hoping Centrino's benefits will give consumers and businesses a reason to buy laptop computers from major manufacturers such as International Business Machines Corp., Dell Computer Corp., Toshiba Corp. and Hewlett-Packard Co., which started shipping Centrino-based laptops yesterday, selling for as little as US$1,400.

The package includes a microprocessor designed specifically to boost a laptop's battery, chips to connect it to the rest of the machine and a wireless networking feature.

In Canada, Centrino-powered laptop computers will sell from $1,949 to over $4,000 from several original equipment manufacturers (OEMs).

"Everyone is hoping this will be a catalyst and spur mobile demand," John Medica, a Dell senior vice-president, said at the New York event.

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Emerging Markets Datafile
New Straits Times-Management Times

March 13, 2003 Thursday

EMEDIA-ACC-NO: 200303130241.m40

LENGTH: 195 words

HEADLINE: GPRS facilities for insurance agents, NEW STRAITS TIMES-MANAGEMENT TIMES

BYLINE: Ferina Manecksha

BODY:

GREAT Eastern Life Assurance (M) Bhd plans to roll out general packet radio services (GPRS) facilities for its agents by the third quarter of this year.

Its chief information technology officer information systems Kong Kim Yihe said the company is in the midst of discussions with a number of telecommunications companies on the GPRS initiative.

According to Kong, the move is part of Great Eastern's information and communications technology (ICT) initiative to boost the level of services in an increasingly competitive market. The company, he added, expects to invest substantially over the next two years to boost its ICT infrastructure.

Kong was speaking to reporters in Kuala Lumpur last week after representing Great Eastern in a signing ceremony with Intel Electronics (M) Sdn Bhd for providing its frontline customer service agents with a choice of wireless access services.

The services consist of technological upgrades, which include Intel's Centrino mobile technology-based notebooks, expected to be implemented by the end of this month. At the signing, Intel was represented by its Asia- Pacific's regional marketing manager Lai Yit Loong.

LANGUAGE: ENGLISH

JOURNAL-CODE: m40

LOAD-DATE: March 13, 2003

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Newsday (New York)

March 13, 2003 Thursday ALL EDITIONS

SECTION: BUSINESS & TECHNOLOGY,

Pg. A43

LENGTH: 469 words

HEADLINE: Intel Betting on Wireless with New Centrino Chip

BYLINE: By Stephen Williams. STAFF WRITER

BODY:

Intel Corporation has this fantasy: a customer walks into a McDonald's - any McDonald's - and says, "I'd like a double cheeseburger, fries, a Sprite and a high-speed wireless connection to the Web, please."

Yesterday that hypothesis approached reality as the industry's dominant computer-chip company and several of its partners launched Centrino, a mobile computer technology they hope will make wireless network connectivity pervasive.

In the Intel scheme, McDonald's, one of many partners that includes hotel chains and airlines, will offer "hot spot" wireless Net service - or WiFi - to Centrino-equipped laptop users. "Today you'll be starting to get bits along with your bites," quipped McDonald's executive Mats Lederhausen.

While WiFi is not a new concept, Intel is counting on selling a package that will make the experience more transparent to a mass-market consumer audience. "This convergence of computing and wireless communication will change the way people use computers," proclaimed Intel chief executive Craig Barrett at the launch event in Manhattan yesterday. The Santa Clara, Calif.-based company plans to spend $300 million promoting Centrino.

Beyond the wireless factors, some of the new Centrino portables will be lighter in weight than conventional laptops, with significantly increased battery life and faster performance. The Centrino chip is the first Intel chip built specifically for mobile use, rather than reconfigured from a desktop computer.

Almost every maker of so-called Wintel-based (Windows/Intel) computers plans to introduce a Centrino model, or several. Already at retail are units from Dell Computer, Toshiba, IBM, Acer and Hewlett-Packard. Most of the machines will range in price from about $1,400 to $2,000.

In test results released yesterday, PC World magazine reported that two of the three tested Centrino notebooks operating on a 1.6-gigahertz chip "outran all previously tested notebooks." Battery life on a Toshiba product lasted "an eye-popping 7 hours, 6 minutes," PC World reported.

Intel also has alliances for wireless hot-spots with Hilton Hotels & Resorts and Borders Group Inc. and Music. McDonald's, meanwhile, says it is adding wireless capabilities to 10 restaurants in Manhattan and at locations in California and Chicago by year's end. The company says it's offering one hour of free access to customers who purchase a combo meal.

Intel is being savvy by using the Centrino platform and partnerships "to shape demand," said Leslie Fiering, a vice-president of the Gartner Group specializing in mobile computing. "By coupling the new notebooks with the hot spot cooperation, Intel will drive penetration of wireless into all segments of the notebook market. Ultimately, of course, the goal is to sell more notebooks."

GRAPHIC: AP Photo - Burger, Fries and Wireless Surfing - William Tyler demonstrates Intel's Centrino wireless mobile technology outside the Times Square McDonald's yesterday. The semiconductor chip maker is working with

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Newswire (VNU)

March 13, 2003

LENGTH: 206 words

HEADLINE: CENTRINO HAS LANDED

BODY:

Dell, Toshiba, IBM, Sony and other PC makers will this week launch new notebook computers based on Intel's Centrino technology, formerly code-named Banias.

To carry the Centrino brand, laptops must include an Intel Pentium-M mobile processor, an accompanying 855 chipset, and an Intel wireless LAN adapter.

However, some vendors will also sell laptops with non-Intel WLAN adapters for firms that have standardised on alternative networking kit.

IT Week Labs tests of the first Centrino laptops found that some, like Toshiba's <a href="http:/ /www.itweek.co.uk/Products/Hardware/1139394" target="top">Tecra S1 , are capable of running for more than five hours without a recharge - compared withan average battery life for laptops of 3.5 hours. However, Toshiba's desktop-replacement system includes a larger than average battery. Results for ultraportable Centrino systems - to be published shortly - proved much less impressive.

See IT Week's special "http:/ /www.itweek.co.uk/Specials/1139299" target="top">Focus on Centrino for more information.Have your say: <a href="mailto:itweek_letters£vnu.co.uk" style="text-decoration:none">reply to <a href="http:/ /www.itweek.co.uk" style="text-decoration:none">IT Week

JOURNAL-CODE: WNEW

LOAD-DATE: March 13, 2003

But Intel's lavish marketing campaign -- which debuted with eight-page ads in two national-circulation newspapers -- will help educate buyers, analysts said.

GRAPHIC: PHOTO: Hot spot. William Tyler (right) and his colleagues demonstrate Intel's Centrino wireless mobile technology outside the Times Square McDonald's restaurant in New York City on Wednesday.
JOHN MARSHALL MANTEL/THE ASSOCIATED PRESS
LOAD-DATE: March 13, 2003

Micro Solutions has just announced its portable Hi Speed USB 2.0 backpack DVD+RW drive, which is a removable storage device for creating, storing, and sharing video, photographs, and music. The DVD+R speed is 4X. Additional features allow users to create slide shows, use borders and captions for scrapbook pictures, animate button images and backgrounds, and add music to menus and slide shows. Company: Micro Solutions Inc. Availability: Now, at major retailers Price: $349 For more information, click here: www.micro solutions.com

Product: MovingPicture 4.4
StageTools' MovingPicture 4.4 is pan and zoom animation software that now supports images of up to 8,000 by 8,000 pixels. It has doubled the rendering speed of the previous version, supports multiple processors on Windows and Mac systems, and offers many productivity enhancements. Company: StageTools Availability: Now, at www.stagetools.comPrice: $199 For more information, click here: www.stagetools.com

Product: Sony VAIO PCG Z1A
Armed with an Intel Centrino processor, the Sony VAIO PCG Z1A is built for road warriors. This machine has a 14.1 inch SXGA LCD and on board CD RW/DVD combo drive, and according to Sony, is great for in flight movie viewing. Sony also pushes long battery life and ensures enough power to get through a full length feature and even get some work done. Now all you'll need is the popcorn. Company: Sony Electronics Availability: March, 2003, at major retailers Price: $2,400 For more information, click here: www.sonystyle.com/vaio

Product: Toshiba Pocket PC e750
Toshiba's newest Pocket PC, the e750, offers increased storage capacity and integrated wireless connectivity for general productivity and vertical market applications. 32MB of the 96MB of memory is dedicated to NAND flash memory. Features include CF and SD expansion slots, Wi Fi wireless communication, and VoIP capability. Company: Toshiba Computer Systems Group, a division of Toshiba America Information Systems Inc. Availability: date, N/A; major retailers and www.shoptoshiba.comPrice: $599 For more information, click here: www.shoptoshiba.com

Product: Transmeta TM8000
The next generation Transmeta TM8000 processor is designed to improve performance and energy efficiency for thin and light notebooks, tablet PCs, quiet desktops, small and home office servers, and high density blade servers. With an on chip 400 MHz HyperTransport bus interface, the TM8000 adds a DDR 400 SDRAM memory interface. Company: Transmeta Corp. Availability: Third quarter, 2003 Price: N/A For more information, click here: www.transmeta.com

For more Product Bulletins:
LOAD-DATE: March 25, 2003

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LOAD-DATE: March 19, 2003

The V505 keyboard is adequate, but does not feel quite as good as the ThinkPad. The feedback from the keyboard makes it feel slightly insubstantial, whereas the ThinkPad keyboard feels like a desktop keyboard.

Then there's the matter of the battery. The V505 got a solid two hours of DVD movie playback, with the speakers at full blast. That's more than an hour short of the ThinkPad T40, and 30 minutes short of the PowerBook. An optional extended battery ($500) doubles the battery life to four hours and boosts the weight to exactly 5 pounds.

Sony tries to cram a lot into this thin space, which explains why this is the thickest of the three laptops -- 38 percent thicker than the T40. At the same time, Sony engineers were conscious of the heat challenges that come from cramming so many electronic components into a small space, so they built in a nice venting system that pushes hot air out the sides before it scorches your lap.

Another factor also aids Sony's thin, light design: a new, extra-slim CD-burning DVD drive. The ThinkPad uses a similar component. And like all Vaios, the V505 includes a slot for MemoryStick flash media.

The V505 is a great laptop for those who want 802.11b wireless in a powerful, lightweight package, and don't want to pay a lot for it. Just be aware that while the laptop's design is extraordinary, the battery life is average.

Normally, "sleek" and "ThinkPad" are two words that don't go together. IBM's laptops have a similar reputation to the one Volvo enjoyed in the auto industry until recently -- boxy, simple-looking, yet practical. But thanks in part to better heat management in Intel's Pentium-M chip, things have changed with the inch-thick T40.

Don't get me wrong, the ThinkPad T series is still boxy. But the laptop's thin profile gives it a feel that's minimalist, not just simple. And since it manages to pack a DVD ROM/CD-RW combo drive into such a slim space, the result is a machine with the all-business feel we've come to expect from IBM, but in a slim, lightweight package.

Graphics performance was mediocre. The ATI Mobility Radeon 7500 had many halting moments with high frame-rate scenes in a Star Wars: Jedi Knight II 3-D game at the highest resolution setting, while the Sony V505 handled the same scenes with nary a hiccup.

Power management was impressive. The T40 showed a 150-minute DVD movie, and still had 27 percent battery power left -- enough to show another hour of movies, or do more than an hour of office work, since that is easier on the battery than watching a DVD.

By my count, that battery performance makes the T40 good for a half-day of office work on a single charge, roughly four hours. With the optional extended battery with 50 percent more life, that becomes six hours. If you choose to purchase IBM's latest docking station, the Dock II, you also get a half-size PCI slot, two PC Card slots, four USB 2.0 ports, DVI video connection, keyboard and mouse ports and an integrated power supply.

All that, and IBM has put a lot of thought into software that makes it easy for large businesses to manage a fleet of T40s, keeping them current, connected, secure and operational. It's a great example of how business will benefit from Intel's new Centrino technology. Just don't expect to play a lot of 3-D games on it.

When you first look at the Sharp Actius MM10, the latest addition to the company's line of notebook computers, it's easy to be impressed.

The company is giving consumers what they've been asking for in ultraportable computers -- small and lightweight. The MM10 weighs in at just over two pounds and measures just above the half-inch mark in thickness.

But when you ask for less, sometimes you get less. To make this machine as compact as it is, a built-in optical drive -- the CD or DVD drive -- had to go.

Instead, Sharp has included a mail-in coupon for a free external USB 2.0 CD-RW/DVD combo drive. And while an external drive isn't necessarily the best way to go, it does give users an option.

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The Star (Malaysia)

March 13, 2003

LENGTH: 479 words

HEADLINE: INTEL SEES FAST ADOPTION OF CENTRINO IN MALAYSIA

BODY:

INTEL Corp expects fast adoption in Malaysia of the Centrino mobile technology, its latest technology in mobile PC, said Intel Asia Pacific director for reseller channel operation Sophia Chew.

'The desire to be unwired is global, and would fuel the adoption of Centrino. Malaysians have in the past also been fast in adopting our technologies, such as the Pentium 4 and Pentium 4 mobile technology. We believe Centrino would be adopted at the same speed,' Chew said yesterday at the launch of Centrino in Kuala Lumpur.

'Unwiring the PC will fundamentally change the way people use computers, allowing them to communicate, be productive or be entertained whenever and wherever they want,' she added.

She said surveys by Gartner showed that wireless notebooks gave a 20% productivity gain and 29% reduction in mobile PC total cost of ownership, compared with the wired notebook.

Intel Centrino mobile technology has been designed specifically for wireless notebooks, and represents Intel's biggest focus since the launch of Pentium. It is supported by a worldwide marketing budget of US $300mil, said to be close to the cost of the original Pentium campaign a decade ago.

The Centrino brand is the bundling of three components – the new energy-efficient Pentium-M processor, the Intel 855 chipset and Intel Pro 802.11 Wireless Network Connection – that had been optimised, tested and validated to work together with mobility communication in mind. Centrino enables notebooks to be thinner and lighter, with an extended battery life and yet deliver outstanding mobile performance.

Intel chief executive officer Craig Barrett in a statement said: 'Our focus on integrating all the elements of mobility allows Centrino to deliver an outstanding wireless computing experience and marks the first we've put a combination of technologies under a single brand. This breakthrough innovation, together with industry-wide investment and WiFi hotspot deployments, brings computing and communications capabilities to businesses and consumers, adding new value to mobile PCs.'

As part of the introduction of Centrino, Intel has been working with leading wireless network service providers, hotels, airports, retail and restaurant chains worldwide to accelerate deployment and increase awareness of wireless public hotspots.

In addition to marketing and promotional activities, Intel developed the Wireless Verification Program, which includes engineering and testing of Intel Centrino with various access point devices, software combinations, hotspots locations and wireless service providers to verify they are all compatible, further enhancing the end-user's wireless experience.

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The Straits Times (Singapore)

March 13, 2003 Thursday

SECTION: TECH & SCIENCE

LENGTH: 451 words

HEADLINE: Wireless surfing on lighter laptops

BYLINE: Natalie Soh

BODY:

INTEL, the world's largest maker of computer processors, is betting that this year will become the year of wireless computing.

At news conferences throughout Asia, including one at the Singapore Expo in Changi, Intel executives showed off their ace - the Centrino chip that was built from scratch and packs new technology, which should mean thinner and lighter notebook computers that can also last longer.

The key feature of the Centrino technology is that it comes with built-in 'Wi-Fi' capability. This makes it much easier for users to access the Internet from wireless hot spots.

Now, you have to buy a separate Wi-Fi card - which can cost between $100 and $300 - slot it into your laptop, configure the software and connection options.

With Intel's Centrino technology, the laptop will be able to receive radio signals from the Wi-Fi base stations without hassle.

Mr Lai Yit Loong, regional sales manager of Intel Technology Asia here, said: 'Think of it as a light bulb versus a florescent tube. If you want the light bulb to perform better, get brighter, then it gets hotter.

'But we are using entirely new technology - like the florescent tube, that can become very bright but still remains cool to the touch.'

He added: 'Centrino is intelligent enough to send power to only where it's needed. So instead of lighting up your entire living room, it will light up where you're standing and your next five steps, using much less power in the process.'

When the processor uses less power, it generates less heat. So laptops can be thinner and lighter because makers don't have to worry about putting in heat sinks or making sure there is enough air flow around the processor to keep it cool.

Intel processors are already in 85 per cent of computers worldwide. But will Intel's big bet on mobile users and their need for wireless access in the new Centrino mobile technology pay off?

According to Mr Ian Bertram, vice-president of hardware and systems at Gartner Asia Pacific, an IT research and consultancy firm, the move, though bold, is a fairly safe bet.

'People have been talking about mobility for some time. We think by the end of 2004, 90 per cent of laptops will have some kind of integrated wireless capability.'

But the main stumbling block will be public perception, said Mr Bertram. Intel had, for the longest time, conditioned users to look at the raw speed that processors run. At 1.6 GHz, the new Centrino processor's top speed is slower than other laptop processors the company sells. 'So they have a little bit of public education and convincing to do there.'

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March 13, 2003

RDS-ACC-NO: 03737521

LENGTH: 121 words

HEADLINE: Versa S900 notebook computer available soon from NEC.

BODY:

TELECOMWORLDWIRE-13 March 2003-Versa S900 notebook computer available soon from NEC(C)1994-2003 M2 COMMUNICATIONS LTD http://www.m2.com

Computer manufacturer NEC Computers (UK) Ltd has revealed a new notebook PC with a 12.1-inch XGA TFT screen and Intel's Centrino Mobile Technology for in-built wireless capabilities.

Also included in the Versa S900 is 256MB DDR SDRAM, up to 60GB hard drive, an ATI Radeon 9000 graphics card with 32MB DDR SGRAM, internal Fast Ethernet, a 56k modem and a VGA adapter.

NEC has included a one-year pick up and return warranty as well as an Intel Pentium M processor and an Intel 855 chipset.

The Versa S900 will be available in the UK from April 2003 for the price of GBP999+VAT.

TYPE: Journal; Fulltext

JOURNAL-CODE: TELECOMW

LOAD-DATE: March 14, 2003

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TELEGRAM & GAZETTE

March 13, 2003 Thursday, ALL EDITIONS

SECTION: BUSINESS;

Pg. E1

LENGTH: 470 words

HEADLINE: Hudson plant plays a key role in Intel's new wireless product

BYLINE: Jim Bodor

DATELINE: HUDSON

BODY:

- The 2,500 Intel Corp. employees who work at the company's Fab 17 chip-making plant in Hudson are contributing a key part to some much-anticipated wireless technology announced by the company yesterday.

Intel yesterday unveiled its Centrino mobile technology, a processor and related products that allow laptop computers to connect to the Internet wirelessly in certain locations.

Hudson's Fab 17 is the company's only plant that makes the new Pentium M chips used in the Centrino technology.

Hudson-based engineers also worked closely with a Centrino design team in Israel to develop the product, said Patrick G. Ward, spokesman for Intel in Hudson.

"We are the lead site for these Pentium chips, and we worked with the design center in Israel on this," said Mr. Ward. "We're playing a big role."

Notebook personal computers that use the Centrino mobile technology are available from such manufacturers as Hewlett-Packard Co. and IBM Corp. at prices that begin at $1,399. Computers that include the technology are marked with a Centrino logo and the "Intel Inside" mark.

The computers can access the Internet at "hot spots," locations where wireless Internet hubs have been established to allow for wireless Web surfing.

McDonald's Corp. on Tuesday agreed to offer the service at 10 restaurants in New York with Cometa Networks Inc., a wireless provider established earlier this year by Intel, AT&T Corp. and IBM.

For the next three months, McDonald's will give customers an hour of wireless Internet access in its restaurants with the purchase of a combination meal. After that, customers will have the option of paying $3 for another hour online or buying another meal.

Borders Group Inc. also said on Tuesday that it will help market Centrino by putting signs in stores to let customers know that its hot spot network works with Centrino. The Marriott hotel and Starbucks coffee chains also have agreed to promote and offer the wireless mobile networks needed for Centrino.

In Worcester County, Intel lists the Beechwood Hotel in Worcester and the Sierra Suites hotel in Westboro as hot spots, though officials at both hotels were unfamiliar with the new technology yesterday.

Intel said it is working to certify thousands of such locations around the country, and that it will take time to bring all of them into use.

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March 12, 2003 Wednesday

SECTION: Domestic, non-Washington, General News

LENGTH: 510 words

HEADLINE: Intel, AMD launch long-anticipated chips for "Wi-Fi"

DATELINE: NEW YORK, March 12

BODY:

High-tech giants Intel and AMD took a step Wednesday to "unwire" the Internet with the launch of new chip technology aimed at boosting wireless Internet, or "Wi-Fi."

The new chips for portable computers will make it easier to access the Internet at high speed without wires within range of access points or "hot spots" at cafes, hotels, restaurants or elsewhere.

Intel launched its Centrino mobile technology that integrates wireless capability into laptop PCs.

Rival chipmaker AMD also launched its new line of chips for mobile computers called Athlon XP-M, which offers similar advantages.

The new systems offer hope for an ailing computer industry desperately in search of a new growth engine.

Thousands of PC users already use Wi-Fi, but the new technology will eliminate the need for special plug-in cards and allow for longer battery life. At the same time, PC makers and wireless firms are stepping up efforts to expand and promote networks.

Intel's Centrino is a new package that includes a microprocessor dubbed Pentium-M, formerly known as Banias, and other technology for high-speed wireless Internet access. It uses radio frequency to connect to the Internet within a few hundred meters (yards) of an access point.

AMD processors will be featured in notebook computers weighing less than two kilograms (four pounds), the company said.

Meanwhile, Intel has been enlisting partners and investing in the technology for wireless networks in a move to make Wi-Fi more accessible, thus encouraging people to buy new Wi-Fi-enabled PCs. It has signed up partners including McDonald's restaurants and Hilton hotels.

Intel's catchword for the new system of Internet access is "unwired."

"Unwiring the PC will change the way people use computers, allowing them to communicate, be productive or be entertained wherever and whenever they want," said Craig Barrett, Intel's chief executive officer.

"This breakthrough innovation, together with industry-wide investment and Wi-Fi hotspot deployments, brings new computing and communications capabilities to businesses and consumers, adding value to mobile PCs."

Major PC makers simultaneously released new mobile computers integrating the new technology.

Dell launched its Inspiron 600m notebook computer with Intel's Centrino system while offering buyers 30 days of access with wireless provider Wayport.

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Global News Wire - Asia Africa Intelligence Wire

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Bernama The Malaysian National News Agency

March 12, 2003

LENGTH: 290 words

HEADLINE: INTEL WORKS WITH WIRELESS NETWORK SERVICE PROVIDERS FOR NEW GEN MOBILE PC

BODY:

KUALA LUMPUR, March 12 (Bernama) -- Intel Corporation, a leading manufacturer of computer, networking and communications products has been working with leading wireless network service providers as part of its introduction of its Intel Centrino mobile technology.

However, the company declined to give further details of the companies it is negotiating with in Malaysia.

A special announcement will be made, said Sophia Chew, the director of Reseller Channel Operations Asia Pacific for Intel Technology Asia Pte Ltd, at an event here to introduce the new generation of mobile personal computer.

In addition, it has been working with hotels, airports, retail and restaurant chains worldwide to accelerate deployment and increase awareness of wireless public hotspots.

For its marketing stratey, she said Intel has developed the Wireless Verification Program such as engineering and testing of Intel Centrino with various access point devices, software combinations, hotspots locations and wireless service providers to verify their compatibility.

The company expects to verify more than 10,000 hotspots worldwide by the end of the year.

It has also created a standardized worldwide Wireless Identifier Program that includes signs to help users identify the hostspot.

Last year, the company created a US $150 million fund to invest in companies that are helping to expand and accelerate the infrastructure and capabilities required to make wireless computing ubiquitous, said Sophia.

Intel Centrino mobile technology includes a new mobile processor, related chipsets and 802.11 wireless network functions that have been optimised, tested and validated to work together.

System pricing will start at US $1,399.

JOURNAL-CODE: FBNM

LOAD-DATE: March 13, 2003

One Great Design:

Fujitsu LifeBook S Series Notebook

Measuring just 11.5 inches wide by 9.3 inches deep by 1.36 inches high and weighing a mere 4.4 pounds, the LifeBook S Series notebook may be small in demeanor, but it makes up for it in features. Fujitsu has managed to incorporate a modular bay, a brilliant 13.3-inch XGA TFT display and a large, comfortable keyboard into a "thin & light" design. The modular bay accommodates a modular DVD/CD-RW, DVD, CD-ROM, second bay battery or weight saver.

Integrated wireless LAN (IEEE 802.11b) capabilities, in addition to its existing modem and Ethernet ports, offer mobile professionals connectivity in any type of computing environment. The LifeBook S6000 notebook also features an IEEE 1394 and two USB 2.0 ports.

For added security, Fujitsu has equipped the LifeBook S6000 notebook with a built-in Smart Card Reader(3) and a pre-boot data Security Panel. The pre-boot data Security Panel supplies more than 800,000 possible passwords to help ensure the proper user's data will be safe and secure. The built-in Smart Card Reader(3) provides users a wide range of applications, such as secure online transactions, personalized authentication services, access to personal data and "e-cash" storage options.

To simplify IT managers' inventory control and lower the cost of ownership, the bay devices of the LifeBook S6000 are cross compatible with the LifeBook S2000, LifeBook P2000 and LifeBook E Series notebooks. Users can carry the particular LifeBook notebook that suits their individual needs and share less often used devices, such as the second bay battery, with coworkers.

A lightweight, one-click port replicator is also a popular accessory for the LifeBook S Series notebook. This feature expands the number of ports available and allows the user to achieve better cable management.

The Fujitsu LifeBook S6000 notebook comes preinstalled with Microsoft Windows XP Home Edition, Windows XP Professional or Windows 2000 Professional and a 60GB, 40GB or 30GB hard drive(2). Users can choose among the recommended configurations or customize their notebook using the Fujitsu Configure To Order (CTO) program. All Fujitsu notebooks can be purchased through the company's retail and reseller channels(4) as well as at www.fujitsupc.com or 1-877-FPC-DIRECT.

Service and Support

The LifeBook S6000 notebook is backed by a three-year or one-year International Limited Warranty for U.S. and Canadian customers. The International Limited Warranty includes technical support, 24 hours a day, seven days a week(5). In addition, users can add Fujitsu Premium Care Service Plans, which include an on-site service or a screen protection plan.

About Fujitsu PC Corp.

Headquartered in Santa Clara, Calif., Fujitsu PC Corp. is a wholly owned subsidiary of Fujitsu Limited and the leading provider of ultra-mobile computing solutions. Fujitsu PC Corp. delivers high-performance mobile computing solutions for the North American market, including a wide range of LifeBook notebooks and Stylistic(R) tablets. Fujitsu PC Corp. emphasizes leading-edge technology, exceptional product quality, user comfort and productivity, and outstanding customer service as primary competitive advantages. More information on complete line of Fujitsu mobile computing solutions is available at www.fujitsupc.com or 1-877-FPC-DIRECT.

About Fujitsu

Fujitsu is a leading provider of customer-focused IT and communications solutions for the global marketplace. Pace-setting technologies, high-reliability/performance computing and telecommunications platforms, and a worldwide corps of systems and services experts make Fujitsu uniquely positioned to unleash the infinite possibilities of the broadband Internet to help its customers succeed. Headquartered in Tokyo, Fujitsu Limited (TSE:6702) reported consolidated

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March 12, 2003, Wednesday

DISTRIBUTION: Business Editors/High-Tech Writers

LENGTH: 1179 words

HEADLINE: HP "Connects" Business with New Wireless-ready Notebook PC; Compaq Evo Notebook Delivers Secure, Flexible Wireless Connectivity with Leading Performance

DATELINE: PALO ALTO, Calif., March 12, 2003

BODY:

HP (NYSE:HPQ) today unveiled the Compaq Evo N620c, a wireless-ready notebook PC for business customers looking for greater mobility with no sacrifice in performance. The notebook delivers up to six hours of battery life, has a lightweight design and offers flexible, secure wireless connectivity -- all fitting the mobile lifestyle of business users.

Featuring the new Intel(R) Pentium(R)-M processor also used in the Intel Centrino mobile solution, the Compaq Evo N620c delivers outstanding power and performance. The Intel Pentium-M processors deliver up to 70 percent better battery performance versus Intel Pentium 4-M processors with equivalent clock speeds.(1)

HP is focused on delivering the latest integrated connectivity technology, including gigabit Ethernet and wireless LAN, to provide customers with optimized connectivity today and the promise of investment protection as network infrastructures evolve over time.

"Business users want technology that makes wireless communication easy, reliable and secure while still allowing them to stay productive for long periods of time," said Kevin Frost, vice president of worldwide notebook marketing, HP Personal Systems Group. "HP understands the needs of the connected enterprise and is designing notebooks that can be implemented in IT environments without the risk of obsolescence or incompatibility."

As part of the company's efforts to deliver the best return for customers' IT investments, HP offers many cost-saving features with all "c"-class business notebooks, including long managed lifecycles for consistent product roll-outs, stable images, system management, common "multibay" optional components, common docking, and flexible, wireless connectivity delivered globally. The Compaq Evo N620 notebook is backed by HP's world-class global services network.

HP also ensures support for important security standards that address wireless LAN security concerns. Current HP wireless business notebook PCs, including the Compaq Evo N620c, provide support for Cisco-EAP (Cisco-Leap), an industry standards based approach to help ensure only authorized users are able to connect to a Cisco wireless network.

HP integrated wireless LAN solutions feature support for a range of industry-standard security building blocks that includes 128-bit WEP data encryption and the 802.1x standard, additionally addressing customer needs for secure wireless user authentication.

The Evo N620c notebook also supports the HP Protect Tools Smart Card Security Manager with optional HP PC Card Smart Card reader. This security solution allows the use of smart card technology to protect against unauthorized users turning the computer on and accessing data.

Future HP business notebooks with integrated wireless LAN, including new Intel Centrino-based notebooks from HP, also are expected to be certified under the recently announced Cisco Compatible Extensions program. Certification will ensure that HP notebooks have been tested to provide interoperability with Cisco wireless networks and a path to future enhancements.

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URL: http://www.businesswire.com

LOAD-DATE: March 13, 2003

further enhancing the end user's wireless experience. Intel's efforts worldwide have already resulted in thousands of verified hotspots. The company expects to verify more than 10,000 by the end of the year.

Intel has also created a standardized worldwide Wireless Identifier Program that includes signs to help users identify where they can connect wirelessly. The program informs users that a particular service provider's network has been verified with Intel Centrino mobile technology. In addition, the company last year created a $150 million fund to invest in companies that are helping to expand and accelerate the infrastructure and capabilities required to make wireless computing ubiquitous.

The Technology Inside

The technology represented by the Intel Centrino mobile technology brand combines the Intel(R) Pentium(R) M processor, the Intel(R) 855 Chipset Family and the Intel(R) PRO/Wireless 2100 Network Connection. All components were optimized, validated and tested to work together with mobility in mind.

The processor is based on a new mobile-optimized microarchitecture that delivers higher performance and lower power consumption to enable longer battery life in today's mainstream systems. Key features include: Micro-Ops Fusion, which combines two micro-operations into one, enabling it to execute faster and at lower power; Advanced Branch Prediction -- a new implementation technique -- to help to reduce overall latency in the system contributing to higher performance at lower power; and the Dedicated Stack Manager, which reduces the overall number of micro-operations required to generate higher performance at lower power.

The processor is manufactured using Intel's industry-leading 0.13-micron process technology and consists of 77 million transistors. It also includes a 400 MHz power optimized system bus, a 1 MB low-power L2 cache (which turns off parts of the high-speed memory when it's not needed), and technology to reduce overall platform power consumption. It also provides support for Enhanced Intel(R) SpeedStep(R) technology with multiple voltage and frequency operating points, and Streaming SIMD Extensions II.

The Intel 855 chipset family includes two new chipsets developed exclusively for the mobile market segment, the 855PM supporting discrete graphics and 855GM with integrated Intel(R) Extreme Graphics 2 technology. The new chipsets also support Enhanced Intel SpeedStep technology, Deeper Sleep Alert State and an internal timer that automatically turns off the chipset clock when the chipset is inactive. The 855GM chipset also includes a low-power graphics power management mode. Both chipsets include a 400MHz processor system bus and support for up to 2GB of DDR 266 memory, along with support for USB 2.0 and Intel's I/O Hub Architecture.

The Intel PRO/Wireless 2100 Network Connection has been designed and validated to connect easily to 802.11b Wi-Fi certified access points. It also supports advanced wireless LAN security including 802.1x, WEP and VPN technologies, and will be software upgradeable to support WPA. In addition, through strategic collaboration with Cisco Systems, Intel Centrino mobile technology will support Cisco* LEAP and will be software upgradeable to Cisco* Compatible Extensions.

The Intel PRO/Wireless 2100 network connection has also been verified with leading VPN (virtual private network) suppliers. The wireless card is also available with Intel(R) PROSet Software, which offers many ease-of-use and low power features. It also supports an Intel developed technology that reduces interference with 802.11 signals and certain Bluetooth(TM) devices.

Measuring Mobile Performance And Battery Life

As measured by MobileMark(TM) 2002, the industry's first benchmark testing a combination of battery life and performance, Intel Centrino mobile technology-based systems can deliver up to five hours of battery life or more,* compared to about four hours on mobile Intel(R) Pentium(R) III processor-M-based system and about 3 hours on mobile Intel(R) Pentium(R) 4 processor-M-based systems. On the same benchmark, Intel Centrino mobile technology offers 41 percent faster performance on multitasking office productivity applications compared to a mobile Intel Pentium III processor-M 1.2 GHz, and a 15 percent improvement compared to the mobile Intel Pentium 4 processor-M 2.4 GHz system.

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March 12, 2003, Wednesday

DISTRIBUTION: Business Editors/High-Tech Writers

LENGTH: 1439 words

HEADLINE: Toshiba's Full Suite of Intel Centrino Mobile Technology Based Notebooks Give Mobile Professionals Advanced Performance and Increased Productivity

DATELINE: IRVINE, Calif., March 12, 2003

BODY:

Toshiba First to Offer Intel Centrino Mobile Technology-Based Notebook in Retail Stores

Toshiba's Computer Systems Group (CSG), today announced a full suite of Intel(R) Centrino(TM) mobile technology-based notebooks for mobile professionals who value advanced performance, integrated wireless LAN capability and extended battery life benefits.

Toshiba's Satellite Pro(R) M15 represents the first Intel Centrino mobile technology notebook in retail stores. In addition, the new Satellite Pro M10, Tecra(R) M1, Tecra S1 and Portege(R) R100 notebooks offer corporate customers and traveling professionals the latest technology designed for optimal productivity through increased battery life performance and wireless connectivity.

"Intel's development of the Intel Centrino mobile technology architecture strengthens Toshiba's wireless initiatives and directly compliments our strong focus on innovative mobile design," said Oscar Koenders, vice president product marketing and worldwide product planning for Toshiba CSG. "Our new products are a direct result of our collaboration with Intel to drive the proliferation of mobile and wireless computing, while bringing Toshiba customers exceptional performance and extended battery life to enhance the notebook experience and increase productivity."

"Intel and Toshiba share a strong vision to bring new mobile and wireless computing choices to mainstream consumer and business customers," said Anand Chandrasekher, vice president and general manager, Intel's Mobile Platforms Group. "Our combined efforts provide PC users with the notebook devices that allow people to work and play remotely, wirelessly and in a variety of usage scenarios."

Satellite Pro M10/15 Combines Consumer and Professional Features

The newly designed Satellite Pro M10/15 Series adds the perfect balance of multimedia features and style for both work and home use. It combines Intel Centrino mobile technology, 15-inch diagonal display, NVIDIA(R) GeForce4(TM) 420 Go graphics, Harman/Kardon(R) stereo speakers, a DVD-ROM/CD-RW multi-function drive, convenient CD and DVD playback buttons and a swappable Slim SelectBay(TM) for added flexibility and expansion capabilities.

It also includes dual mouse control (Accupoint(TM) pointing device and touchpad) functionality, one-touch TV-out button to easily connect to a television with a touch of a button, Secure Digital(R) slot and an i.Link(TM) (IEEE 1394) port and featuring 5.5 hours of battery life(a) with one battery and up to nine hours with two batteries.

Tecra M1 Series Designed For Corporate Customers and IT Managers

Weighing only 5.7 pounds and featuring more than six hours of battery life(a) (10 plus hours with optional second battery), the Tecra M1 Series incorporates Intel's Centrino mobile technology and provides customers with advanced power, battery optimization and wireless connectivity. Meanwhile, IT managers will enjoy the Tecra-family benefits of a stable, configurable notebook with a long product lifecycle.

The Satellite Pro M15 is available immediately at Toshiba's retail distribution channels including computer superstores and consumer electronic stores. The Tecra M1 and Portege R100 are available via corporate direct, shoptoshiba.com, mail order and traditional distribution channels.

The Tecra S1 is available via corporate direct and traditional distribution channels. The Satellite Pro M10 is available via shoptoshiba, mail order and traditional distribution channels.

-- Satellite Pro M15 $1,999 ESUP

-- Satellite Pro M10 $2,079 ESUP

-- Tecra M1 $2,154 ESUP

-- Tecra S1 $1,979 ESUP

-- Portege R100 $2,199 ESUP

Note (a): Battery life may vary depending on applications, power management settings and features utilized. Recharge time varies depending of usage. Battery may not charge while a computer is consuming full power. After a period of time, the battery will lose its ability to perform at maximum capacity and will need to be replaced.

This is normal for all batteries. To purchase a new battery pack, see your accessories information that shipped with your computer or visit www.toshibaaccessories.com.

Note (b): GB means 1 billion bytes

Note to Editors: Satellite Pro, Tecra, Portege, SelectBay and ConfigFree are registered trademarks of TAIS. Intel and Centrino are registered trademarks of Intel Corp. All other product, service and company names are trademarks, registered trademarks or service marks of their respective owners. Central Processing Unit (CPU) performance may vary depending on conditions; see specifications for details.

Information in news releases including without limitation product prices, specifications, content of services, and contact information, is current on the date of the news announcement, but is subject to change without notice.

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points limited. System performance measured by MobileMark(x) 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. See http://www.intel.com/products/centrino/more-info for more information.

CONTACT: Robert Manne, Cohn & Wolfe, (416) 924-5700 x4066, robert-manne(at)ca.cohnwolfe.com; Doug Cooper, Intel of Canada, (416) 213-4122, doug.cooper(at)intel.com

LOAD-DATE: March 13, 2003

Tecra notebook computers give professionals flexibility and expansion options with three USB 2.0 ports, common docking and accessories and DVD-RW option.

The new Tecra M1 and Tecra S1 notebook computers incorporate a wide range of integrated communications including infrared, data/fax modem, a 10/100 Ethernet wireless LAN (802.11a or a/b dual-band support option), and integrated Bluetooth(TM). All Tecra M1 and S1 notebook computers include Windows(R) XP Professional.

Incorporating Intel(R) Centrino(TM) mobile technology into Toshiba notebooks allows lower voltage processors requiring fewer gigahertz to deliver greater performance thereby improving processing performance by 10 per cent and enabling longer battery life by 75 per cent over the Intel Pentium 4 processor.

Tecra M1 Series

Tecra M1 notebook computers address corporate user's needs for long-term notebook computers and wants for the most sophisticated technologies by offering the best total computing experience as well as superior corporate investment protection.

Weighing just 5.5 pounds, these two Tecra models provide professionals with state-of-the-art mobile technology in a durable, lightweight design. The Tecra M1 models feature up to 10.2 hours of battery life and optional DVD-burning capability.

The Tecra M1 is available with a 1.6 GHz mobile Intel(R) Pentium(R) Processor-M up to 60 GB HDD (expandable up to 120GB on select models) for increased power and speed. Five ways of connectivity including wireless LAN for enhanced communications as well as integrated gigabit Ethernet support (10/100/1000).Other features include three USB 2.0 ports, Secure Digital (SD) slot, and 32MB Trident XP4m32 Graphics Processing Unit.

Tecra S1 Series

The Tecra S1 notebook computers combine the flexibility of mobile computing with superior performance for mobile professionals and knowledge workers.

The Tecra S1 series provides mobile productivity with 1.5 GHz mobile Intel(R) Pentium(R) Processor-M up to 40 GB HDD (expandable up to 100GB on select models) and up to 8.5 hours of battery life available. Integrated connectivity includes wireless LAN for enhanced communications capabilities. The Tecra S1 notebook computers also offer a 1.4 GHz version with a choice of 15-inch or 14-inch TFT active matrix colour LCD display, ATI Mobility Radeon 9000 Graphics Processing Unit, two USB 2.0 ports and fits compactly in a sleekly designed casing.

Pricing and availability

The Tecra M1 series carries a suggested list price (SLP) starting at CDN $3,599 to $3,999 and the Tecra S1 carries an SLP starting at CDN $2,599; $2,999, and $3,299. All computers are available through Toshiba retail partners or directly through www.shoptoshiba.ca.

Toshiba of Canada Limited

Toshiba of Canada is wholly owned subsidiary of Toshiba Corporation, one of the world's largest integrated manufacturers of electronic products and semiconductors. Toshiba of Canada serves the business, consumer, and medical markets with notebook computers, facsimiles, telephones, DVDs, VCRs, televisions and medical diagnostic equipment. Toshiba of Canada Information Systems Group is Canada's leading provider of mobile computer systems. Headquartered in Markham, Ontario, Toshiba has offices in Vancouver, Calgary,

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March 12, 2003

LENGTH: 431 words

HEADLINE: CHUNGHWA, INTEL BOOST CENTRINO

BODY:

Chunghwa Telecom, Taiwan's leading telecommunications operator, yesterday announced its partnership with Intel to establish Asia's first Centrino Mobility Technology Zone inside the Taipei International Convention Center (TICC).

Centrino, which Intel will officially launch today, is a wireless LAN (WLAN)-enabled notebook PC platform supported by Intel's Pentium 4 M processor, chipsets and built-in WLAN module. The mobility technology zone will have Centrino-based notebook computers with wireless Internet connections via WLAN set-ups provided by Chunghwa.

The two companies, both leaders of their fields, will also work together to offer more WLAN "hot spots" throughout Taiwan, with Chunghwa taking charge of setting up WLAN access points to allow wireless Internet access in a wide range of public spaces and Intel providing certification processes and assistance in marketing.

"From now on, notebook computer users can have wireless Internet access no matter in conference rooms, coffee shops or airports," said Kelly Wu, Intel's Taiwan country manager. "The convergence of computing and mobility will be a trend for the future."

Lu Shyue-ching, Chunghwa president, said the company has already set up some 100 WLAN hot spots X over 20 of which are Intel-certified X throughout Taiwan.

He said Chunghwa signed up about 14,000 home and business WLAN users last year and hopes to double that number and shoot for 30,000 users this year, Lu said.

The more than 20 Intel-certified hot spots X facilities with "Intel Centrino" and "Chunghwa WLAN" logos X include the Taipei City Government, TICC, the Grand Hyatt Hotel, the CKS International Airport and Sungshan Airport.

"We'll add more access points in schools, hospitals and other public spaces. It all depends on how fast the users will catch up. We've got everything ready," Lu said, adding WLAN users will either be charged on their account or will use it for free at hot spots partnering with Chunghwa.

Under a promotion starting today till Jun. 12, people visiting the mobility technology zone as well as Intel-certified hot spots will use the WLAN service for free.

Centrino will be a "must-have" feature for notebook computers in the future, according to Intel officials. Centrino-based laptops will have smaller sizes, more computing power, longer battery life and seamless wireless connections to the Internet.

Acer will simultaneously announce its Centrino laptop today with Intel, Wu said, adding other hardware manufacturers such as AsusTeK will follow suit by the end of the month.

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Global News Wire - Asia Africa Intelligence Wire

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CMPnetAsia.com

March 12, 2003

LENGTH: 578 words

HEADLINE: DUEL OF THE NOTEBOOK PROCESSORS: INTEL VS AMD

BYLINE: Jack Robertson

BODY:

Dueling processors is to be the theme today on both sides of the Atlantic, as both Intel and Advanced Micro Devices roll out chips for notebook computers. Intel on Wednesday is launching the Centrino brand very-low-power mobile processor/chipset/Wi-Fi suite of chips in New York City, with a bevy of PC makers showing notebooks featuring the Intel components.

And Advanced Micro Devices on Wednesday unveiled 12 new mobile processors at the CeBIT computer show in Hanover, Germany.

Although the big debut in New York City won't talk about it, the new Pentium M processor, formerly code-named Banias, is also available for mobile PCs connecting with third party vendor wireless LAN cards.

However, system firms won't be able to use the Centrino brand on their PCs unless they use the Intel Wi-Fi module -- a major inducement to share in Intel's $300 million promotion campaign behind Centrino.

Ironically the Centrino Wi-Fi doesn't use Intel-made parts, since Intel wasn't able to develop its own wireless LAN chips in time for the launch, according to analysts. Texas Instruments makes the MAC chip and Philips Semiconductor provides the radio chip.

The Pentium M at launch will only be supported by Intel's own 855 chipset, as previously reported by EBN. Intel has not yet licensed any third party chipset vendors for the new Pentium M, although negotiations with many firms are still ongoing.

The Pentium M processor unveiled as part of the Centrino brand comes in six speed grades from 900MHz to 1.6GHz. This compares with 2.4GHz frequency for the latest version of the existing Pentium 4M. Intel, which up to now has championed the frequency race of processors, now touts the Pentium M's higher performance and lower power over current faster processors.

The new mobile processor has a 400MHz quad-pumped front side bus, which is power optimized so only as much of the bus is used as needed at any one time.

The Pentium M has 1Mbyte of on-die L2 cache. The cache is divided into quadrants for greater power management. Only one segment of the cache can be powered at a time while others remain in a sleep mode.

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March 12, 2003, Wednesday
19:16 Central European Time

SECTION: Finance

LENGTH: 197 words

HEADLINE: Intel launches new mobile computer chip

DATELINE: San Francisco

BODY:

Chip-making giant Intel Corporation on Wednesday launched a new line of mobile computing chips that are likely to feature in many new laptop computers.

The Intel Centrino mobile processors include built-in wireless functionality to allowing computers to connect to so-called wi-fi networks for high speed access to the Internet.

The new line also enables extended battery life and thinner, lighter notebook designs, the company said.

"Unwiring the PC will change the way people use computers, allowing them to communicate, be productive or be entertained wherever and whenever they want," said Craig Barrett, Intel's chief executive officer in a statement.

Centrino-based computers are already available from leading suppliers with prices starting at 1,399 dollars.

The new technology is seen as a major boost for the development of wi-fi hot spots that will allow mobile users to wirelessly connect to the Internet. On Tuesday Intel announced a collaboration with fast- food giant McDonalds to start installing wi-fi access points in restaurants. According to industry analyst firm IDC, there will be more than 118,000 hotspots worldwide by 2005.

dpa ag

LOAD-DATE: March 12, 2003

Also on Wednesday, Fujitsu PC Corp, of San Jose, Calif., will unveil a new LifeBook S2000 notebook powered by a Low Voltage Athlon XP M chip. The thin and light notebook will weigh in at less than four pounds and will be 1.36 inches in height. The notebook, which is available now, will be the first AMD powered thin and light device available in the United States.

Fujitsu PC also will be at Intel's Centrino launch in New York on Wednesday. In an interview with eWEEK earlier this month, Fujitsu PC President and CEO Toshio Morohoshi said, "I am a firm believer that being tied to one vendor is not good." The company will begin shipping Intel based notebooks next month, Morohoshi said.

Intel's Centrino platform includes the Pentium M chip, formerly known as Banias, that is designed to conserve power and battery life in notebooks, including thin and light products. The chip's frequency will range between 900MHz and 1.6GHz. The platform also comes with the accompanying 855 chip set and an 802.11b Wi Fi wireless LAN module called the Intel PRO/Wireless network connection.

Transmeta's Astro chip, the TM8000, will include three new bus interfaces designed to increase the performance of notebooks using the processor, officials said Monday. Transmeta, of Santa Clara, Calif., is hoping that the new chip will compete with the Pentium M.

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LOAD-DATE: March 25, 2003

Mobile Orchestrator is based on Iona's Adaptive Runtime Technology (ART) framework, which is a modular architecture that provides the framework for distributed enterprise applications and services written in Java technology or C++ or supporting the Common Object Request Broker Architecture.

Iona had been working on an asynchronous Web services solution, and the Intel opportunity provided a perfect fit for the company's existing technology foundation and an opportunity to leverage its ART framework.

"You need a range of solutions, and behind it all is our infrastructure," O'Brien said. "ART is the underpinning of this effort and we've leveraged that infrastructure."

O'Brien said the types of applications the Mobile Orchestrator is well suited to include sales force automation and customer service and relationship enhancing solutions.

The company will focus on system integrators and value added resellers to take the product to market, O'Brien said. "We'll be selling this through a different group of people," he said.

Iona's Mobile Orchestrator will ship on March 21 and will run about $1,800 per CPU for the Server component, $1,500 per developer for the Studio component, and pricing for the Client component will be based on volume, O'Brien said.

Latest Centrino News:

Search for more stories by Darryl Taft

LOAD-DATE: March 25, 2003

meantime, I will continue to read magazines at Borders, get my coffee at Starbucks to go, and get to the airport extra early to ensure that I can pass security checks with my laptop.

Are you looking to log in to a wireless hot spot in your area? Let me know at francis_chu£ziffdavis.com

LOAD-DATE: March 25, 2003

AMD's new mobile processors for thin and light notebook PCs are priced from $71 to $147. New mobile processors for full size notebook PCs are priced from $87 to $246, all in 1,000 unit lots.

LOAD-DATE: March 25, 2003

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Financial Times (London)

March 12, 2003, Wednesday London Edition 1

SECTION: COMPANIES & FINANCE THE AMERICAS;

Pg. 30

LENGTH: 727 words

HEADLINE: Intel promotes the wanderers' dream: The group's latest offering will allow laptop users to go online from almost anywhere, writes Tom Foremski:

BYLINE: By TOM FOREMSKI

BODY:

If Intel has its way, you and your laptop will be able to connect to the internet in the most unlikely places - poolside, at the airport gate, or in a cafe 2 5 3 2 6 0 all at super-fast speeds.

Today, Intel, the world's largest chipmaker, officially launches its Centrino family of laptop chips amid much fanfare in chilly New York City.

Bare Naked Ladies, the Canadian musical group, will provide the entertainment once leading PC makers have extolled the virtues of the Centrino microprocessors and related chips that provide longer battery life and easy access to fast wireless broadband connections.

For Intel, Centrino and wireless broadband, also known as WiFi, have become almost an obsession. Intel's intense focus on WiFi represents a big bet on a technology it believes will turn round not only its own moribund revenues but also revitalise the weak PC and communications sectors.

"Centrino is second only to the introduction of the Pentium," said Andy Grove, chairman of Intel, recently, referring to its main Pentium PC chip family.

Intel is putting its money where its mouth is. It has earmarked Dollars 300m in promotional money to push Centrino.

But this is just the tip of the iceberg. Intel is investing more than Dollars 150m in wireless start-ups, spending hundreds of millions of dollars in research and development, plus pouring money into partnerships around the world to create thousands of "hotspots".

These are areas where users can access high-speed wireless broadband in public areas such as airports, pubs, cafes, hotels and bookstores.

"We've looked at how much it would cost to cover the US in WiFi," says Sean Maloney, head of Intel Communications Group.

And the answer? "About Dollars 2bn-Dollars 3bn," he says, or about the price of one chip factory.

This shows how relatively inexpensive it would be to build a national infrastructure of hotspots, compared with the tens of billions of dollars the mobile communications companies have spent to build nationwide networks and the billions of dollars for licences.

In more densely urban areas, such as London or New York, the cost could be less than Dollars 100m.

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Global News Wire - Europe Intelligence Wire

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March 12, 2003

LENGTH: 654 words

HEADLINE: INTEL WILL DEMONSTRATE BIRDSTEP INTELLIGENT MOBILE IP AT INTEL CENTRINO(TM) MOBILE TECHNOLOGY LAUNCH

BODY:

Intel Centrino(TM) mobile technology launch March 12, 2003 Seattle/Oslo, Norway - March 12, 2003 - Birdstep Technology today announced that Intel will use Birdstep's Intelligent Mobile IP software client in the presentation of the new Intel Centrino(TM) mobile technology launch in New York, London, Beijing and Tokyo. Intel Centrino mobile technology combined with Birdstep's Mobile IP technology will illustrate how important roaming is between different networks. Intelligent Mobile IP software enables secure and continuous connectivity of mobile devices through any network regardless of whether it's a wired connection, such as DSL or Ethernet, or a wireless one, such as wireless LAN (WLAN), Bluetooth or GSM/GPRS cellular systems. The Birdstep Intelligent Mobile IP Client supports existing standards and legacy network infrastructures and enables the mobilization of corporate VPNs. The solution protects a company's VPN investment and ensures that the company's security policies are enforced. Network administrators can rest assured that their existing VPN solution remains in full control of all external access to the corporate intranet. Intel Centrino mobile technology is the new brand name for Intel's upcoming wireless mobile computing technology, the new mobile processor and wireless networking capability marks the first time Intel has combined these technologies. With Intel Centrino mobile technology, you won't need to study a technical manual or bring along special equipment to connect on the go. That's because Intel is working with hardware and software developers, and wireless services providers, to deliver a reliable and integrated wireless mobile computing experience.

"Birdstep's Mobile IP software allows users of laptops, PDAs and other mobile devices to seamlessly connect and re-connect when an established connection breaks and we are excited that Intel has chosen to show our Mobile IP client at the Intel Centrino mobile technology launch," said Hans-Arne L'orange chief executive officer, Americas, of Birdstep Technology. "This shows that Birdstep has the technology leadership to deliver a reliable handover between different access technologies." About Intel Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom. About Birdstep Technology Birdstep Technology Inc. was founded in Oslo, Norway in 1996 and is traded on the Oslo Stock Exchange (OSE) under ticker "BIRD". The company has approximately 70 employees in Oslo and Seattle. Birdstep's small footprint, high performance database technologies combined with its wireless roaming and access software enables companies to build innovative solutions for embedded systems and the Mobile Internet. Named a 2002 Comet Award winner by Communication Systems Design magazine, Birdstep makes your information accessible anytime, anywhere, on any device and on any infrastructure. For more information, visit www.birdstep.com. Birdstep Contacts: Terje Andersen CEO Birdstep Technology +47 97950707 Hans-Arne L'orange CEO Birdstep Technology Americas +1(425) 220-5260 Contact: Jenny Gilcrest The Ardell Group (858) 792-4974 jenny£ardellgroup.com Safe Harbor Statement - This news release contains forward-looking statements, including statements that are subject to certain risks and uncertainties, including, but not limited to, those associated with unpredictability and volatility of the price of the Company's Common Stock, the performance of and conditions in the Norwegian and world financial markets, the policies and actions of the Norwegian and other governments, and the general political, economic and business conditions in Norway and elsewhere. Actual results could differ materially, as a result of such factors, from those set forth in forward-looking statements.

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March 12, 2003 Wednesday

LENGTH: 1897 words

HEADLINE: IBM ThinkPad: Undisputed Mobile Computing Leadership With Three New Models; Fly 9.5 Hours From New York to Athens, Using a ThinkPad T40 the Entire Flight

DATELINE: Mar. 12, 2003; NEW YORK, NY; INTERNET WIRE

BODY:

IBM's completely redesigned flagship notebook computer, the ThinkPad T40, debuted today with industry-leading performance and new standards for battery life, portability, ergonomics and the most secure wireless access available on select models. IBM also announced two additional ThinkPad notebooks, the ultraportable ThinkPad X31 and new models of the ThinkPad R40.

"Customers already love the lighter weight, thinner size and extraordinary battery life of the newest IBM ThinkPads," said Steve Ward, senior vice president and general manager of the IBM Personal Systems Group. "Before our announcement today, we delivered these new ThinkPads to 620 customers. And what gets customers really excited about IBM's new ThinkPad notebooks is ease of use. It's a notebook that finds and connects to available networks by itself, can recover data lost to viruses, and requires 50 percent less IT support than other notebooks. In fact, these 620 customers could save more than $2 billion collectively deploying ThinkVantage Technologies throughout their enterprises."

All three new ThinkPad notebooks offer select models with numerous IBM ThinkVantage Technologies that improve security, provide choice and ease-of-use in wireless capabilities, and simplify PC "fleet management" for IT organizations. The technologies meet new requirements for flexibility, mobility, and dynamic reconfiguration of global organizations moving toward an on-demand business model. They are tools designed to help people and companies adjust to rapidly changing business circumstances.

Select models of the ThinkPad T40, X31 and R40 feature the new Intel Pentium-M processor together with enhanced IBM ThinkVantage Design to set new standards in mobility and battery life. In addition, select models of these new ThinkPad notebooks include Intel's Centrino mobile technology, providing wireless connectivity while helping to deliver high performance and extended battery life.

Providing the Ultimate Choice

A full 30 percent thinner than its T30 predecessor, the ThinkPad T40 has a travel weight of only 4.5 pounds (1) -- almost one-half pound lighter -- and measures about 1-inch thin (2). In addition to the models featuring Intel Centrino mobile technology -- which provide integrated WiFi wireless capability based on IEEE 802.11b -- several models offer a choice of integrated WiFi dual-band a/b wireless, Cisco Aironet Wireless 802.11b, or wireless-upgradable capability (3). When used with the IBM Embedded Security Subsystem available on select models, along with industry-standard wireless encryption, the T40 provides the most secure wireless computing environment in the industry. And another new model, the ThinkPad T40p notebook, offers high-performance graphics in a thin-and-light design -- an ideal alternative to a workstation that is optimized and certified to run some of the most demanding graphics applications.

IBM also today announced its newest ultraportable for the global mobile user, the ThinkPad X31. At approximately 1-inch thin and 3.6 pounds, it boasts the longest system battery life in the industry, at up to six hours (4) on select models. The ThinkPad X31's unique battery options also work with the system battery to deliver all-day computing for people who take their notebooks with them anywhere and everywhere, offering up to 11 hours of optional battery life. The X31 can work with the new optional X3 UltraBase with a new ergonomic design and an array of drive and battery expansion

service on-line (9). Another ThinkVantage technology, RapidRestore PC, provides one-button disaster recovery that can restore previously saved data, settings and applications after a software failure.

Pricing and Availability

The ThinkPad T40 notebook and the ThinkPad R40 notebook are available immediately through www.ibm.com. IBM personal computers are also available through select business partners. Prices for the ThinkPad T40 notebook start at $1,999, while prices for the ThinkPad R40e start as low as $949. The ThinkPad X31 notebook will be available on March 18 with prices starting at $1949. For more information, see www.ibm.com/thinkpad.

Notes ThinkPad, and ThinkVantage Technologies are trademarks or registered trademarks of International Business Machines Corporation.

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Prices do not include tax or shipping and are subject to change without notice. Reseller prices may vary.

1. Includes battery and optional travel bezel instead of standard optical drive in Ultrabay, if applicable; weight may vary due to vendor components, manufacturing process and options.

2. Thinness may vary at certain points on the system.

3. Can be wireless enabled with the addition of an optional wireless LAN Mini PCI Card. These systems are designed to operate only with wireless LAN Mini PCI options sold by IBM.

4. These model numbers achieved eTesting Labs, Inc's BatteryMark(TM) 4.0.1, or the Ziff Davis Media Inc.'s Business Winstone 2002 BatteryMark(TM) Version 1.0, Battery Rundown Time of at least the time shown. This test was performed without independent verification by the VeriTest testing division of Lionbridge Technologies, Inc. ("VeriTest") nor Ziff Davis Media Inc.; neither Ziff Davis Media Inc. nor VeriTest makes any representations or warranties as to these test results. Winstone is a registered trademark and BatteryMark is a trademark of Ziff Davis Publishing Holdings Inc., in the U.S. and other countries. A description of the environment under which the test was performed is available at ibm.com/pc/ww/thinkpad/batterylife. Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning and other customer preferences.

5. Claim based on IBM operating tilt/drop tests.

6. Based on IEEE 802.11a and 802.11b. This wireless LAN product has been designed to permit legal operation worldwide in regions in which it is approved. This product has been tested and certified to be interoperable by the Wireless Ethernet Compatibility Alliance and is authorized to carry the Wi-Fi logo.

7. Public network access limited; subscription and network access fees may apply.

8. Requires compatible wireless enabled options, sold separately.

9. Requires Internet access; not included. Multimedia available: http://www1.iwire.com/iwire/iwprd?id=051881

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LOAD-DATE: March 13, 2003

"For years people have been pining for batteries that don't die in the middle of a flight, and with Centrino, Intel combines better battery technology with better power-saving technology," said Warren Wilson, an analyst with Summit Strategies.

Giving the campaign a boost, a number of companies recently announced they would offer wireless access. McDonald's Corp. on Tuesday announced high-speed wireless access at several hundred restaurants in New York, Chicago and California by year's end.

Borders Group Inc. announced a similar program, with wireless access in more than 400 Borders Books & Music stores by this summer.

Some 80 Borders stores including more than a dozen in the San Francisco Bay Area have gone wireless. Stores in the Los Angeles area will be wireless by the end of this month.

Hilton Hotels & Resorts said it would offer hot spots in 50 Hilton hotels in the next 30 days. Last month Omni Hotels said it would offer free wireless access in 30 hotels this year.

LOAD-DATE: March 12, 2003

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March 12, 2003

LENGTH: 1233 words

HEADLINE: TOSHIBA
Toshiba introduces range of high performance wireless notebooks; Incorporating Intel's new Centrino Mobile Technology; Toshiba's new Intel Centrino Mobile Technology based notebooks give customers advanced performance and more options for wireless computing

BODY:

The Computer Systems Division of Toshiba Europe GmbH launches an extensive new mobile product range incorporating Intel's revolutionary Centrino mobile technology for customers who value advanced performance, integrated wireless LAN capability (IEEE 802.11b ready / 802.11a upgradeable) and extended battery life benefits. Toshiba is launching three new series - the Tecra S1, Satellite Pro M10 and Portege R100 - to offer corporate customers and travelling professionals the latest technology designed for optimal flexibility and productivity.

"As a leader in mobile computing Toshiba has moved quickly to incorporate Intel's Centrino mobile technology across the entire business notebook range. This has enabled us to reach new heights in mobile working with amazing battery life and integrated wireless connectivity," said Willem Poterman, general manager of Toshiba's European Computer Systems Marketing Division. "Our new products are a direct result of our collaboration with Intel to drive the proliferation of mobile and wireless computing, while bringing Toshiba customers exceptional performance and extended battery life to enhance the notebook experience and increase productivity."

"Intel and Toshiba share a strong vision to bring more wireless and mobile computing choices to mainstream and business customers," says Anand Chandrasekher, vice president and general manager, Intel's Mobile Platforms Group. "Our combined efforts provide PC users with the notebook devices necessary to work remotely, wirelessly and in variety of usage scenarios."

Tecra S1 Series: The finest combination of scalability and value in corporate computing

Toshiba's latest edition to the Tecra family, the Tecra S1, is designed to offer a stable platform with heavyweight performance and features in a robust and mobile platform.

The Tecra S1 will be available in a number of configurations featuring Intel Pentium M processors of up to 1.6GHz with 1MB of cache providing advanced power, battery optimisation and wireless connectivity.

Integration of the Intel 855PM chipset delivers corporate customers a stable, scaleable notebook with an easy-to-configure platform. Comfort, style and convenience are provided with a full-sized keyboard, a choice of 14-inch or 15-inch displays and ATI's powerful Mobility Radeon 9000 graphics processor provides extreme 3D and 2D performance. Integrated Wi-Fi (IEEE 802.11b ready / 802.11a upgradeable), fast infra red and Bluetooth options provide seamless connectivity. Toshiba's new Dual Pointing Device (AccuPoint II and Touch Pad) is now available for added functionality. A choice of optical drives is available with support for DVD-Multi for high capacity data storage. All this is covered with 3 years international warranty.

Satellite Pro M10 series: High-end mobile multimedia and affordability beautifully combined

The Satellite Pro M10 series adds the perfect balance of multimedia features and style for both work and home use. Intel Pentium M processors up to 1.6GHz, with 1MB cache, and dedicated NVIDIA GeForce4 420 Go graphics (32MB) offer a stunning combination of performance and advanced graphics. Also included are Powerful Harman Kardon stereo speakers for amazing audio, massive storage with hard drives up to 60GB as well as memory support for up to 2GB of DDR memory (when available).

LOAD-DATE: March 12, 2003

"Whether at work, in a restaurant, at an airport or hotel, Centrino mobile technology delivers the freedom and flexibility of being unwired."

Intel's Wireless Verification Program includes engineering and testing of the Intel Centrino mobile technology with network architecture that supportsvarious wireless access points, software combinations, hotspot locations, and wireless service providers to ensure they are all compatible, further enhancing the consumer's wireless experience.

In addition to McDonald's customers, this wireless service is also accessible to McDonald's employees. "This technology enables us to share information immediately with hundreds of mobile employees who are dedicated to serving our customers and our restaurants," said David Weick, chief information officer for McDonald's Corporation.

About McDonald's

McDonald's is the world's favorite restaurant, with more than 30,000 local restaurants serving 46 million people each day in 119 countries. Approximately 85 percent of all McDonald's restaurants worldwide are owned and operated by independent franchisees. More information about McDonald's is available at http://www.mcdonalds.com and for further details about this initiative and locations of participating restaurants, visit http://www.mcdwireless.com.

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

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Important note: Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. See http://www.intel.com/products/centrino/more_info for more information.

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PCMCIA

2 Type II or 1 Type III

Communication

RJ11 and RJ45 jack on basic units - 56K v.92 modem - 10/100 TX LAN

Built-in Intel Pro Wireless Network Connection 802.11b

Storage

60GB HDD

Power

First battery: 6-cell Li-Ion (4000mA)

First high capacity battery: 9-cell Li-Ion (6000mA)

Second battery for VersaBay: 6-cell Li-Ion (3300mA)

Operating System

Microsoft Windows XP Professional Edition

Software

Microsoft Internet Explorer, Norton Antivirus 2002,

Acrobat Reader 5.0,

Microsoft Word 2002 and Microsoft Money 2002

Security

Kensington Lock Hole

2 level password

Prices Start From

GBP 999 ex VAT

About NEC Computers (UK)

NEC Computers (UK) Limited, a division of NEC Computers International, supplies NEC servers, desktops and notebook computers, designed and manufactured for the business user. For the small to medium sized enterprise purchaser, NEC Computers (UK) Limited has distinguished itself from other direct operations by offering a true business partnership. The NEC philosophy is to ensure that the customer receives unbiased advice about requirements backed by trustworthy service and support. NEC Computers (UK) Limited operates throughout the UK and Ireland. With sales offices in Maidenhead and its own state of the art manufacturing facility in Livingston, Scotland, NEC Computers (UK) Limited is able to serve its customers with prime efficiency and speed. According to IDC, NEC Computers (UK) Limited was the third largest PC vendor in 2002 and achieved a higher growth rate than its major competitors. Throughout 2002 NEC continued to improve its market share and demonstrated growth of double the market average for notebooks and 6.5 times the market average for servers.

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March 12, 2003

LENGTH: 1661 words

HEADLINE: DELL
Dell delivers new family of innovative latitude notebook computers; Customer feedback drives "D-Family" innovation, stylish packaging

DATELINE: Bracknell, UK

BODY:

Dell(tm) announced a redesigned line of its award-winning Latitude(tm) notebook computers and docking solutions, incorporating advancements derived from two years of customer feedback.

The first two models, the Latitude(tm) D600 and Latitude(tm) D800, offer combinations of features and designs that include a Tri-Metal(tm) chassis and integrated wireless networking technology. Both can be paired with the D/View stand, which uses the notebook's flat-panel display as its primary monitor, saving space and cost for corporate customers.

"We've been working for two years with customers and IT managers to develop this new portfolio of notebooks for business users," said Martin Boyce, Enterprise General Manager, Dell UK Relationship. "Through direct customer feedback we've designed these notebooks to meet, and in many cases exceed, their specific needs, including innovations in form factor, features, materials and usability."

The new Latitude(tm) "D-Family" builds on the award-winning "C-Family" of Dell notebooks, which set the industry standard for commonality and compatibility of accessories, including docking, media modules and AC adapters. Introduced in 1997, the Latitude(tm) C-Family became the most popular selling notebooks worldwide, holding the No. 1 position in medium and large business notebook sales since 1999. Dell will continue to sell C-Family notebooks for customers this year during a transition to the D-Family products.

The moonlight silver notebooks feature user-friendly design elements that will be common across the new product line. An improved layout provides easy access to the side module bay, and the smart-port location simplifies cable management. Each D-family notebook will also ship with QuickSet, a customisable software application that allows users to easily control power management settings, monitor system status, enlarge icons for high-resolution displays, and more.

For desktop functionality and convenience, the D-family notebooks will utilize the D/Port advanced port replicator or D/Dock expansion station, as well as the new space-saving D/View notebook stand. This unique docking station takes advantage of the new bottom docking port, allowing users to elevate the notebook display to eye-level and making an external monitor optional.

The D/View notebook stand was developed in collaboration with customers, including a Fortune 500 company in the automotive industry. Over the past two years, Dell met with a variety of customers to gather feedback and demonstrate progress. End users and IT mangers attended customer advisory councils at Dell's Round Rock, Texas, headquarters, or discussed the products and ways to reduce costs in deploying them during travelling "tech tours" in major cities around the world.

Based on customer requirements for investment protection and "future-proofing," D-Family notebooks include integrated smart card and Gigabit Ethernet capability, dual-band (2.4GHz and 5GHz) wireless antennas and optional Bluetooth connectivity. Both the Latitude(tm) D600 and the Latitude(tm) D800 feature come equipped standard with Intel's Centrino(tm) Mobile Technology, featuring Intel's new Pentium(tm) M processor, which delivers high performance with lower power requirements, contributing to longer battery life, and Intel's PRO wireless 2100

* Standard Wi-Fi capability with choice of integrated Dell TrueMobile 1300 wireless 802.11b/g or Intel PRO wireless 2100 802.11b miniPCI card

* Integrated 10/100/1000 Ethernet, 56K5 V.92 modem

* Up to 2GB DDR (266Mhz) system memory

* 15.4-inch UltraSharp(tm) Wide Aspect displays with WUXGA, (1920 x 1200 resolution) and WXGA (1280 x 800)

* NVIDIA GeForce4 4200 Go Video Graphics with 32MB or 64MB of DDR dedicated memory

* Hard drives of 20GB, 30GB or 60GB, and a high-performance (5400 RPM) 40GB

* Multiple module bay options, including choice of optical drives of 24X CD-ROM, 8X DVD, 24X CD-RW, or 24X CD-RW/DVD combination drive, floppy disk drive, 40GB 2nd hard drive, or 2nd six-cell 48 Watt Hour "Smart" Lithium Ion battery

* Integrated Smart Card reader

* Three USB 2.0 ports, one IEEE1394 port, one S-Video out port

* Nine-cell 72 Watt Hour "Smart" Lithium Ion battery

* Three Year limited warranty6 with next business day onsite7 service

About Dell

Dell Computer Corporation (Nasdaq: DELL) is a premier provider of products and services required for customers worldwide to build their information-technology and Internet infrastructures. Company revenue for the past year totalled $35.4 billion. Dell, through its direct business model, designs, manufactures and customises products and services to customer requirements, and offers an extensive selection of software and peripherals.

Information on Dell and its products can be obtained at www.dell.co.uk

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IDC Worldwide Quarterly PC Market Tracker; International Data Corporation This term indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

Weight shown for D600 is with a 14.1" XGA display, CD-ROM drive and a 4-cell battery. Weights vary depending on configurations and manufacturing variability.

4 Subject to availability, prices and specifications are correct at date of publication and may change without notice. All prices quoted exclude vat £ 17.5% and delivery charge is GBP 49 + vat £ 17.5% (GBP59.58 icl. Vat)

5 Download speeds limited to 53 Kbps. Upload speeds are less (about 30Kbps.) and vary by modem manufacturer and line conditions. Analog phone line and compatible service required. The computer is Internet ready if the specification includes a modem 6 Dell's Terms and Conditions of Sales and Service apply and are available on request and at www.dell.co.uk

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March 12, 2003

LENGTH: 614 words

HEADLINE: iPass
iPass Wi-Fi network uses 100% verified on Intel Centrino mobile technology providers

DATELINE: Redwood Shores, Calif.,

BODY:

iPass Inc. announced today that all its currently activated wireless broadband Internet, or Wi-Fi, network providers have been verified by either Intel or iPass to meet Intel CentrinoTM mobile technology interoperability criteria. Intel designates Wi-Fi providers as Wireless Verification Program (WVP) tested, provided the network hotspots can meet Intel's interoperability targets for its Intel Centrino mobile technology.

The two companies are working together toward improvement of the wireless experience on notebooks by enabling easier to use wireless connectivity to the Internet and providing Enterprise IT managers with new security tools and control. As part of the collaboration with Intel to make wireless access simpler and more predictable for Intel Centrino mobile technology users, iPass has been working with wireless Internet service providers (WISPs) in an effort to ensure optimal configuration of their access gateways to achieve the best possible user experience. As with all connectivity technologies available on the iPass virtual network, Wi-Fi hotspots go through a rigorous quality assessment and operations testing regimen to enable interoperability with the leading VPNs and personal firewall technology. Upon passing this battery of tests, networks are certified by iPass as "Enterprise Ready."

"For the enterprise, new mobility technologies can mean new opportunities to increase productivity," said Jon Russo, vice president of marketing at iPass. "In particular, the growing number of public Wi-Fi hotspots where people can get a high speed connection to the Internet has potential to significantly change the work habits of mobile enterprise employees. The key for making Wi-Fi technology ready for the enterprise is to make it secure, convenient and easy-to-use, all of which are goals of our relationship with Intel."

iPass is a technology supporter for the Intel Centrino mobile technology launch and also participates as a Service Provider. The solution supports the goal to provide an easy-to-use, seamless wireless connection from any iPass wireless access point around the world. In support of Intel Centrino mobile technology, iPass has worked to ensure its wireless virtual network is 100 percent WVP tested and available for customers worldwide. Additionally, iPass is working in conjunction with Intel to certify additional providers into the Wireless Verification Program.

About iPass

iPass Inc. (www.ipass.com) provides software-enabled enterprise connectivity services designed to give employees secure access to information and applications on the corporate network from approximately 150 countries in the world. As a virtual network operator (VNO), iPass offers enterprise employees a range of Internet protocol-based connectivity technologies, including wired and wireless broadband service at airports, hotels and conference centers worldwide. The iPassConnectTM smart client can be easily deployed across multiple computing devices and operating systems within an enterprise. Once deployed, the iPass service gives the corporate IT department complete control over how network resources are accessed. Founded in 1996, iPass is headquartered in Redwood Shores, Calif., with offices throughout North America, Europe and Asia Pacific.

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Malaysia Economic News

March 12, 2003, Wednesday

LENGTH: 286 words

HEADLINE: INTEL WORKS WITH WIRELESS NETWORK SERVICE PROVIDERS FOR NEW GEN MOBILE

SOURCE: INTEL-COMPUTER

DATELINE: KUALA LUMPUR, March 12, 2003

BODY:

Intel Corporation, a leading manufacturer of computer, networking and communications products has been working with leading wireless network service providers as part of its introduction of its Intel Centrino mobile technology.

However, the company declined to give further details of the companies it is negotiating with in Malaysia.

A special announcement will be made, said Sophia Chew, the director of Reseller Channel Operations Asia Pacific for Intel Technology Asia Pte Ltd, at an event here to introduce the new generation of mobile personal computer.

In addition, it has been working with hotels, airports, retail and restaurant chains worldwide to accelerate deployment and increase awareness of wireless public hotspots.

For its marketing stratey, she said Intel has developed the Wireless Verification Program such as engineering and testing of Intel Centrino with various access point devices, software combinations, hotspots locations and wireless service providers to verify their compatibility.

The company expects to verify more than 10,000 hotspots worldwide by the end of the year.

It has also created a standardized worldwide Wireless Identifier Program that includes signs to help users identify the hostspot.

Last year, the company created a US$150 million fund to invest in companies that are helping to expand and accelerate the infrastructure and capabilities required to make wireless computing ubiquitous, said Sophia.

Intel Centrino mobile technology includes a new mobile processor, related chipsets and 802.11 wireless network functions that have been optimised, tested and validated to work together.

System pricing will start at US$1,399.

LOAD-DATE: March 13, 2003

In one fell swoop, AMD has reinvented its mobile business. "These new chips represent three wattage levels, addressing three different market segments," says Varela. "We're really rounding out our product line so we can cover the entire mobile market."

LOAD-DATE: March 25, 2003

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March 12, 2003, Wednesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS, HEALTH AND MEDICAL EDITORS

LENGTH: 763 words

HEADLINE: TouchWorks mEMR(TM) Featured in Intel(R) Centrino(TM) Mobile Technology Launch; Live Demo via Satellite From Cheshire Medical Center/Dartmouth-Hitchcock Keene During Keynote Address

DATELINE: NEW YORK and CHICAGO, March 12

BODY:

At the Intel(R) Centrino(TM) mobile technology launch today in New York, Intel will highlight the benefits of their new mobile platform for the healthcare industry through a live demonstration of TouchWorks(TM), a product of Allscripts Healthcare Solutions (Nasdaq: MDRX). Don Caruso, M.D., Department Chair of Family Practice at Cheshire Medical Center/Dartmouth-Hitchcock Keene and recent winner of the 2003 Microsoft Healthcare Users Group Physician of the Year Award, will demonstrate how the TouchWorks modular electronic medical record (mEMR(TM)) will leverage the capabilities of Intel Centrino mobile technology to deliver Just Right, Just-in-Time Information(R) to physicians at the point of care.

Intel Centrino mobile technology was built from the ground up specifically for wireless hardware platforms -- delivering breakthrough performance and enabling extended battery life in thinner, lighter devices. These mobile computing features enhance the performance of electronic medical record (EMR) solutions, like TouchWorks, in a wireless setting. The Intel Centrino mobile technology eliminates the need for additional hardware to support a wireless network and reduces the amount of time a physician must recharge a mobile device.

"Allscripts Healthcare Solutions is proud that Dr. Caruso and TouchWorks were selected to demonstrate the functionality of the Intel Centrino platform," commented Glen Tullman, Chief Executive Officer of Allscripts Healthcare Solutions. "Through our partnerships with industry leaders like Intel, Allscripts Healthcare Solutions focuses on developing innovative solutions for physicians that improve the quality and efficiency of healthcare. Our users will benefit from the lower cost of ownership which this technology provides and which we will leverage through our software.

With Intel Centrino mobile technology, we move ever closer to making our TouchWorks solution as indispensable as the stethoscope."

Representatives from AHS will offer additional demonstrations of the TouchWorks EMR solution at the Intel Centrino mobile technology showcase.

About Allscripts Healthcare Solutions

Allscripts Healthcare Solutions is a leading provider of clinical software and information solutions for physicians. The Company's TouchWorks software is a modular electronic medical record that enhances physician productivity using a wireless handheld device, Tablet PC, or desktop workstation to automate the most common physician activities including prescribing, dictating, capturing charges, ordering labs and viewing results, providing patient education, and documenting clinical encounters. Additionally, AHS provides patient compliance and healthcare product education services for physicians through its Physicians Interactive(TM) business and also provides medication fulfillment services. AHS provides software and services to over 20,000 physicians across the U.S.

Strategic partners include IDX Systems (Nasdaq: IDXC); IMS Health (NYSE: RX); Microsoft (Nasdaq: MSFT); Hewlett-Packard Company; Express Scripts (Nasdaq: ESRX); and Medco Health.

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March 12, 2003, Wednesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS AND TECHNOLOGY EDITORS

LENGTH: 792 words

HEADLINE: Telispark Mobile Field Works(TM), an Enterprise Mobility Application, To Be Showcased at the Intel(R) Centrino(TM) Mobile Technology Launch

BODY:

Telispark Mobile Fieldworks Improves Asset Utilization and Increases Operational Efficiency Within the Enterprise

NEW YORK, March 12 /PRNewswire/ -- Telispark, a leading provider of enterprise mobility applications (EMA), today announced that Intel selected the company to demonstrate its composite field service solution, Telispark Mobile Field Works(TM), at the exclusive Intel(R) Centrino(TM) mobile technology showcase. Telispark will exhibit Telispark Mobile Field Works to illustrate how enterprises can provide the mobile worker with streamlined and integrated business processes across functional operations such as ERP, Field Service, Supply Chain and Asset Management operations.

The launch event is focused on officially introducing the Intel Centrino mobile technology to the marketplace. More than just a processor, Intel Centrino mobile technology contains optimized and extensively validated mobile technologies that deliver an outstanding mobile experience. Each of the components (Intel(R) Pentium(R) M processor, Intel(R) 855 chipset family, Intel(R) PRO/Wireless 2100 Network Connection) are designed, tested and tuned by Intel to maximize the wireless mobile computing experience.

At the event, the Telispark Mobile FieldWorks application demonstration will illustrate how enterprise field technicians using mobile laptops can access detailed equipment information, then service and track those assets while communicating updated work order, inventory and asset information back to the enterprise using the Intel Centrino mobile technology. The result is an audited list of assets that are well maintained and accurately depreciated in the financial systems to result in rapid and substantial ROI. In addition, the demo will highlight how Telispark Mobile FieldWorks enables assets' conditions to be recorded and acted upon for preventive maintenance while reducing the overstocking of parts in inventory.

"Intel and Telispark share a common vision of freeing the mobile workforce," said Anand Chandrasekher, vice president and general manager of Intel's Mobile Platforms group. "Intel Centrino mobile technology brand signifies a new generation of mobile PC and, along with Telispark's enterprise mobility applications, enables wireless LAN computing solutions that help address critical business needs."

"Telispark is pleased to play a role in helping Intel introduce its newest occasionally connected message to the market," said Randy Brouckman, CEO and President of Telispark. "We believe that the availability of Intel Centrino mobile technology will help fuel increased adoption of mobile applications, devices and technologies in both enterprise and consumer businesses."

Telispark Mobile FieldWorks is a bundled, composite solution around Telispark Mobile Enterprise 2.0's eight modular, packaged applications: mWorkMgr, mDocs, mInspect, mAsset, mDepot, mTroubleTicket, mWarehouse, and mT&M. Telispark Mobile Enterprise is a commercially available, off-the-shelf suite of industry-specific applications designed to streamline and integrate business operations required by mobile workers, such as Enterprise Resource Planning, Field Service, Supply Chain and Asset Management operations. Telispark Mobile Enterprise 2.0 is designed specifically with mobile workers and their business processes in mind. The result is easy-to-navigate, fully integrated field service and asset management applications that increase enterprise operational efficiency.

About Telispark

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March 12, 2003, Wednesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS AND TECHNOLOGY EDITORS

LENGTH: 509 words

HEADLINE: American Arium Announces Support for Intel(R) Centrino(TM) Mobile Technology

BODY:

Arium's ECM-20 Provides Debugging Capabilities for the Intel(R) Pentium(R) M Processor

TUSTIN, Calif., March 12 /PRNewswire/ -- American Arium today announced debug support for the core processor in Intel's Centrino(TM) mobile technology. The ECM-20, Arium's state-of-the-art in-target probe for Intel 32-bit processors, is the first commercially available emulation and debugging solution for designers and programmers using the new Intel(R) Pentium(R) M processor.

"Once again, American Arium has worked closely with Intel Corporation to create a top notch debug solution for IA-32 architecture," said Jeff Acampora, vice president, Sales & Marketing. "The Intel Centrino Mobile Technology, coupled with the Pentium M processor represents the future of wireless notebook computing, and we're there to help developers get designs finished ahead of the competition."

The ECM-20 incorporates best-of-breed functionality and a feature rich set of run-control emulation functions for excellent manipulation of code. The ECM-20 works in real time with all processor frequencies, provides accurate breakpoint functionality, and works with today's most popular compilers. SourcePoint(TM), Arium's companion software, offers exceptional visibility to the code via a series of intuitive screens and dialog boxes with numerous viewing options. In addition, Arium's solution provides access to unique on-die triggering functionality that was once only available through the use of expensive logic analysis equipment. This combination delivers the best debug solution on the market today for mobile processors.

Intel Centrino technology incorporates the Intel(R) Pentium(R) M processor, the Intel(R) 855PM and Intel(R) 855GM chipsets, and Intel(R) PRO/Wireless 2100 network connectivity based on 802.11b (Wi-Fi) networking protocols.

The Intel(R) Pentium(R) M processor incorporates outstanding mobile performance while enabling sleek notebook PC designs with extended battery life.

The Arium ECM-20 emulator is available now. Contact American Arium for pricing information.

About American Arium

American Arium, a privately held corporation, is a supplier of hardware and software development tools for Intel IA-32 and IA-64 processors and Intel(R) XScale(TM) processors. The company also supports other ARM-based ASICs. American Arium tools are used worldwide to debug software in embedded applications, BIOS, device drivers, and OS kernels. American Arium is a member of the Intel Communications Alliance. Additional information can be found at www.arium.com .

SourcePoint is a trademark of American Arium. Intel, Centrino, Pentium, and XScale are trademarks or registered trademarks of Intel Corporation.

For further information, please contact Todd Selbo of American Arium, +1-714-731-1661, todd_selbo£arium.com .

SOURCE American Arium

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March 12, 2003, Wednesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS AND TECHNOLOGY EDITORS

LENGTH: 1458 words

HEADLINE: Gateway 450 Notebook With Intel Centrino Mobile Technology Provides All-Day Mobile Computing; Continuing to Deliver the Industry's Latest Mobile Technology, Gateway Stores Nationwide Today Begin Selling Notebooks With Intel(R) Centrino(TM) Mobile Technology

DATELINE: POWAY, Calif., March 12

BODY:

Gateway, Inc. (NYSE: GTW) today makes plane rides, off-site meetings and classroom study more productive for mobile PC users with the new Gateway(R) 450 notebook, available immediately and equipped with the new Intel(R) Centrino(TM) mobile technology. The notebook takes mobile computing to a new level with mobile-optimized Intel(R) Pentium(R)-M processors, enhanced battery life, integrated Intel(R) PRO/Wireless Network Connection 802.11b, a modular design, and a large 15-inch high-resolution display.

(Photo: http://www.newscom.com/cgi-bin/prnh/20020930/LAM050LOGO)

The Gateway 450 provides extended battery life of more than eight hours on a single charge of the main battery and optional modular battery, helping mobile users to be more flexible and productive.(1) For a limited time, Gateway is now offering a modular six-cell battery for only $1 with the purchase of select Gateway 450 notebooks.(2)

Gateway continues to be a leader in bringing new mobile technology to market, and beginning today, customers can purchase a notebook with Intel Centrino mobile technology at Gateway(R) stores. The immediately-available Gateway 450 enhances the company's position as the fastest growing notebook manufacturer in the U.S.: the company posted 40 percent growth in notebook sales in the fourth quarter of 2002 over the previous year.

"Our growth in mobile PC sales is the result of delivering leading-edge technology, functional designs and best values across our mobile line," said Mike Stinson, general manager, mobile products group, Gateway, Inc. "The Gateway 450 provides a huge advancement in mobile PC performance and perfectly complements our award-winning mobile products, wireless WAN solutions for businesses and wireless home networking offerings for consumers."

The Gateway 450 with Intel Centrino mobile technology incorporates the Intel Pentium-M processors from 1.30 to 1.60 GHz, Intel(R) 855PM chipset and integrated Intel PRO/Wireless network connection 802.11b. Launched today, Intel Centrino mobile technology is designed, tested and tuned for wireless notebook PCs. The new technology offers high processing performance, 802.11b wireless capability, and an array of power-management innovations to enable extended battery life.(1)

"Gateway is helping mobile users take full advantage of the many performance benefits provided by Intel Centrino mobile technology in its new Gateway 450 notebook," said Anand Chandrasekher, vice president and general manager, Intel's Mobile Platforms Group, Intel Corporation. "The enhancements in the PC will help students, business and home computer users alike be more flexible and productive."

Integrated Intel Pro/Wireless network connection 802.11b ensures a reliable wireless connection in more places than ever, including hotels, convention centers, college campuses and SOHO environments.(1) Intel is working with leading public access point providers around the world to enhance Intel Centrino mobile technology compatibility.

Battery Life to Support a Full Working Day

The combination of Intel Centrino mobile technology and Gateway innovation deliver unprecedented battery life. VeriTest,(7) an independent testing lab, analyzed the battery life of the Gateway 450, evaluating the notebook in a range of real-world environments. The rigorous testing showed that with the six-cell standard battery and additional optional six-cell modular battery, the Gateway 450 delivers more than eight hours of battery life for all-day computing. Using an

http://www.intel.com/products/centrino/more_info for more information
(2) Prices and configurations subject to change without notice or obligation. Prices exclude shipping and handling and taxes.
(3) Hard drive accessible capacity varies; GB = 1 billion bytes
(4) Limited warranties and service agreements apply; visit gateway.com or call 1-800-846-2000 for a free copy.
(5) Source: Fortune magazine, March 3, 2003 issue.
(6) Source: Computer Shopper magazine, February 2003 issue.
(7) VeriTest is the testing division of Lionbridge Technologies

SOURCE Gateway, Inc.

CONTACT: Lisa Emard of Gateway, Inc., +1-858-848-3426, lisa.emard£gateway.com

URL: http://www.prnewswire.com

LOAD-DATE: March 13, 2003

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March 12, 2003, Wednesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS AND TECHNOLOGY EDITORS

LENGTH: 572 words

HEADLINE: CA Delivers Management, Security and Backup Solutions For New Intel Centrino Mobile Technology

BODY:

Unicenter, eTrust and BrightStor Solutions Deliver First-Day Support
For Centrino-Based Devices

ISLANDIA, N.Y., March 12 /PRNewswire-FirstCall/ -- Computer Associates International, Inc. (CA) today announced first-day support for Intel's newly introduced Intel Centrino mobile technology. CA is providing advanced management, security and backup capabilities for Centrino-based devices through its Unicenter, eTrust and BrightStor product lines. CA customers can take full and immediate advantage of the benefits offered by Intel Centrino mobile technology-based devices while ensuring their ability to effectively administer those devices in a heterogeneous environment.

Key CA solutions providing full support for Centrino include Unicenter NSM, Unicenter Software Delivery, Unicenter Asset Management, eTrust Antivirus, and BrightStor Mobile Backup.

"CA and Intel share a vision of mobility solutions that fit into the larger context of the well-managed enterprise," said Anand Chandrasekher, vice president and general manager, Intel's Mobile Platforms Group. "With the introduction of its Intel Centrino mobile technology-compatible solutions, CA is clearly demonstrating its ability and commitment to realize that shared vision."

Intel Centrino mobile technology's design innovations enable the extended battery life, breakthrough mobile performance, integrated wireless LAN capability, and thinner, lighter designs that mobile users want. Intel has designed Intel Centrino mobile technology from the ground up to deliver an outstanding mobile experience.

"Intel Centrino is a significant step forward for the mobile enterprise," said Sumit Deshpande, technology strategist in the Office of the CTO at CA. "By providing full support for the Intel Centrino mobile technology-based devices, we are enabling our customers to put this important new technology into production."

The ability to manage, secure and backup mobile devices with the same tools that manage other enterprise assets is critical for IT organizations working to streamline operations within existing budget constraints. CA's award-winning Unicenter, eTrust and BrightStor solutions provide this vital commonality -- enabling organizations to automate core tasks across heterogeneous enterprise computing environments.

CA also announced that the Unicenter NSM Wireless Network Management Option, which supports Centrino, will be generally available this spring.

About CA

Computer Associates International, Inc. (NYSE: CA), one of the world's largest software companies, delivers software and services that enable organizations to manage their IT environments. Focus areas include network and systems management, storage and security management, portal and business intelligence, and application life-cycle management. Founded in 1976, CA is headquartered in Islandia, NY, and operates in more than 100 countries. For more information on CA, please visit http://ca.com .

(Logo: http://www.newscom.com/cgi-bin/prnh/20021111/CALOGO)

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March 12, 2003, Wednesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS AND TECHNOLOGY EDITORS

LENGTH: 596 words

HEADLINE: iPass Wi-Fi Network Uses 100% Verified on Intel(R) Centrino(TM) Mobile Technology Providers

DATELINE: REDWOOD SHORES, Calif., March 12

BODY:

iPass Inc. announced today that all its currently activated wireless broadband Internet, or Wi-Fi, network providers have been verified by either Intel or iPass to meet Intel(R) Centrino(TM) mobile technology interoperability criteria. Intel designates Wi-Fi providers as Wireless Verification Program (WVP) tested, provided the network hotspots can meet Intel's interoperability targets for its Intel Centrino mobile technology.

The two companies are working together toward improvement of the wireless experience on notebooks by enabling easier to use wireless connectivity to the Internet and providing Enterprise IT managers with new security tools and control. As part of the collaboration with Intel to make wireless access simpler and more predictable for Intel Centrino mobile technology users, iPass has been working with wireless Internet service providers (WISPs) in an effort to ensure optimal configuration of their access gateways to achieve the best possible user experience. As with all connectivity technologies available on the iPass virtual network, Wi-Fi hotspots go through a rigorous quality assessment and operations testing regimen to enable interoperability with the leading VPNs and personal firewall technology. Upon passing this battery of tests, networks are certified by iPass as "Enterprise Ready."

"For the enterprise, new mobility technologies can mean new opportunities to increase productivity," said Jon Russo, vice president of marketing at iPass. "In particular, the growing number of public Wi-Fi hotspots where people can get a high speed connection to the Internet has potential to significantly change the work habits of mobile enterprise employees.

The key for making Wi-Fi technology ready for the enterprise is to make it secure, convenient and easy-to-use, all of which are goals of our relationship with Intel."

iPass is a technology supporter for the Intel Centrino mobile technology launch and also participates as a Service Provider. The solution supports the goal to provide an easy-to-use, seamless wireless connection from any iPass wireless access point around the world. In support of Intel Centrino mobile technology, iPass has worked to ensure its wireless virtual network is 100 percent WVP tested and available for customers worldwide. Additionally, iPass is working in conjunction with Intel to certify additional providers into the Wireless Verification Program.

About iPass

iPass Inc. (www.ipass.com) provides software-enabled enterprise connectivity services designed to give employees secure access to information and applications on the corporate network from approximately 150 countries in the world. As a virtual network operator (VNO), iPass offers enterprise employees a range of Internet protocol-based connectivity technologies, including wired and wireless broadband service at airports, hotels and conference centers worldwide. The iPassConnect(TM) smart client can be easily deployed across multiple computing devices and operating systems within an enterprise. Once deployed, the iPass service gives the corporate IT department complete control over how network resources are accessed. Founded in 1996, iPass is headquartered in Redwood Shores, Calif., with offices throughout North America, Europe and Asia Pacific.

SOURCE iPass Inc.

CONTACT: John Sidline of iPass, +1-650-232-4112, or jsidline£ipass.com; or Ellie O'Rourke of The Hoffman Agency, +1-408-975-3057, or eorourke£hoffman.com, for iPass

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March 12, 2003, Wednesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS AND TECHNOLOGY EDITORS

LENGTH: 840 words

HEADLINE: Packed with the Latest Mobile Technology, the TravelMate(TM) 800 From Acer America Sets New Standards in Mobility, Performance and Wireless Connectivity;
Features Intel(R) Centrino(TM) Mobile Technology, Wi-Fi and Bluetooth Wireless Technology

DATELINE: SAN JOSE, Calif., March 12

BODY:

Acer America Corporation today announced the addition of the TravelMate(TM) 800 series to its award winning line of TravelMate notebooks. As the first Acer notebook to offer Intel(R) Centrino(TM) mobile technology with Bluetooth and Wi-Fi connectivity, the TravelMate 800 delivers breakthrough performance, leading connectivity and extended battery life of up to 8 hours with optional dual battery operation in a thinner, lighter notebook PC. Designed to meet the needs of the "corridor cruisers," the TravelMate 800 enables roaming users -- factory workers, teachers, and doctors, for example -- to roam around their campus and still have access to their corporate wireless LAN from any location, providing freedom, connectivity and uninterrupted productivity.

The new Intel(R) Pentium(R) M processor is Intel's most comprehensive processor redesign since the x86 platform and is the company's first product designed specifically for mobile applications. The low power design enables the TravelMate 800 to offer an unprecedented set of features -- such as 15" SXGA monitor, 1.6 MHz clock speeds, and built-in wireless connectivity -- without sacrificing long battery life or lightweight design. The integrated Wi-Fi 802.11b LAN support allows users to connect to widely available wireless networks, while Bluetooth wireless connectivity is provided for the new generation of printers, cell phones, and other peripherals.

"Like the TravelMate C100, the world's first convertible Tablet PC, Acer continues to set the pace in new mobile technology with the new TravelMate 800," said Sumit Agnihotry, mobile product manager for Acer America.

"The TravelMate 800 leverages Intel Centrino mobile technology to provide the freedom and flexibility mobile users desire, offering uncompromising mobile performance and features, complete wireless integration, and longer battery life in a sleek, thin and light notebook."

Comprehensive Flexibility

The Acer TravelMate 800 is an advanced, full-featured notebook with a brilliant 15" SXGA+ TFT display, 512 MG of DDR 266 SDRAM upgradeable to 1024 MB, and an ATI M9 video adapter with 64 MB of dedicated DDR video memory for outstanding multimedia performance. In addition to wireless 802.11b and Bluetooth support, the TravelMate offers 4 USB 2.0 ports, an IEEE 1394 port, 10/100 LAN connection, and a 56K V.90 modem.

This two-spindled notebook incorporates up to a 60 GB ATA/100 removable hard drive as well as a hot swappable Acer media bay, enabling users to access data on a variety of media including a DVD/CDRW or DVD-R, as well as inserting a second battery for maximum efficiency. TravelMate 800 series notebooks offer a 4-in-1 PCMCIA Multimedia reader, built-in SmartCard Reader and a port replicator option. Preloaded with Microsoft(R) Windows(R) XP Professional, and weighing just 5.7 pounds, the TravelMate 800 provides the freedom and flexibility mobile users demand.

Pricing

The Acer TravelMate 800 series will be available through Acer authorized resellers throughout North America starting at $1799.

Service and Support

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March 12, 2003, Wednesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS, ENTERTAINMENT AND TECHNOLOGY EDITORS

LENGTH: 646 words

HEADLINE: NVIDIA GeForce Go Products Fully Support New Intel(R) Centrino Mobile Technology

BODY:

Company's Mobile GPUs Featured in First Centrino-Based Notebooks

CEBIT - HANOVER, Germany, March 12 /PRNewswire-FirstCall/ -- NVIDIA Corporation (Nasdaq: NVDA), the worldwide leader in visual processing solutions, today announced that all of the Company's mobile graphics processing units (GPUs) are compatible with and support all features of the Intel(R) Centrino(TM) mobile technology-based notebooks announced earlier today. The potent combination of a mobile GPU from NVIDIA and Intel's Centrino mobile technology will enable extended battery life, outstanding mobile performance and in thinner, lighter form factors that today's notebook users crave. The Toshiba Satellite Pro M10/M15-S405 featuring the NVIDIA(R) GeForce(TM)4 420 Go and the Samsung X10 with the NVIDIA GeForce4 440 Go are among the first Centrino notebooks that will ship with an NVIDIA GPU.

(Photo: http://www.newscom.com/cgi-bin/prnh/20020613/NVDALOGO)

"NVIDIA consistently pushes the boundaries of mobile technology in an effort to change how and where people compute," said Rob Csongor, senior director of mobile products at NVIDIA. "By combining NVIDIA mobile GPUs with Intel's Centrino mobile technology, consumers will see a whole new generation of notebooks with superior features, performance and power control."

Notebooks featuring NVIDIA mobile GPUs and Intel's Centrino mobile technology will be available from leading OEMs and ODMs, including Toshiba and Samsung, at the end of the first quarter of 2003. Additional information about NVIDIA mobile GPUs can be found at http://www.nvidia.com .

About NVIDIA

NVIDIA Corporation is a market leader in visual computing technology dedicated to creating products that enhance the interactive experience on consumer and professional computing platforms. Its graphics and communications processors have broad market reach and are incorporated into a wide variety of computing platforms, including consumer digital-media PCs, enterprise PCs, professional workstations, digital content creation systems, notebook PCs, military navigation systems and video game consoles. NVIDIA is headquartered in Santa Clara, California and employs more than 1,500 people worldwide. For more information, visit the Company's Web site at www.nvidia.com.

Certain statements in this press release, including the statements relating to the Company's performance expectations for NVIDIA's family of products and expectations of continued revenue growth, are forward-looking statements that are subject to risks and uncertainties that could cause results to be materially different than expectations. Such risks and uncertainties include, but are not limited to, manufacturing and other delays relating to new products, difficulties in the fabrication process and dependence of the Company on third-party manufacturers, general industry trends including cyclical trends in the PC and semiconductor industries, the impact of competitive products and pricing alternatives, market acceptance of the Company's new products, and the Company's dependence on third-party developers and publishers. Investors are advised to read the Company's Annual Report on Form 10-K and quarterly reports on Form 10-Q filed with the Securities and Exchange Commission, particularly those sections entitled "Certain Business Risks," for a fuller discussion of these and other risks and uncertainties.

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March 12, 2003

LENGTH: 546 words

HEADLINE: Intel will demonstrate Birdstep Intelligent Mobile IP at Intel(R) CentrinoTM mobile technology launch

BODY: Seattle/Oslo, Norway March 12, 2003 Birdstep Technology today announced that Intel will use Birdstep's Intelligent Mobile IP software client in the presentation of the new Intel(R) CentrinoTM mobile technology launch in New York, London, Beijing and Tokyo. Intel Centrino mobile technology combined with Birdstep's Mobile IP technology will illustrate how important roaming is between different networks.

Intel(R) CentrinoTM mobile technology launch March 12, 2003

Intelligent Mobile IP software enables secure and continuous connectivity of mobile devices through any network regardless of whether it's a wired connection, such as DSL or Ethernet, or a wireless one, such as wireless LAN (WLAN), Bluetooth or GSM/GPRS cellular systems.

The Birdstep Intelligent Mobile IP Client supports existing standards and legacy network infrastructures and enables the mobilization of corporate VPNs. The solution protects a company's VPN investment and ensures that the company's security policies are enforced. Network administrators can rest assured that their existing VPN solution remains in full control of all external access to the corporate intranet. Intel Centrino mobile technology is the new brand name for Intel's upcoming wireless mobile computing technology, the new mobile processor and wireless networking capability marks the first time Intel has combined these technologies. With Intel Centrino mobile technology, you won't need to study a technical manual or bring along special equipment to connect on the go. That's because Intel is working with hardware and software developers, and wireless services providers, to deliver a reliable and integrated wireless mobile computing experience.

'Birdstep's Mobile IP software allows users of laptops, PDAs and other mobile devices to seamlessly connect and re-connect when an established connection breaks and we are excited that Intel has chosen to show our Mobile IP client at the Intel Centrino mobile technology launch,' said Hans-Arne L'orange chief executive officer, Americas, of Birdstep Technology. 'This shows that Birdstep has the technology leadership to deliver a reliable handover between different access technologies.'

About Birdstep Technology

Birdstep Technology Inc. was founded in Oslo, Norway in 1996 and is traded on the Oslo Stock Exchange (OSE) under ticker 'BIRD'. The company has approximately 70 employees in Oslo and Seattle. Birdstep's small footprint, high performance database technologies combined with its wireless roaming and access software enables companies to build innovative solutions for embedded systems and the Mobile Internet. Named a 2002 Comet Award winner by Communication Systems Design magazine, Birdstep makes your information accessible anytime, anywhere, on any device and on any infrastructure. For more information, visit www.birdstep.com.

About Intel

Intel, the world's largest chipmaker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

Contact Information:

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March 12, 2003

LENGTH: 1658 words

HEADLINE: Intel Launches Intel(R) Centrino Mobile Technology

BODY: New Capabilities Unwire Mobile PCs to Change Where and How People Compute and Communicate

SANTA CLARA, Calif., March 12, 2003 Intel Corporation today introduced Intel(R) Centrino mobile technology, integrating wireless capability into a new generation of mobile PCs that will bring business users and consumers greater freedom to connect in new places and in new ways.

Representing Intel's best technology for mobile PCs, Intel Centrino mobile technology includes a new mobile processor, related chipsets and 802.11 wireless network functions that have been optimized, tested and validated to work together. In addition to wireless communications, Intel Centrino mobile technology includes features designed to enable extended battery life, thinner and lighter notebook designs, and outstanding mobile performance.

"Unwiring the PC will change the way people use computers, allowing them to communicate, be productive or be entertained wherever and whenever they want," said Craig Barrett, Intel's chief executive officer. "Our focus on integrating all the elements of mobility allows Intel Centrino mobile technology to deliver an outstanding wireless computing experience and marks the first time we've put a combination of technologies under a single brand. This breakthrough innovation, together with industry-wide investment and Wi-Fi hotspot deployments, brings new computing and communications capabilities to businesses and consumers, adding value to mobile PCs."

Intel Centrino mobile technology-based notebook PCs are available immediately from leading computer makers worldwide. System pricing will start as low as $1,399, comparable to today's mainstream notebooks. Computer shoppers can identify these notebooks by a Centrino brand logo featuring a striking magenta color and the Intel Inside(R) mark.

Accelerating "Hotspot" Deployment Worldwide

Hotspots -locations where users can connect using 802.11 wireless technology -are on the rise, enabling users to be more mobile than ever. According to industry analyst firm IDC, there will be more than 118,000 hotspots worldwide by 2005.**

Using truly mobile notebook computers can change the way people live. With notebooks based on Intel Centrino mobile technology, a business traveler can check office email or read the hometown newspaper online while waiting for a flight at the airport, and still have battery life left to watch a DVD movie on the plane ride home. A real estate agent can check the latest listings wirelessly while dining with prospective home-buyers. A financial planner can check the market and activate client orders while at a seminar without compromising on the performance necessary to run the most demanding office applications. Students can register for next semester's classes or seek a part-time job from the college library, all on a sleek, light-weight system that won't drag them down.

As part of the introduction of Intel Centrino mobile technology, Intel has been working with leading wireless network service providers, hotels, airports, retail and restaurant chains worldwide to accelerate deployment and increase awareness of wireless public hotspots. In addition to marketing and promotional activities, Intel developed the Wireless Verification Program which includes engineering and testing of Intel Centrino mobile technology with various access point devices, software combinations, hotspot locations and wireless service providers to verify they are compatible, further enhancing the end user's wireless experience. Intel's efforts worldwide have already resulted in thousands of verified hotspots. The company expects to verify more than 10,000 by the end of the year.

Intel has also created a standardized worldwide Wireless Identifier Program that includes signs to help users identify where they can connect wirelessly. The program informs users that a particular service provider's network has been verified with Intel Centrino mobile technology. In addition, the company last year created a $150 million fund to invest

Intel Centrino mobile technology pricing includes the Intel 855PM chipset, Intel PRO/Wireless 2100 network connection, and the Intel Pentium M Processor at speeds of 1.60, 1.50, 1.40, 1.30 GHz priced at $720, $506, $377, $292 respectively in 1,000 unit quantities. Intel Centrino mobile technology also is available in a low voltage processor at 1.10 GHz and an ultra-low-voltage processor at 900 MHz priced at $345, and $324 respectively.

These prices represent the cost of each component (processor, chipset, WLAN) that together make up Intel's Centrino mobile technology. Intel also sells each device separately.

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom

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Other marks and brands may be claimed as the property of others.

*For more information on Intel's mobile performance, visit:

www.intel.com/performance

**IDC, 2003.

Note: Important Information: Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. System performance measured by MobileMark* 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. See http://www.intel.com/products/centrino/more_info for more information.

LOAD-DATE: March 19, 2003

CONTACT:

NOTE TO EDITORS: If you are interested in viewing additional information on NVIDIA, please visit the NVIDIA Press Room at http://www.nvidia.com/view.asp?PAGE=press_room.

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Photo: NewsCom: http://www.newscom.com/cgi-bin/prnh/20020613/NVDALOGO

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Web site: http://www.nvidia.com/

LOAD-DATE: March 13, 2003

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TELECOMWORLDWIRE

March 12, 2003

LENGTH: 137 words

HEADLINE: Intel and Borders sign marketing agreement

BODY:

Chip maker Intel Corp has entered into an agreement with book and music retailer Borders Group Inc to promote wireless Internet access in over 400 Borders Book & Music outlets in the US.

The marketing campaign has been begun to coincide with the launch of Intel's Centrino mobile technology for notebook PCs with built in wireless capability.

The initiative will consist of signs informing people of where the hotspots can be found as well as drive the awareness of hotspots and wireless technologies.

The Borders hotspots are being provided by mobile operator T-Mobile which has worked with Intel to make sure that the network is compatible with Intel Centrino mobile technology.

No financial terms of the agreement were announced.

((Comments on this story may be sent to tww.feedback£m2.com))

LOAD-DATE: March 12, 2003

hour costs $3); McDonald's plans to expand the program to hundreds of restaurants in New York, Chicago and an undisclosed California locale by year's end. Lufthansa and British Airways have begun to offer wireless surfing on certain overseas routes, using a system designed by Boeing, another launch participant.

As for the laptops, the $2,429 IBM ThinkPad T40 was my favorite, albeit a bit expensive. It's only 1 inch thick and weighs less than 5 pounds. Choosing any laptop comes down to aesthetics and comfort, and I was impressed by the look and feel of each entry. I give IBM the nod because I'm a longtime fan of ThinkPad keyboards, and the T40 did not disappoint.

As with all the latest ThinkPads, it ships with a choice of caps for the TrackPoint (eraser-head-style) pointing device. A touch pad is also on hand. IBM also includes a nice tutorial and tools for learning, protecting and getting technical support, all under an area known as Access IBM that's reachable by a single button at the top of the keyboard.

The Gateway 450XL has a so-called 1394 or FireWire port (for, say, connecting camcorders) and a nice 15-inch screen, but the result is a heavier 6-plus-pound machine. Gateway supplied me with an optional second battery that, combined with the first, was capable of delivering a full day's charge. Alas, the modular battery uses the same drive bay as the DVD, so you can't use the extra power to help you watch a double feature on a long flight.

I ran into problems on the other laptops, the Dell Inspiron 600m and Toshiba Satellite Pro M10-S405. I am willing to be more forgiving than usual, however, because the machines were still being readied for prime time. The Dell is appealingly light (about 5 pounds), but the battery in the computer refused to take a charge. A replacement worked fine.

As for Toshiba, I never was able to get the sound to work. Must have been bum hardware because the audio failed even after the company e-mailed new software drivers. It's too bad; I had wanted to test the built-in Harman Kardon speakers.

Otherwise, I was impressed with the machine's lovely 15-inch color screen, 1394 port and choice of pointing devices (track point and eraser style). Yet at 6.8 pounds, Satellite Pro is also the heaviest of this Centrino quartet.

I guess Centrino can fill you up.

Personal tech runs Wednesdays.

E-mail ebaig£usatoday.com

The bottom line

* Intel Centrino (* * * 1/2 out of four, www.intel.com; consists of Pentium M processor, additional chipsets and wireless Wi-Fi circuitry; Centrino notebooks from a variety of manufacturers start at $1,399). Pro: Without sacrificing performance, machines exude less heat while providing enhanced battery life and wireless connections to Internet. Con: Wi-Fi currently limited to 802.11 "b," rather than faster "a" or "g" flavors.

A sampler of Centrino-equipped laptops

* Dell Inspiron 600m: 1.6GHz processor, 14.1-inch display, 40GB hard drive, $2,499.
* Gateway 450XL: 1.5 GHz, 15-inch display, 40GB hard drive, $2,089.
* IBM Thinkpad T40: 1.5 GHz, 14.1-inch display, 40GB hard drive, $2,429.
* Toshiba Satellite Pro M10-S405: 15-inch display, 1.4 GHz, 40GB hard drive, $2,079.

GRAPHIC: PHOTO, B/W, Intel; PHOTO, B/W, IBM; Cooking with gas: Intel's Centrino chips, above, could become the industry standard in laptops such as IBM's ThinkPad T40, right.

LOAD-DATE: March 12, 2003

The Air Transport Association's forecast was designed to build political support for congressional war aid - help with jet fuel costs, insurance coverage and the airlines' tax burden if the United States invades Iraq.

Computer makers to debut wireless laptops

Two dozen computer makers today are scheduled to unveil laptops that use a new chip set from Intel Corp. that it hopes encourages consumers to connect to the Internet from hotels, coffee shops, airports and airplanes in flight.

Companies such as Dell Computer Corp., Hewlett-Packard Co. and Alienware Corp. are debuting computers that use Intel's Centrino chip set.

Designed specifically to run laptops, Centrino includes a radio component that lets users surf the Web wirelessly without having to buy extra devices.

Centrino-equipped ultralight laptops and tablet PCs are scheduled to debut later this year.

AOL provides software for blocking pop-ups

America Online, which swore off selling pop-up advertisements last October, is now giving its users software that will block pop-up ads on other Web sites.

AOL had pioneered the often annoying but effective pop-up format, which opens a new window on the screen covering whatever the user was trying to do. For many users, pop-ups have joined junk e-mail or spam as one of their biggest online annoyances.

Staff, wire reports

LOAD-DATE: March 15, 2003

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The Australian

March 11, 2003 Tuesday Preprints Edition

SECTION: FEATURES-COLUMN- AUSTRALIAN IT, COMPUTERS, IT BUSINESS; Pg. C02

LENGTH: 1556 words

HEADLINE: CONFERENCES, EXHIBITIONS, COURSES AND EVENTS

SOURCE: MATP

BODY:

Email items to it£theaustralian.com.au with the word Diary in the subject line, or fax to (02) 9288 2392. Do one or the other, not both. Please submit items in a format similar to the one we publish. There is no charge for inclusion. Training courses and user groups are not accepted. Deadline for copy is 4pm on the Tuesday of the week before publication.

ACS National Conference. A three-day brain dump from some of the best minds in the IT industry including web content management guru Gerry McGovern. Lorne, Victoria, March 21-23. Visit www.acs.org.au/conf2003 or call (03) 9690 8000.

Project Management for Software Acquisitions, a SEAQ workshop, Brisbane, March 11-12. Call Cathy Norris 1800 775 767, email cathy.norris£seaq.net.au or visit www.seaq.net.au

CIO Challenges in the Global Economy, presented by FITT. March 12, 12-2pm, Marriot Hotel, 36 College Street, Sydney. Speaker: Westpac general manager Mary Ann Maxwell. The role of the CIO in the global economy, and challenges for women as senior IT executives, $70. To register call (020 6260 5472.

Intel Centrino Mobile Technology Showcase. March 12-14, Martin Place, Sydney, and April 1-17, Qantas terminal, Sydney Domestic Airport. Free internet access, entertainment, giveaways and demonstrations. Call Casey Walton, (02) 9954 3299.

Superclusters. Free two-hour Silicon Graphics seminars. Unleashing competitive advantage with the Altix 3000 family. Perth March 12; Adelaide March 18; Auckland March 25. Visit www.myrego.com/sgi/extremeLinux or call (02) 8875 9532.

Business Options 2003: Fresh Ideas for Profit. Hosted by Peter Blasina. An interactive forum for small business owners and managers. Sponsored by Microsoft Australia, Quicken and Sensis. Crown Entertainment Complex Melbourne, today, 7.30am; Rendezvous Hotel Perth, March 13, 7.30am; AJC Convention Centre Sydney, March 18, 7.30am; Brisbane Convention and Exhibition Centre, March 20, 7.30am. Register at www.bcentral.com.au/

MYOB versus QuickBooks 2003 Seminars. Live demonstrations compare operational features of MYOB Premier and the soon-to-be-released QuickBooks 2003. 6-8pm, Melbourne today, Perth March 13, Sydney March 18 and Brisbane March 20. To register call 1300 784 253 or email customerservice£quicken.com.au or visit www.quicken.com.au/aboutUs/events.aspx

Biophotonics. March 13, Melbourne, 6.30pm, level 46, 55 Collins Street. Dr Emre Toker of Bioptics, Arizona, will discuss the US Small Business Innovation Research program. Presented by the Victorian Photonics Network. Visit www.mmv.vic.gov.au/photonics

Online User Documentation. A SEAQ workshop, Brisbane, March 13-14. Call Cathy Norris 1800 775 767, email cathy.norris£seaq.net.au or visit www.seaq.net.au

Smartsourcing Summit 2003. Strategic sourcing, processes and management. March 25-26, All Seasons Premier Menzies Hotel, Sydney. www.ibcoz.com.au/smartsourcing

IT Career Realities. An ACS NSW Education Across the Nation event. March 25, 5:30-8pm (including Networking Session). Level 60, Governor Phillip Tower, 1 Farrer Place, Sydney. Presenter: Peter Hind. ACS members free, non-members $55, prepaid. Visit www.acs.org.au/nsw

Website Rearchitecture. Join Webridge for Breakfast on the Bridge. March 26, 8-9:30am. Level 3, 346-348 Kent Street, Sydney. Internet and intranet topics, including content management systems, accessibility for the disabled and interactivity. Registration required. Call Shabd on (02) 9279 3353 or email shabd.kapoor£webridge.com.au

ACS Information Evening. March 26, 6-8pm, All Seasons Premier Menzies Hotel, Sydney. Keynote speaker Neville Roach. Free, places limited. Visit www.acs.org.au/nsw

Search Engine Strategies. March 26-27, Dockside, Cockle Bay, Sydney. Visit www.australia.internet.com

or call (02) 9290 1088.

XML Workshop, presented by SEAQ, March 27-28. Call Cathy Norris 1800 775 767, email cathy.norris£

seaq.net.au or visit www.seaq.net.au

My Boss Hates Videoconferencing.

A web seminar on videoconferencing events, including a panel discussion and international and local guest speakers. March 27, 11am. Webinar login details: www.acttel.com/eventlogin/ room number:195546.

Call Joanna Ma 1800 730 300 or email jma£acttel.com.au

Building Web Applications with ASP.NET. Led by Microsoft Developer Network regional director Adam Cogan. March 28 8am-12:30pm, Sydney. Call (02) 9953 3000 or visit www.ssw.com.au/ssw/events/

Disaster Recovery for IT Systems. An intensive half-day disaster recovery planning workshop. Brisbane March 28. Visit www.mrose.com.au/Workshop

DRP.htm or call (02) 9212 0300.

Asia-Pacific ICT Awards. Innovation and Information Economy Minister Paul Lucas launches APICTA's 2003 program. Winners will receive complimentary flights and accommodation to compete at the international APICTA Awards in Hong Kong, 2004. March 28, Mercure, Brisbane, 12 noon, $60 per head or $540 per table. Call Monique (07) 3511 6200, fax (07) 3511 6255, email events£itawards.com

Third Australian IT User Groups Day. 20 IT user groups under one roof, including: Java, .NET, Oracle, SAP, Linux, Sybase, Unix, Cold Fusion and Perl. March 29, Melbourne. Free. Visit: www.vtr.com.au/openday.html

Risk Management for IT Outsourcers. A workshop. Canberra March 31, Sydney April 3, Melbourne April 10, Brisbane April 14. 9am-5pm, lunch provided). Visit www.mrose.com.au/Risk-Management-Course.htm or call (02) 9212 0300.

IP Telephony Implementation and Migration, Peer- to-Peer Networking Series for ICT Professionals. Sydney April 1, Melbourne April 3, 8am-12.30pm. ATUG members $195, non- members $245, includes lunch. Call Kylie Kindred on (02) 9283 8999 or visit www.atug.housley.com.au

KEYS- IT Business Page 2

LOAD-DATE: March 10, 2003

LOAD-DATE: March 11, 2003

connection. Just as important, the service will be backed by a 24-hour, toll-free customer support line that will be available for all users.

Hilton International Co., a subsidiary of London-based Hilton Group plc that operates Hilton full-service hotels in more than 70 countries and shares a worldwide alliance with U.S.-based Hilton Hotels Corporation, has recently announced a partnership with British Telecom to launch wireless high-speed Internet access hotspots in nearly 40 hotels across the United Kingdom. This move by both Hilton companies increases the total number of locations offering this service to approximately 100 Hilton hotels and resorts worldwide this Spring.

NOTE TO EDITORS: Intel and Intel Centrino are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

HILTON HOTELS & RESORTS WIRELESS HIGH-SPEED INTERNET ACCESS

Service Will Be Available At These Hilton Properties On Or Before March 30, 2003

Hotel Name	City	State
Pointe Hilton Tapatio Cliffs Resort	Phoenix	AZ
Pointe Hilton Squaw Peak Resort	Phoenix	AZ
Hilton Suites Phoenix	Phoenix	AZ
Hilton Costa Mesa	Costa Mesa	CA
Hilton Glendale	Glendale	CA
Hilton La Jolla Torrey Pines	La Jolla	CA
Hilton Oakland Airport	Oakland	CA
Hilton Suites Anaheim / Orange	Orange	CA
Hilton San Diego Resort	San Diego	CA
Hilton San Francisco & Towers	San Francisco	CA
Hilton Santa Clara	Santa Clara	CA
Hilton Washington	Washington	DC
The Capital Hilton	Washington	DC
Hilton Atlanta Airport	Atlanta	GA
Hilton Hawaiian Village	Honolulu	HI
The Palmer House Hilton	Chicago	IL
Hilton Chicago	Chicago	IL
Hilton Chicago O'Hare Airport	Chicago	IL
Hilton Suites Oakbrook Terrace	Oakbrook Terrace	IL
Hilton New Orleans Airport	Kenner	LA
Hilton New Orleans Riverside	New Orleans	LA
Hilton Boston Back Bay	Boston	MA
Hilton Boston Logan Airport	Boston	MA
Hilton Minneapolis	Minneapolis	MN
Hilton Charlotte	Charlotte	NC
Hilton East Brunswick	East Brunswick	NJ
Hilton Short Hills	Short Hills	NJ
Hilton New York	New York	NY
The Waldorf-Astoria	New York	NY
Hilton Rye Town	Rye Brook	NY
Hilton Tarrytown	Tarrytown	NY
Hilton Portland	Portland	OR
Hilton Pittsburgh	Pittsburgh	PA
Hilton Suites Brentwood	Brentwood	TN
Hilton DFW Lakes Exec Conf. Center	Grapevine	TX
Hilton Alexandria Mark Center	Alexandria	VA
Hilton McLean Tysons Corner	McLean	VA
Hilton Seattle Airport & Conf. Center	Seattle	WA

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Business Wire

March 11, 2003, Tuesday

DISTRIBUTION: Business Editors/High-Tech Writers/Retail Writers

LENGTH: 551 words

HEADLINE: Borders Group and Intel Promote High-Speed Wireless Internet Access at Borders Books & Music Stores Nationwide

DATELINE: ANN ARBOR, Mich. & SANTA CLARA, Calif., March 11, 2003

BODY:

Borders Group Inc. and Intel Corporation today announced an agreement to launch a joint marketing campaign to promote the availability of high-speed wireless Internet access to customers at more than 400 Borders Books & Music(R) locations nationwide. The program coincides with the launch of the Intel(R) Centrino(TM) mobile technology for notebook PCs that feature built-in wireless capability.

The co-marketing agreement between Borders and Intel will include a signage program that identifies where Intel-verified wireless Internet zones (aka hotspots) are located. T-Mobile is providing the wireless service offered at Borders and has worked with Intel to verify the compatibility of the network with Intel Centrino mobile technology.

"We are extremely excited about Centrino mobile technology's ability to provide a better wireless broadband experience and integrate of Wi-Fi into the lives of our customers," said Tami Heim, president, Borders stores. "More than 400 Borders hotspot locations will be live by this summer, enhancing our stores and reinforcing Borders as the best loved provider of books, music, movie and entertainment products."

"In preparation for the launch of Intel Centrino mobile technology, Intel is working with leading edge companies such as Borders to verify wireless compatibility and drive awareness of hotspots and wireless technologies that will change how and where people compute," said Ann Lewnes vice president, Intel Sales and Marketing Group, and director, Intel Inside(R) Program and Co-Marketing. "Whether at work, in an airport or cafe, Centrino mobile technology offers the freedom and flexibility of being unwired."

About Borders Group, Inc.

Borders Group is a leading global retailer of books, music, video and other information and entertainment items with stores in the United States, United Kingdom, Australia, New Zealand, Singapore, and the commonwealth of Puerto Rico. A FORTUNE 500 company headquartered in Ann Arbor, Mich., Borders Group employs 32,000 worldwide and operates over 405 Borders domestic superstores, 31 international Borders stores, 37 Books etc. locations and approximately 775 Waldenbooks stores. Teamed with Amazon.com, the company also offers online shopping through Borders.com and Waldenbooks.com. More detailed information on the company is available at www.bordersgroupinc.com. Information on Borders stores is available through www.bordersstores.com.

About Intel

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

Important note: Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. See http://www.intel.com/products/centrino/more_info for more information.

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March 11, 2003, Tuesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: Attention Business And Technology Editors

LENGTH: 841 words

HEADLINE: Roxio Announces 'Save The Day' Integrated Marketing Campaign for Easy CD & DVD Creator 6 Platinum Launch National Sweepstakes, Retail Promotions and Advertising Campaign to Support The Launch of Its New Easy CD & DVD Creator 6 Platinum Software

DATELINE: SANTA CLARA, Calif., March 11

BODY:

Roxio, Inc. (Nasdaq: ROXI), The Digital Media Company(R), provider of the best selling digital media software in the world, announced today its integrated consumer marketing campaign that includes a national sweepstakes, retail promotion and an advertising campaign for the recent launch of its new Easy CD & DVD Creator(TM) 6; The Digital Media Suite(TM), the only PC-based integrated software suite that includes feature-rich digital media applications desired by today's "digital consumer" to capture, edit, manage and burn photos, videos, music and data to CD or DVD.

Roxio and ESPN The Magazine have partnered to introduce its national "Save The Day" sweepstakes, www.roxio.com/savetheday, a promotion that offers consumers the chance to win a grand prize trip to any sports event in a major U.S. city of choice. First and Second prizes include a wireless notebook PC based on Intel Centrino mobile technology, Fujifilm(R) FinePix 3800 digital camera and Roxio's best selling software products Easy CD & DVD Creator 6, PhotoSuite(R) 5 Platinum and VideoWave Movie Creator(TM).

In addition to its national "Save the Day" sweepstakes, Roxio will also roll out, in March or April issues, a national advertising campaign for Easy CD & DVD Creator 6 in leading trade publications including, Computer Shopper, PC Magazine and PC World.

Targeting 60 million households, other nationwide marketing programs include in-store promotions and newspaper insert advertisements with leading retailers, such as: CompUSA, BestBuy, Circuit City, Office Depot, Staples and others.

While supplies last, consumers who purchase Roxio's Easy CD & DVD Creator 6 at participating retail stores will receive a free custom Roxio-branded CD/DVD wallet.

"The recent launch of Easy CD & DVD Creator 6 will be supported and celebrated by various marketing promotions designed to build retail foot traffic and sales," said Scott Steinberg, vice president of strategic marketing at Roxio. "We have an integrated campaign, that will extend throughout the year, targeted towards the "digital consumer" to promote sales of the product and the Roxio brand."

About Roxio

Roxio, Inc. provides the best selling digital media software in the world. Roxio makes award-winning software products for CD/DVD burning, photo editing

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CNBC News Transcripts

SHOW: Business Center (5:00 PM ET) - CNBC

March 11, 2003 Tuesday

LENGTH: 760 words

HEADLINE: Intel introduces wireless Internet connection chip

ANCHORS: RON INSANA

REPORTERS: CORY JOHNSON

BODY:

RON INSANA, co-anchor:

In tonight's Innovations, from wired to wireless, Intel is set to formally announce its latest chip design. It's a big step for the semiconductor king because the new chip is more than a chip. It includes a wireless Internet connection and may represent a new hope for Silicon Valley. Cory Johnson has the story.

CORY JOHNSON reporting:

On Wednesday, Intel will launch a new kind of chip, the Centrino. It's more than a faster chip consuming less power.

Unidentified Man: Go!

JOHNSON: Intel Chairman Andy Grove is cutting the wire. Intel's Centrino will include a special radio that will allow laptops to connect to the Internet wirelessly. But is that enough to bring back the moribund PC business? Intel's launched a $300 million ad campaign, and the hype has begun.

(Excerpt from Intel advertisement)

JOHNSON: Intel is helping to build wireless networks across the world at Hilton Hotels, Borders bookstores and at McDonald's, which said it would begin a trial installation of wireless hot spots at stores in three markets, including New York City. The idea for Intel is to take wireless networks beyond their nascent stages.

Mr. ANDY KESSLER (Former Venture Capitalist): The Wi-Fi has mostly been used by geeks and out-of-work programmers sitting in Starbucks surfing job sites for--for putting their resume on there. And now with Intel pushing it, I think this can become a very mainstream usage of wireless technology.

JOHNSON: You don't have to wait for Intel's new chip to get connected to a Wi-Fi network. All you've got to do is head out and get yourself one of these, you know, no-less-than-$100 network connection cards--even a guy with a broken arm can do this--plug this into your PC, get yourself to a wireless hot spot like this Boulanger Cafe here in Mountain View, California, and just like that, you're wireless.

Intel argues that its chips are better, with an easier connection, improved battery life. And the goal of all this promotion is to convince computer users something they haven't been convinced of for years: that new technology will require a new computer.

Mr. SHANE RAU (IDC): If people don't see the need--if they think, for example, 'Hey, I've got a suitable notebook now, and I can take that back and forth between home and work, and I've got my desktop PC at h--at work, I'm fine now'--and that is a legitimate concern because, through this economic downturn, people have not been buying a whole lot of PCs. They've been getting by with what they have.

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Espicom Business Intelligence

March 11, 2003

LENGTH: 473 words

HEADLINE: Intel invests in another four Wi-Fi companies

BODY:

Intel Corp says it has invested in four companies involved in Wi-Fi technology since the beginning of 2003. The investments support Intel's initiatives to expand the use of and create new capabilities for high-speed wireless networks. The Intel Communications Fund has provided funding for: rovingIP.net, a clearinghouse for Wi-Fi service providers; Vivato, a Wi-Fi switch manufacturer; Broadreach Networks Ltd, a broadband Internet access provider; and, Pronto Networks, a provider of carrier-class OSS solutions for large hotspot networks. Financial terms of the investments were not disclosed.

The Intel Communications Fund now has completed seven investments in Wi-Fi companies since October 2002, when Intel announced plans to invest US$150 million in companies pursuing Wi-Fi technology. Since making its first investment in a wireless networking company in 1999, the Intel Communications Fund has invested in more than 15 wireless networking companies.

"These investments are part of Intel's efforts to help accelerate the deployment of high-speed wireless networks worldwide," said Mark Christensen, Intel Vice President and Director of Intel Capital's Communications Sector. "The products and services these companies provide will complement Intel Centrino mobile technology, which debuts March 12. These companies represent the ecosystem of Wi-Fi companies that will make widespread adoption of wireless broadband a reality."

Broadreach Networks, based in London, provides "pay-as-you-go" public wired and wireless broadband Internet access. The company, operating under the brand name ReadytoSurf, has a network of more than 350 terminals in 41 locations, making it the largest operator of managed public Internet terminals in the UK.

Pronto Networks provides carrier-class operations support systems (OSS) that enable Wi-Fi service providers to deploy and manage public WLAN hotspots. The Pleasanton, California-based company's software handles provisioning, configuration, authentication, access control, security, pre-paid and post-paid billing, and roaming settlement for large public WLAN networks, in addition to remotely managing and updating intelligent access points.

rovingIP.net, based in Bellevue, Washington, provides inter-network services to broadband wireless service providers and operators of public and private 802.11 wireless networks.

Vivato manufactures Wi-Fi switches that offer a new way to deploy high-bandwidth Wi-Fi networks for enterprises and service providers. The San Francisco company's switches extend the range of Wi-Fi from metres to kilometres using phased array antenna techniques, enabling large areas of indoor and outdoor coverage for Wi-Fi clients.

Intel, the world's largest chip maker, is also a manufacturer of computer, networking, and communications products.

LOAD-DATE: March 12, 2003

"McDonald's is all about mobility: mobility to pick up and go," said Byron Seese, a graphic designer and notebook user who buys the occasional Extra Value Meal at McDonald's. "The only people that stay there are old people sipping coffee for three hours and parents with young screaming kids. It's the perfect environment for computing if I ever saw one. I'm seeing a nice cozy corner with a fireplace, overstuffed armchairs, and mood music--with the happy colors of day glow orange and bright red, with fine paintings of Grimace and Ronald smiling manically down on me as my keyboard gets shiny from the grease."

Most Recent Wireless Stories:

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LOAD-DATE: March 25, 2003

That's caused grumbling among some PC makers, who think they may be able to do better by mixing and matching Pentium-Ms with chipsets and Wi-Fi chips from other companies.

However PC makers handle the situation, analysts expect Wi-Fi to catch on with consumers.

"Wireless is something people will demand in their laptops from now on," said Gartner Dataquest Inc. analyst Martin Reynolds in San Jose, Calif.

Reynolds says Intel's Centrino package will use less power and be faster than previous mobile chipsets. That will likely spur sales.

"The U.S. PC market is mature," he said. "Everyone who wants one has a computer. The problem is; how do you grow shipments into a market where everyone has one? One way is to move buyers from desktop to notebook, market the notebooks in a more compelling manner. Make them faster, lighter and give them wireless capability. That's what Intel is doing."

He says adding Wi-Fi will enable some new uses for mobile PCs down the road.

"It will be a while before this happens, but you could go to a place in an airport that sells music CDs. Instead of buying a physical copy for $15 though, you could download it onto your laptop for say $5 instead," Reynolds said.

"And in the future, wireless laptops will be so powerful that it will be possible to download the latest videos. A traveler would only have to go to someplace where they are offering movies for sale and download one," he added.

As desktop prices are coming down, mobile PC prices are dropping even faster.

So says NPG Group analyst Steve Baker in Port Washington, N.Y. That's spurring sales of mobile PCs. Wi-Fi makes portables even more attractive to people who've been reluctant to go mobile.

As recently as 2000, more than 70% of all PCs sold in the U.S. were desktops, NPG Group says.

Passing Desktops

At the end of 2002, it was closer to parity. About 55% of PCs were desktops, and 45% were portables. This will be the year of the crossover, Baker says.

"Notebooks are certainly poised to represent the majority of dollar value in the U.S. In terms of dollar sales, there's no question notebooks will pass desktops this year," Baker said.

Although NPG doesn't track worldwide figures, that figure may be even higher. Space is at a premium in Asia and Europe. And portables are selling well overseas.

Intel's been trying to pump up interest in Centrino with a series of media events. Last month, it invited journalists on both coasts to take rides in a Boeing 747 outfitted with Wi-Fi.

Germany's Lufthansa plans to outfit its planes with Wi-Fi gear. So do Scandinavian Airlines System and Japan Airlines.

Creating New Uses

On March 3, Intel talked about its Centrino marketing plans in a series of interviews. Though it declines to name a figure, it says it'll spend more than it did to launch its latest PC processor, the Pentium 4. It previously said it spent $300 million just on P-4 ads.

As it rolls out its new chips, Intel is also trying to create new uses for wireless devices. It wants to spur sales of Wi-Fi devices and services -- and sell more of its chips.

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March 11, 2003 Tuesday Home Edition

SECTION: Business; Part 3; Page 3; Business Desk

LENGTH: 318 words

HEADLINE: Intel Funds Four More Wireless Companies

BYLINE: Terril Yue Jones, Times Staff Writer

BODY:

As part of an effort to spend $150 million to kick-start the market for wireless Web surfing, Intel Corp. said Monday that it was investing in four companies, including two in California, that develop equipment and software for wireless Internet access.

While many technology sectors remain weak, wireless fidelity -- dubbed Wi-Fi -- is promising.

Wireless networks in homes, offices and public areas such as hotels and convention centers allow users to surf the Web and access their e-mail without having to plug into a fixed location.

"These investments are part of Intel's efforts to help accelerate the deployment of high-speed wireless networks worldwide," said Mark Christensen, Intel vice president and director of Intel Capital's communications sector. "These companies represent the ecosystem of Wi-Fi companies that will make widespread adoption of wireless broadband a reality."

The Santa Clara, Calif., chip maker said it invested an undisclosed amount in Pronto Networks of Pleasanton, Calif., which produces software that enables "hot spots" where users can go online wirelessly; San Francisco-based Vivato, which makes equipment that expands the range of wireless access; RovingIP.net in Bellevue, Wash., a clearinghouse for Wi-Fi service providers; and Broadreach Networks Ltd. in London, a high-speed Internet access provider.

Intel has invested in 11 other wireless companies since 1999.

The investments come at a time of accelerated activity on the wireless front. Also Monday, Intel said it was teaming up with Borders Group Inc. to promote wireless access at more than 400 Borders bookstores nationwide.

On Wednesday, more than a dozen computer manufacturers will unveil laptop computers using Intel's Centrino chip packages, which use a newly developed Pentium microprocessor to run wireless applications.

Shares of Intel fell 11 cents to $15.90 on Nasdaq.

LOAD-DATE: March 12, 2003

Important note: Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. See http://www.intel.com/products/centrino/more_info for more information.

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LOAD-DATE: March 11, 2003

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March 11, 2003, Tuesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS, FOOD AND TECHNOLOGY EDITORS

LENGTH: 899 words

HEADLINE: McDonald's and Intel Debut High-Speed Wireless Access in Manhattan Restaurants;
Eat In and Log On at McDonald's! Fast, Easy Internet Access Begins in New York Several Hundred McDonald's Restaurants in Three Major U.S. Markets by Year End

BODY:

OAK BROOK, Ill. and SANTA CLARA, Calif., March 11 /PRNewswire-FirstCall/ -- Selected McDonald's restaurants in New York City now offer high-speed wireless access for customers who are constantly "on-the-go" and looking for a place to eat, rest and log-on to their laptop computers. The pilot program currently includes 10 McDonald's restaurants in Manhattan and is scheduled to expand to several hundred restaurants in three major U.S. markets by year's end.

McDonald's Corporation (NYSE: MCD) and Intel Corporation (Nasdaq: INTC) today launched a joint marketing campaign promoting a new dimension of customer service that delivers high-speed wireless access to coincide with the launch of Intel(R) Centrino(TM) mobile technology for notebook PCs that feature built-in wireless capability. The co-marketing agreement between McDonald's and Intel will include advertising, in-store merchandising and a signage program that identifies where Intel-verified wireless Internet zones are located.

"McDonald's is bringing broadband to Broadway," said Mats Lederhausen, president of McDonald's Corporation's Business Development Group. "McDonald's pioneered convenience so it makes perfect sense for us to offer our customers a great way to unwire, unwind, enjoy an Extra Value Meal and catch up on email."

McDonald's is scheduled to test high-speed wireless access in hundreds of restaurants in New York City, Chicago and a major market in California by the end of the year.

"McDonald's is known for being at the heart of where people work and live, so offering our customers another value -- Internet access -- is a great example of being the most relevant choice out there," said Lederhausen.

"Both McDonald's and Intel understand how important value, speed, convenience and ease of service are for today's time-pressed consumer."

For the next three months, wireless-enabled laptop customers in New York City who purchase an Extra Value Meal(TM) at participating McDonald's restaurants will receive an added benefit -- one hour of free high-speed wireless Internet access. Customers also can purchase a single session of up to 60 minutes for $3.00.

Current estimates indicate the number of wireless consumers is growing rapidly, with more than 78 million "windshield warriors" nationwide today.

"This partnership is all about a new way of connecting with our customers and maximizing the power of our convenient locations," said Lederhausen.

McDonald's is offering an open network for all wireless users, so customers do not have to set up an account.

"Whether you're a 'road warrior' who's starving for a trusted wireless connection or a student seeking a quick and convenient place to download, Intel is working with leading edge companies such as McDonald's to verify wireless compatibility and drive awareness of hotspots and wireless technologies that will change how and where people compute," said Ann Lewnes, Intel vice president, Sales and Marketing Group, and director, Intel Inside(R) Program and Co-Marketing. "Whether at work, in a restaurant, at an airport or hotel, Centrino mobile technology delivers the freedom and flexibility of being unwired."

Intel's Wireless Verification Program includes engineering and testing of the Intel Centrino mobile technology with network architecture that supports various wireless access points, software combinations, hotspot locations, and wireless service providers to ensure they are all compatible, further enhancing the consumer's wireless experience.

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PR Newswire

March 11, 2003, Tuesday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS AND TECHNOLOGY EDITORS

LENGTH: 795 words

HEADLINE: Roxio Announces 'Save The Day' Integrated Marketing Campaign for Easy CD & DVD Creator 6 Platinum Launch;
National Sweepstakes, Retail Promotions and Advertising Campaign to Support The Launch of Its New Easy CD & DVD Creator 6 Platinum Software

DATELINE: SANTA CLARA, Calif., March 11

BODY:

Roxio, Inc. (Nasdaq: ROXI), The Digital Media Company(R), provider of the best selling digital media software in the world, announced today its integrated consumer marketing campaign that includes a national sweepstakes, retail promotion and an advertising campaign for the recent launch of its new Easy CD & DVD Creator(TM) 6; The Digital Media Suite(TM), the only PC-based integrated software suite that includes feature-rich digital media applications desired by today's "digital consumer" to capture, edit, manage and burn photos, videos, music and data to CD or DVD.

Roxio and ESPN The Magazine have partnered to introduce its national "Save The Day" sweepstakes, www.roxio.com/savetheday, a promotion that offers consumers the chance to win a grand prize trip to any sports event in a major U.S. city of choice. First and Second prizes include a wireless notebook PC based on Intel* Centrino* mobile technology, Fujifilm(R) FinePix 3800 digital camera and Roxio's best selling software products Easy CD & DVD Creator 6, PhotoSuite(R) 5 Platinum and VideoWave Movie Creator(TM).

In addition to its national "Save the Day" sweepstakes, Roxio will also roll out, in March or April issues, a national advertising campaign for Easy CD & DVD Creator 6 in leading trade publications including, Computer Shopper, PC Magazine and PC World.

Targeting 60 million households, other nationwide marketing programs include in-store promotions and newspaper insert advertisements with leading retailers, such as: CompUSA, BestBuy, Circuit City, Office Depot, Staples and others.

While supplies last, consumers who purchase Roxio's Easy CD & DVD Creator 6 at participating retail stores will receive a free custom Roxio-branded CD/DVD wallet.

"The recent launch of Easy CD & DVD Creator 6 will be supported and celebrated by various marketing promotions designed to build retail foot traffic and sales," said Scott Steinberg, vice president of strategic marketing at Roxio. "We have an integrated campaign, that will extend throughout the year, targeted towards the "digital consumer" to promote sales of the product and the Roxio brand."

About Roxio

Roxio, Inc. provides the best selling digital media software in the world. Roxio makes award-winning software products for CD/DVD burning, photo editing and video editing. Roxio's family of products includes category leading products Easy CD & DVD Creator(TM) (Windows) and Toast(R) (Macintosh) for CD/DVD burning, PhotoSuite(R) for digital photography, and VideoWave(R) for digital video. Roxio also makes GoBack(R) the 1 selling system recovery software that enables PC users to instantly recover from system crashes, virus attacks and data loss. Roxio's current install base is in excess of 100 million users. Roxio distributes its products globally through strategic partnerships with major hardware manufacturers, in stores with the leading worldwide retailers, through Internet partnerships and also sells its products direct at (www.roxio.com). Headquartered in Santa Clara, California, Roxio also maintains offices in Minnesota, Canada, United Kingdom, Netherlands, Germany and Japan. The company currently employs more than 400 people worldwide. Roxio is a member of the S&P SmallCap 600 and the Russell 2000 Index.

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Taiwan Economic News

March 11, 2003

LENGTH: 257 words

HEADLINE: TAIWAN SENDS LARGEST FOREIGN DELEGATION TO CEBIT

BODY:

Taipei, March 11, 2003 (CENS)--A total of 640 Taiwanese information-technology (IT) manufacturers will constitute the largest foreign exhibition group at the CeBIT computer trade show to be held in Hanover, Germany from March 12 to 19. In spite of a possible war between the U.S. and Iraq, many Taiwanese IT manufacturers expect business to return to normal in the second half this year, which is the major reason behind their enthusiastic presence at the show.

They estimate function-packed wireless equipment to grab central stage at the show and the rollout of Intel's Centrino processor for notebook computers to heat up demand in this segment. Some Taiwanese industry insiders expect Dell Computer, Hewlett-Packard, Toshiba and other major brands to consolidate orders for notebook PCs with a few contract makers, such as Quanta Computer, Compal Electronics and Inventec this year. Dell, HP and Toshiba jointly account for half of world notebook computer market. Many of the island's heavyweight IT companies will send their top executives to CeBIT this year to promote products and directly contact customers. The executives include VIA Technologies president W.C. Chen, BenQ Corp. chairman K.Y. Lee, and Elitegroup Computer Systems T.C. Jiang. The U.S. will send 264 companies to CeBIT this year, making it the second-biggest foreign delegation, followed by Britain (228 suppliers), South Korea (150), and Hong Kong (over 100). Mainland China will have 88 firms at the show, up more than 40% from last year's 63 exhibitors.

JOURNAL-CODE: WTEN

LOAD-DATE: March 11, 2003

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TELECOMWORLDWIRE

March 11, 2003

LENGTH: 150 words

HEADLINE: Intel and Toshiba team to advertise wireless hotspots

BODY:

Chip maker Intel Corp and Toshiba's Computer Systems Group have entered a joint marketing agreement for the promotion of wireless broadband hotspots.

The deal has been made to coincide with the upcoming launch of Intel's Centrino wireless mobile technology for notebook PCs.

The marketing project will seek to increase awareness of wireless broadband hotspots in public locations including coffee shops, hotels and shops and will feature advertising, direct marketing and information at point-of-sale terminals.

As part of the agreement Toshiba is planning to launch a number of new products that feature Intel Centrino technology on 12 March 2003. The company has also joined Intel's Wireless Verification Program to perform interoperability testing.

The financial terms of the agreement were not disclosed.

((Comments on this story may be sent to tww.feedback£m2.com))

LOAD-DATE: March 11, 2003

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AFX European Focus

March 10, 2003 Monday

SECTION: COMPANY NEWS

LENGTH: 319 words

HEADLINE: Intel signs deals with China Netcom, China Mobile for WLAN hotspots

DATELINE: BEIJING

BODY:

Intel Corp said it has signed agreements with China Netcom Corp Ltd, one of China's two fixed-line operators, and China Mobile, the country's biggest mobile phone operator, to build wireless local area network "hot spots" in public areas.

Intel did not disclose the value of these agreements and no one from the company was immediately available for comment.

The companies will work together to establish WLAN hotspots in a range of public areas such as hotels, airports and conference centres to boost mobile internet use.

For Intel, the deal is aimed at helping increase sales of laptops using its new Centrino mobile technology which is being launched in the US on March 12.

Centrino is a new wireless chip package that includes a microprocessor, formerly known as Banias, chipsets and wireless networking technology for high-speed wireless internet access.

The package will reduce power consumption and extend battery life in laptops.

In its statement, Intel said China Netcom and China Mobile will be in charge of WLAN infrastructure deployment to ensure signal coverage. Intel will help the companies verify the network with Intel Centrino mobile technology to assure that an Intel Centrino mobile technology-based notebook is able to connect to WLANs easily and quickly.

China Netcom has already started rolling out WLANs in public 'hotspot' areas in many domestic cities, delivering wireless access services for business users.

A recent report by China-based telecoms consultancy BDA, expects China Netcom and its bigger rival China Telecom to use WLAN as a key competitive tool to promote broadband and compete in each other's territories.

It expects China Mobile to integrate WLAN with its GPRS network to boost use of its network.

nma/pb

For more information and to contact AFX: www.afxnews.com and www.afxpress.com

ISIN-NO: US4581401001; HK0941009539

LOAD-DATE: March 11, 2003

Hotspot operators simply sell and install the hardware and conduct maintenance at the hotspot location, while Toshiba and Accenture maintain responsibility for back-end service and support to end users. Interested dealers may visit www.hotspot.toshiba.com for more information.

About Toshiba America Information Systems Inc.

Toshiba Computer Systems Group is a division of Toshiba America Information Systems Inc. ("TAIS"), a leading vendor for portable computers. In addition to notebooks, the company offers portable and wireless accessories, Pocket PCs, projectors and mobile server computing solutions for business customers under the Toshiba brand name. For more information call 800-TOSHIBA or visit the company's Web site at www.csd.toshiba.com.

With headquarters in Irvine, TAIS is comprised of multiple divisions that provide computer, communications and imaging products and services. Products include industry leading portable computers, PDAs, mobile computing accessories, servers, including communications and portable servers, storage subsystems, cable modems, digital business telephone systems, voice-mail, digital cameras, security systems, and projectors.

TAIS provides sales, marketing, services and manufacturing for its wide range of information products in the United States and Latin America. TAIS is an independent operating company owned by Toshiba America Inc., a subsidiary of Toshiba Corp., which is a world leader in high technology and integrated manufacturing of electrical and electronic components, products and systems. Toshiba has global sales of more than $40 billion and more than 300 subsidiaries and affiliates worldwide.

About Intel

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

Information in news releases, including without limitation product prices, specifications, content of services, and contact information, is current on the date of the news announcement, but is subject to change without notice.

Note: Important Information: Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. System performance measured by MobileMark(a) 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. See http://www.intel.com/products/centrino/more_info for more information.

Note to Editors: Intel and Centrino are trademarks or registered trademarks of Intel Corp. or its subsidiaries in the United States and other countries.

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LOAD-DATE: March 11, 2003

experiences on a wide range of mobile devices, bringing relevant, engaging information to consumers no matter where they are. IONA's new Mobile Orchestrator is similarly focused on breaking down the barriers that mobile users face. IONA's Mobile Orchestrator can work together with Macromedia Flash to provide seamless, effective experiences regardless of location or network connectivity."

"Increasing productivity is one of the most widespread goals of today's enterprise," said Michael J. Reuschel, president, Unisys Global Communications and Media. "A key to increasing productivity for our customers is allowing them to offer employees equal access to applications whether in the office or on the road. As an integrator of the numerous solution components needed to keep the mobile worker productive, Unisys believes that IONA's Mobile Orchestrator can play a vital role in providing the occasionally connected user with flexible access to enterprise applications regardless of network connectivity."

"Our value-proposition is enabling enterprises to achieve real-time advantage by rapidly building and deploying enterprise Web-based applications," said Ed Anuff, vice president of strategy, Vignette. "The concept of Occasionally Connected Computing as supported by IONA's new Mobile Orchestrator has the potential to make such enterprise Web-based applications intelligently and reliably available regardless of network connectivity, thus eliminating the obstacle of network latency and empowering application users to be equally productive whether in the office or on the go."

About IONA

IONA is the leading provider of Rapid Integration software with more than 4,500 customers worldwide. IONA's award-winning Rapid Integration software products are built on: service-oriented architectures that increase reuse of software assets to deliver lasting results, standards-based software that enables vendor independence, and incremental deployment capabilities that lower the customer's risk.

Founded in 1991, IONA(R) (NASDAQ: IONA) is headquartered in Dublin, Ireland, with U.S. headquarters in Waltham, Massachusetts and offices worldwide. For additional information about IONA, visit our Web site at http://www.iona.com.

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URL: http://www.businesswire.com

LOAD-DATE: March 11, 2003

The Proof Is In The Platform

Elements of Centrino include the CPU, the chipset and a wireless mini-PCI card.

Notebooks using the Centrino logo must use all of these components.

Notebooks with only the mobile CPU can use the Pentium-M logo.

Intel says a 1.6GHz Pentium-M will outperform a 2.4GHz mobile Pentium 4 in processing power and battery life.

http://www.crn.com

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LOAD-DATE: March 10, 2003

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Electronic Engineering Times

March 10, 2003

SECTION: NEWS; Pg. 1

LENGTH: 1195 words

HEADLINE: Mobile blitz built on Centrino platform, low-power 'M' CPU -- WLANs take Intel outside

BYLINE: Anthony Cataldo

HIGHLIGHT: Intel Corp., it seems, has found a new religion, and it isn't about the worship of raw clock speed. As the company rolls its latest mobile platform across the globe this week, starting in Tokyo, listeners aren't likely to hear the usual bragging about how the CPU giant crammed another muscle-bound processor into portables on the brink of a thermal meltdown.

BODY:

To be sure, Intel's Centrino platform is still ambitious at the hardware level, bringing together a new microprocessor built from scratch, a chip set and an embedded wireless-LAN module. But this rollout is about more than components. Intel's goal is to create a portable computing environment that doesn't just mimic desktop systems, but offers glitch-free wireless access, longer battery life and no-hassle operation.

Intel is spending more than $300 million in marketing and promotions alone-more than it shelled out for the Pentium 4-and dispatching thousands of engineers and technicians to validate Centrino-compatible hot spots worldwide. This largesse will be disbursed to traditional OEMs as well as some new players that fall outside Intel's sphere of influence, including hotel chains, train stations and airports.

"They're doing a lot of validation with the OEMs at the platform level and then in the field to ensure that the way the machines are shipped, and how hot spots are set up, makes it an easy experience [for users] to find the access point and get logged on," said Nathan Brookwood, an analyst with Insight64.

However, the platform is already drawing criticism for supporting only the IEEE 802.11b wireless-LAN specification. Though .11b is the prevailing WLAN standard, a/b combination systems are now in the market, and the emerging .11g spec is gaining momentum.

At the same time, the entry of such a mighty rival is a double-edged sword for competitors. "Telling the world about Wi-Fi and why you should get it should put pressure on IT departments and hotels to install access points," said Rich Redelfs, president and chief executive officer of Atheros Communications Inc., which offers dual-mode Wi-Fi chips for portable systems. "The bad point is that they're going to try to convince you to use only Intel." Atheros, which counts HP, IBM, NEC and Toshiba among its customers, also provides silicon that goes into access point cards and PCMCIA cards sold by Intel.

An Intel spokeswoman said that almost all the major PC makers will be at a launch event this week showing off new Intel-based portable systems.

Goodbye, desktop

The microprocessor that powers Centrino-Intel's first mobile CPU that isn't derived from a desktop processor-is the Pentium M. Developed under the code name Banias, this device-also being launched this week-is not to be confused with the Pentium 4 Processor-M, which actually runs faster than the new device but will eventually be phased out.

Designed for low-power operation, the Pentium M can run on 0.85 to 1.5 volts and can dynamically switch voltages based on the usage level. In that regard, Intel says, the Pentium M outdoes the company's existing SpeedStep

"To the extent that the new product can deliver and dramatically improve the wireless experience so you can use your machine for several hours without electrical outlets and carrying the charger with you, then that will be a substantial improvement in usability," Brookwood said.

-Additional reporting by Patrick Mannion.

http://www.eet.com

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LOAD-DATE: March 10, 2003

"The agreement between T-Mobile and Intel is a big win for our customers," said Cole Brodman, senior VP and chief development officer at T-Mobile, in a statement. "The Intel Centrino mobile technology represents an important step toward consumerizing Wi-Fi service, making it more affordable and more accessible through a range of integrated devices."

iPass' Russo agreed on the Centrino front and noted his company has a separate multi-year agreement with Intel to validate the interoperability between the future release of iPassConnect client software and Intel's mobile technology-based notebooks.

"The nice thing about Intel is that they are about to launch the Centrino platform," Russo said. "While we've been deploying this Wi-Fi network, cobbling together the islands of connectivity globally, the equation that Intel brings is fueling the demand side of it, opposed to the supply side of it. We anticipate that Intel will accelerate the Wi-Fi market by virtue of the Centrino launch."

Russo isn't worried about competition, either, and showed no concern about inside partners taking a more active networking role in its Cometa stand.

A potential conflict of interest isn't expected to get in Intel's way. Cravens believes that there are enough hot-spots and markets to go around -- enterprise for Cometa and consumer for T-Mobile -- without companies stepping on each other's feet. That's good news for late comer Toshiba CSG.

Following suit, Toshiba announced its plans for public location hot-spots across North America in the coming months, with up to 10,000 expected by the end of 2003, through a partnership with Accenture.

The management consulting and technology services company will deliver the business and operational support functions including network operations, billing and settlements processing and help-desk support for end users.

"Toshiba aims to be the dominant supplier of 802.11b hot-spot infrastructure and expects a considerable portion of the established public Wi-Fi market to be driven by hot-spot operators and location owners capitalizing on the hot-spot trend," said Oscar Koenders, Toshiba CSG's VP of product marketing and worldwide product planning, in a statement.

LOAD-DATE: March 14, 2003

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eWeek.com

March 10, 2003 Monday

SECTION: WIRELESS

LENGTH: 558 words

HEADLINE: Dell, IBM Revamp Laptops;
Dell and IBM will unveil notebook revamps that are centered around Intel's Centrino mobile processor chip set.

BYLINE: Carmen Nobel, carmen_nobel£ziffdavis.com

BODY:

Dell, of Round Rock, Texas, will introduce two Latitude notebooks designed to be desktop replacements: the D600, which has a 14 inch screen; and the D800 (seen on left), which has a 15.4 inch screen, officials said.

Both notebooks include integrated smart card and Gigabit Ethernet capabilities as well as dual band (2.4GHz and 5GHz) wireless antennas. Bluetooth connectivity will be optional.

Intel's Centrino chip set includes the Pentium M chip--formerly known as "Banias"--an accompanying chip set and an 802.11b module, Intel officials said. Three versions will be released, with speeds ranging from 900MHz to 1.6GHz. Intel already sells Pentium notebook processors that are primarily enhanced desktop chips that consume less power but hamper battery life. The Pentium M is designed for notebooks.

"The key to it is that it does more work per clock cycle than Pentium 4," said Howard Locker, chief architect of desktop and mobile systems at IBM, in Raleigh, N.C. "Clock frequency is linear with voltage, which is linear to power."

Dell is offering a line of the D Family that supports the Centrino chip set as well as a D line that supports the Pentium M processor in conjunction with Dell's TrueMobile WLAN (wireless LAN) support. TrueMobile uses dual mode WLAN components from Broadcom Corp. The TrueMobile 1300 supports 802.11b and the draft standard of 802.11g; the TrueMobile 1400 supports 802.11a, 802.11b and 802.11g, according to Dell officials.

The Centrino supports only 802.11b.

The D Family notebooks ship standard with QuickSet, a customizable software application that allows users to control power management settings--for when a user is on an airplane as opposed to delivering a presentation, for example. QuickSet also lets users enlarge desktop icons for high resolution displays, officials said.

Furthermore, Dell will unveil a line of hardware to support the new notebooks. The D/Dock is a desktop expansion station, and the D/Port is a basic port replicator. The D/View is an adjustable stand that takes advantage of the notebooks' new bottom docking ports, allowing users to elevate the notebook display to eye level.

Industry observers said the D Family launch is a sign that Dell is learning to innovate in areas other than marketing.

"They are definitely pushing the envelope," said Leslie Fiering, an analyst at Gartner Inc., in San Jose, Calif. But, Fiering added, "IBM still has the enterprise tools to beat them."

IBM, for its part, this week will launch new T series and X series notebooks in conjunction with the Centrino launch. Like Dell, IBM will offer Centrino models as well as Pentium M models with third party 802.11a and 802.11b support. Locker said the new lines are "significantly thinner and lighter" than previous models, and they will support roaming among WLANs.

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eWeek

March 10, 2003 Monday

SECTION: NEWS&ANALYSIS; Pg. 9

LENGTH: 588 words

HEADLINE: Dell, IBM Revamp Laptops;
New lines revised for Intel chip and wireless.

BYLINE: Carmen Nobel

BODY:

When Intel Corp. unveils its Centrino mobile processor chip set this week, several of the company's licensees will use the launch as an opportunity to revamp their notebook lines.

Leading the pack will be Dell Computer Corp., which will announce what company officials are calling its most significant advancement since 1997, and IBM, which is staying ahead of the curve with a new line of ThinkPads.

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The Herald (Glasgow)

March 10, 2003

SECTION: Pg. 16

LENGTH: 241 words

HEADLINE: Intel bets its chips on Wi-Fi

BYLINE: Mark Smith

BODY:

INTEL, the world's largest microchip maker, is betting that wireless broadband, or Wi-Fi, will be the big technology of 2003, as it unveils its new wireless chip package, the Centrino, on Wednesday.

The Centrino marks Intel's biggest product launch since the introduction of its Pentium 4 chip in 2000, and reflects the latest wireless initiatives of some of its biggest customers.

Hewlett-Packard, Dell, IBM, Gateway, and Toshiba have all, in the past year, been working on technology to allow users to roam across different networks and different countries - much the same as mobile phone users can do now.

However, as the launch dates for third-generation (3G) services continue to be pushed back, many industry observers believe seamless roaming for laptops and tablets - which is already a fast-growing technology - could steal 3G's thunder.

Mike Newnham, the UK finance director for Orange, the UK's largest mobile phone operator with 13.3 million subscribers, remains sanguine - even though Orange is not planning to fully launch its 3G services until mid-2004.

"There is a lot of talk about Wi-Fi being the being the be-all and end-all," Newnham said. "We just don't think this is the case. I see the two technologies complimenting each other."

Intel's Centrino packs a Pentium-M processor, designed for mobile use, which brings wireless network capabilities into a single package with extended battery life.

LOAD-DATE: March 10, 2003

LOAD-DATE: March 18, 2003

Toshiba's hotspot solution can generate revenues through connection for wireless access at each hotspot deployed by the hotspot operator. Hotspot operators simply sell and install the hardware and conduct maintenance at the hotspot location, while Toshiba and Accenture maintain responsibility for back-end service and support to end users. Interested dealers may visit www.hotspot.toshiba.com for more information.

About Toshiba America Information Systems, Inc.

Toshiba Computer Systems Group is a division of Toshiba America Information Systems, Inc. ("TAIS"), a leading vendor for portable computers. In addition to notebooks, the company offers portable and wireless accessories, Pocket PCs, projectors and mobile server computing solutions for business customers under the Toshiba brand name. For more information call 1-800-TOSHIBA or visit the company's Web site at www.csd.toshiba.com.

Headquartered in Irvine, Calif., TAIS is comprised of multiple divisions that provide computer, communications and imaging products and services. Products include industry leading portable computers, PDAs, mobile computing accessories, servers, including communications and portable servers, storage subsystems, cable modems, digital business telephone systems, voice-mail, digital cameras, security systems, and projectors. TAIS provides sales, marketing, services and manufacturing for its wide range of information products in the United States and Latin America. TAIS is an independent operating company owned by Toshiba America, Inc., a subsidiary of Toshiba Corporation, which is a world leader in high technology and integrated manufacturing of electrical and electronic components, products and systems. Toshiba has global sales of over $40 billion and more than 300 subsidiaries and affiliates worldwide.

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

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* Other marks and brands may be claimed as the property of others.

Note: Important Information: Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. System performance measured by MobileMark* 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations.

See http://www.intel.com/products/centrino/more_info for more information.

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LOAD-DATE: March 10, 2003

Financial terms of the investments were not disclosed.

The Intel Communications Fund, managed by Intel Capital, was established in September 1999, and focuses on accelerating Intel voice and data communications initiatives. The $500 million fund will devote $150 million specifically for investment in Wi-Fi companies worldwide.

The Intel Communications Fund has made more than 80 investments in 17 countries on five continents. For more information about the fund, visit www.intel.com/capital/portfolio/funds/icf.htm.

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

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* Other marks and brands may be claimed as the property of others.

Note: Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. System performance measured by MobileMark* 2002.

System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations.

See http://www.intel.com/products/centrino/more_info for more information.

2003 Intel Corporation

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LOAD-DATE: March 10, 2003

Beyond the additional marketing, T-Mobile USA also expects to generate additional interest through alterations to its rate plans that eliminate local offerings in favor of nationwide access.

"The initial pricing plans went along with our initial launch in 1,200 locations and was more localized," said Thompson. "We have since nearly doubled the number of locations and the new plans reflect a more nationwide approach."

The new plans cut unlimited monthly access from $50 per month to $30 per month if a customer signs a one-year contract or $40 per month without a contract.

T-Mobile USA also reduced its pay-as-you-go pricing model from $3 for 15 minutes of access and 25 cents for each additional minute to 10 cents per minute with a minimum of one hour. The company said the new plan drops the charge for one hour of usage from $14.24 to $6 and was made to reflect customer usage patterns.

"We have found that people are spending more than 15 minutes at a time using the service," Thompson said. "People are not just popping into a Starbucks and downloading their e-mails or synchronizing their address books."

Analysts support the price drop, but noted it was still too high to generate significant growth and was somewhat offset by the contract requirement.

"T-Mobile would certainly see more response to its price reduction if it did not require users to enter into a service contract," Campbell said.

The new plans also undercut AT&T Wireless Services Inc.'s recently launched GoPort Wi-Fi-based offering, which charges between $10 per day for access at a single location to $70 per month for unlimited access.

T-Mobile also announced last week it had signed a multi-year lease agreement with the San Francisco International Airport to provide the HotSpot service throughout the airport. The agreement's first phase includes coverage at United Airlines Gates 80 through 90 in Terminal 3, United Airlines' Red Carpet Club and the ticket and lobby area of the New International Terminal Building. T-Mobile USA said the rest of the airport should be covered by the end of the year.

With the San Francisco airport announcement, T-Mobile USA said it now provides service in 15 airports nationwide and plans to announce further expansion later this year.

T-Mobile USA is confident its expansion plans along with increased awareness of its HotSpot service will continue to drive customer adoption and further enhance its traditional wireless service offerings.

"The HotSpot service complements the rest of our wireless service offerings," Thompson said. "We are a wireless service provider and want to offer what our customers want."

GRAPHIC: San Francisco Mayor Willie Brown, Intel Chairman Andy Grove, T-Mobile USA Vice Chairman Bob Stapleton and Airport Director John L. Martin "cut" an ethernet computer cord March 5 at the San Francisco International Airport at a reception to announce the "unwiring" of the airport.

LOAD-DATE: March 12, 2003

This processor had no problem with everyday computing tasks, crunching CDs into Windows Media Audio files as fast as any desktop system I've tried lately. Finally, at 51/2 pounds (a gaudy, plastic-wood cover for the lid adds half a pound and subtracts any semblance of style) and pricing from $1,300 to $1,400, this laptop -- and others like it -- shouldn't require unpleasant trade-offs between cost and weight. It makes a decent case for Intel's new hardware.

But home users may not care. Intel's Centrino and Pentium M efforts face two major marketing problems -- one of which is largely Intel's own fault.

The first is the decreasing importance of battery life to many laptop users. Over the past year, hefty but cheap laptops built around desktop-grade Pentium 4 processors have become one of the most popular segments of the laptop market.

What these laptops' buyers want are a low price, a big screen and a fast processor, not just freedom from an electrical outlet. A desktop machine can provide all that, but only at the cost of giving up one's desk to a bulky tower case, stand-alone monitor and speakers, and yards of cables.

The second issue is the Pentium M's advertised speeds. Available in 1.3, 1.4, 1.5 and 1.6 GHz versions, it will look significantly slower than existing Pentium 4 and Pentium 4-M processors.

Intel says that's not important, since the efficiency it has wrung out of the Pentium M lets it do more in each clock cycle. "We will actually surpass the performance of the fastest mobile Pentium 4," said Don MacDonald, the company's marketing director for mobile products. He cited benchmark tests done in February that showed a 2.4 GHz Pentium 4-M being beaten to the finish line by a 1.6 GHz Pentium M.

Other manufacturers have made this claim before. Intel's chief rival, Advanced Micro Devices, no longer even advertises its Athlon processors' clock speeds, instead labeling them by their performance relative to other processors. Apple routinely makes this argument as well.

But Intel has relied on megahertz marketing for years, to the point where the market lacks any other standard vocabulary to describe a computer's speed. Now Intel will run into the same problem AMD and Apple have had for years: You can't go into a store and see a figure that counts everybody's clock cycles equally. If the Pentium M gets Intel to start speaking this kind of language, that alone will be a newsworthy development.

Living with technology, or trying to? E-mail Rob Pegoraro at rob£twp.com.

Reported By TechNews.com, http://www.TechNews.com

(20030309/WIRES /)

TYPE: news

LOAD-DATE: March 10, 2003

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LOAD-DATE: March 09, 2003

Business Times (Malaysia) March 8, 2003, Saturday

agents portal service (Greatlink), corporate website (www.lifeisgreat.com.my) with e-connect facilities for policyholders, mobile alerts to agents via SMS on status of proposals submitted, and the Great Eastern Marketing System with an e-signature facility.
GRAPHIC: Kong (right) and Lai exchange documents after the signing ceremonyyesterday.

LOAD-DATE: March 9, 2003

Other elements in the company's mobility technology roadmap include the agents portal service (Greatlink), corporate website (www.lifeisgreat.com.my) with e-connect facilities for policyholders, mobile alerts to agents via SMS on status of proposals submitted, and the Great Eastern Marketing System with an e-signature facility.

LANGUAGE: ENGLISH

JOURNAL-CODE: m05

LOAD-DATE: March 10, 2003

through the trip that they've forgotten to put flour, say, on the list, then this will automatically be added to the relevant aisle list."

Keep taking the tablets

The MCRL system can run on various platforms, from a PDA to trolley tablet computer. German grocery giant Metro is to start trials in the next few months using a new trolley mounted tablet developed by Wincor-Nixdorf.

Tablet technology, such as Microsoft's new Smart Display concept, will also be helped by the imminent launch of Intel's Centrino chip. This combines wireless capability with the processor in single chip that is compliant with IEE802.11b standards and will provide a simple solution for mobile point of sale and information kiosks.

"Consumers are already enthusiastic about self-service checkouts and information," says Intel worldwide manager for the retail industry Jon Stine. "PDAs are being used for product information in areas like automotive and consumer electronics, but why wait for widespread adoption of these devices when you can deliver the self-service systems shoppers want using the new tablet technologies? We expect widespread use of these systems within two years."

While store-based systems such as these certainly help meet customer demands for self-service, the technically savvy already want to use their own pocket PCs or smart mobile phones as well. About 2,000 shoppers are using pocket PCs to shop with Tesco, with sales from this high-spending group reaching GBP 2 million a month.

"If the retailer has a suitable infrastructure in place - as with Tesco and .Net - there is not a huge amount of work involved in adding pocket PC or smart phone devices to the network," says Microsoft retail industry manager Adrian Morrish. "Pocket PCs are still used in the business market, so shoppers tend to be high-spending customers and the sort of figures Tesco is achieving are not really surprising."

Over the next couple of years, use of pocket PCs and other PDAs is likely to become far more widespread as too, suggests Morrish, will the next generation of smart phones, already starting to appear from companies, such as Orange.

"The smart phone will become the key consumer interface, combining a telephone and organiser that can be used for paying for goods, building shopping lists, or interacting with the retailer's wireless network in-store to access product information," he says. "Using the phone in-store would be no more complex than 'roaming' over alternative networks."

Many of these developments are already possible with 'old-fashioned' mobiles. Paybox has already implemented a number of mobile phone payment schemes, notably in the hospitality sector. BT is also looking at this area and has developed a system with incubator company, Gabrielle, which uses a mobile phone to interact with a voice-activated window display.

This can be used to provide product information or complete a transaction outside normal shopping hours. Barcodes can also be transmitted to the mobile, which can then be scanned at point-of-sale to give a promotional discount or confirm the purchase when the goods are later collected.

The checkoutless store may still be a dream - but it is certainly no longer a distant dream.

LOAD-DATE: March 7, 2003

The Netherlands.For more information, please visit www.nec-online.com.About interFRONTIERSinterFRONTIERS is a Cyprus-based company and the Regional Business Development Unit for NEC and Packard Bell in the Mediterranean, Adriatic, Middle East and Africa areas (excluding South Africa). interFRONTIERS is formed by a team of professionals who between them have held key positions with IT companies and other blue chip organisations in Europe, the Middle East and Africa, covering the area of sales, channel management and brand development. interFRONTIERS, a company unique by definition, specialises in business and channel development working under the umbrella of the NEC International Operations Team in Angers. interFRONTIERS is responsible for qualifying and recruiting new channel partners; development and management of the channel, as well as offering sales, bids and tenders and local marketing support in the designated region.For further information about Packard Bell and NEC Computers International:Christina Stylianou, Marketing
DirectorinterFRONTIERS Services LtdRegional Business Development Unit forNEC & Packard Bell SEEMEATel: + 357 22625222, Fax:+ 357 22625223Will Rankin, MCS/Action, Dubai, United Arab Emirates, Tel: +971 3902980, Fax: +971 4 3908161visit www.packardbell.com and http:/ /www.nec-cebit.com.All brands are the property of their respective owners.

JOURNAL-CODE: WMEC

LOAD-DATE: March 6, 2003

spectrum less scarce-- using the Wi-Fi market as a case study, (2) the problem with the current spectrum management system and (3) suggestions for reform, particularly increased reliance on unlicensed spectrum use.

Spectrum Reform Benefits--the Wi-Fi Case Study

All of the benefits from innovative spectrum usage are illustrated by the marketplace and technical success of Wi-Fi. Wi- Fi is the name that the Wireless Ethernet Compatibility Alliance (now the Wi-Fi Alliance) gave to the wireless standards collectively known as 802.11--defined by the Institute for Electrical and Electronic Engineers (IEEE). Wi-Fi devices operate today in the 2.4 and 5 GHz unlicensed bands. The key to Wi-Fi's astonishing success has been the regulatory regime that prevails in these bands - which allows anyone to sell and use equipment in these bands without first obtaining a license from the FCC, provided only that the equipment meet certain technical specifications. This regime allowed manufacturers enormous freedom to innovate and to respond to changing market forces - knowing that no government licensing process would create a roadblock between their technology and consumers.

This regime also allowed consumers, schools and businesses to build their own Wi-Fi networks by spending their own money as quickly or as slowly as they wished, without the need for government approval or having to navigate any kind of licensing process. As result of the freedom enjoyed both by technology manufacturers and technology users, the pace of Wi-Fi innovation has been brisk. The speed of Wi-Fi equipment has jumped from 1-2 Mbps to 54 Mbps. The range of the equipment has also improved, while its costs have plummeted. Products have moved from 4 to 5 chip solutions in 1999 to the 2-chip solutions prevalent today with much more of the radio frequency circuits integrated, allowing broad expansion into a number of products. In 1999, only 802.11b PC cards and enterprise access points were available. Today, users can choose between 802.11a, 802.11b, or dual-band (802.11a and 802.11b) products for enterprise, small offices, or homes.

The pace of Wi-Fi deployment and the expansion of Wi-Fi product lines has also been brisk. Wi-Fi products have extended beyond PC cards and access points to PDAs, printers, and a host of consumer electronic goods. In addition to providing portable Internet access, Wi-Fi home networks are enabling consumers to use multiple computers with their broadband connections and peripherals. One company already incorporates a Wi-Fi (802.11a) transmitter in its personal media center allowing video streaming to TVs. These technological innovations have and will continue to generate a strong consumer response. Although 802.11 products did not begin shipping in significant volume until 1999, the growth has been staggering. Sales have increased from 7.9 million wireless LAN chipsets in 2001 to a projected 23-25 million chipsets in 2002, according to Allied Business Intelligence.1 Gartner estimated that over $2 billion worth of wireless LAN equipment was sold last year.2 In-Stat projects that the Wi-Fi hardware market will grow to nearly $4 billion in 2004.3

The Wi-Fi Alliance, the leading Wi-Fi trade organization, has grown to over 200 companies and certified over 500 products in just three years. PublicInternetProject.org detected the presence of nearly 14,000 access points in Manhattan alone.4 According to the Yankee Group, over 700,000 U.S. companies are now using more than one million access points.5 Public access locations are multiplying worldwide from airports to hotels to neighborhood coffee shops, and most recently, onboard commercial aircraft. In the United States, AT&T Wireless, Wayport, T-Mobile and others sell access for notebook users with wireless networking capability.

And we believe that this is just the beginning. Many in the high- tech community believe this technology - and the license exempt regulatory model - can be used to create wireless broadband networks to the home. From Athens, Georgia to Dartmouth University to Tacoma, Washington to San Jose, California, "WLAN clouds" providing wireless access for entire neighborhoods are appearing.

The Wi-Fi phenomenon is also going global. Korea, already the world's broadband leader, also seems ready to lead in wireless networking. Leading Korean telecom providers have rolled out over 10,000 public access locations since their launch last year. The 2003 World Radio Conference, to be held in Geneva this June, seems poised to make a global spectrum allocation at 5 GHz for wireless data networking. From the UK to France to Hong Kong, regulators have already considered, or are now considering, the ability of this technology to provide a wireless broadband connection to the home or office. The Wi-Fi Alliance recently announced the creation of Wi-Fi Zone, a logo program/ database directory for Wi-Fi public access worldwide.

The main obstacle to the allocation of additional unlicensed spectrum at 5 GHz had been concerns that unlicensed devices in part of this band could harm US military radars, thereby posing a threat to our troops and homeland security. However, Intel and other high tech companies worked closely with the Department of Defense to find a technical solution to these concerns - and did so. We believed it was possible both to protect our military assets, and at the same time allow consumers to reap the benefits of innovation in wireless technology. A solution was possible because a Wi-Fi system can be designed with sufficient intelligence to identify when military radar begins to operate in its channel and rapidly move its operation to a different unused channel - thus avoiding interference to the radar..

With this technical solution in place, the United States has now joined other countries in calling for a global 5 GHz allocation for Wi-Fi and similar systems - but with a regulatory regime that would incorporate the technical solution to protect our military radars around the world. We believe that with industry and the U.S. Government jointly advocating this position at the World Radio Conference, common worldwide rules can be created to our mutual benefit. Intel applauds the efforts of those at the NTIA, FCC and DoD to develop acceptable technical parameters that will increase the amount of spectrum available for Wi-Fi operation at 5 GHz.

2. Non-interfering Easements

The FCC should also determine whether non-interfering easements for new technologies such as agile radios could be created that would not impose significant interference on existing licensees. Much of the spectrum has already been allocated to dedicated uses, but at any instant little of the spectrum is typically being used, even in densely populated cities. Many applications use spectrum only intermittently or only in certain places, but foreclose all other uses because current radios have limited tuning range and use simple encoding methodologies. Moore's Law has begun to change that. Soon radios will be spectrally agile and very flexible in how they encode information in their signal. As a result, radio systems will be able to share the spectrum in much more efficient ways, thereby greatly relieving spectrum scarcity.

For example, the FCC recently opened a Notice of Inquiry considering unlicensed use on broadcast television and the 3650- 3700 MHz bands. Given the current limitations of television receivers, most of the TV channels in any geographical area are unused. Advanced radio techniques, however, might permit unlicensed use, without any adverse impact on the broadcasters. Indeed, because the channels "in use" seldom change, agile radios within current technical capability may be able share these frequencies. Another method under consideration is to use Global Positioning System receivers built into the unlicensed devices to determine the device location relative to fixed broadcast transmitters. Experience in these bands could facilitate the development of more advanced applications where use varies much more rapidly over time and space.

For this approach to work, the FCC will have to set interference limits for particular technologies specified in objective terms. Radio use of spectrum is not an "all or nothing" proposition. Rather, radios add to the background noise over which other radios must "shout" to be "heard." By analogy, someone whispering in the hallway creates far less "interference" than would someone shouting in the first row of this hearing room. The FCC will have to determine the amount of interference that a particular radio system adds to the environment and when that is too much (that is, when it should move elsewhere). These limits could define the boundaries of a non-interfering easement. For example, a user of a particular frequency would be required to shut off within a few micro-seconds once it detects an incumbent user begins transmitting. Together with limitations on the amount of power such underlay radios might use, this approach could allow valuable transmissions with virtually no impact on the allocated users of the various bands. Using my previous analogy, we don't prohibit people from talking in the hallway - we just don't want them doing so during the hearing! The current FCC rules allow a person to scream here, a person to scream in Pittsburgh and everyone else has to remain quiet. Clearly, there are better ways to utilize a precious resource like spectrum. Given the pace of innovation in the electronics industry, we should begin reworking our regulatory structure to anticipate the future now.

Conclusion

In closing I would like to make two points. First, serious spectrum reform is going to require hard work. The technical questions before the FCC are formidable. And incumbent users have a legitimate interest in assuring that their use is not significantly interfered with. The policy and political issues will also be difficult. But thanks to the work of the FCC and its Spectrum Task Force we are off to a promising start. Second, policy makers should always keep the consumer interest front and center. Some of the existing holders of spectrum or businesses that might face competition as a result

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The Advocate (Baton Rouge, LA.)

March 5, 2003, Wednesday METRO EDITION

SECTION: News; Pg. - Filename 4c biz jumps 3/5 Story Lead STOCKS Private economists largely agreed with Greenspan's assessment, saying that the super-brisk pa Editor rlb

LENGTH: 857 words

DATELINE: 4c biz jumps 3/5

BODY:

STOCKSPrivate economists largely agreed with Greenspan's assessment, saying that the super-brisk pace of refinancings and home-price appreciation seen in recent years probably will slow, which could restrain buying behavior.Still, they also agreed with Greenspan's assessment that the housing market will remain healthy."Low mortgage rates still represent a stimulus to the housing market and there is still a population of people out there who are tempted to buy or refinance the home they own because of low mortgage rates," said Bill Cheney, chief economist at John Hancock.With all the news that emerged Tuesday, the Dow fell 132.99, or 1.7 percent, to close at 7,704.87, having declined 53 points Monday. It was the lowest level seen since Oct. 10, when blue-chip stocks finished at 7,533.95.The broader market also finished lower. The Nasdaq composite index lost 12.52, or 1 percent, to 1,307.77. The Standard & Poor's 500 index dropped 12.82, or 1.5 percent, to 821.99.On Tuesday, a powerful bomb hidden in a backpack exploded at an airport in the southern Philippines, killing at least 19 people, including an American, and wounding more than 100. The government called it a "brazen act of terrorism." No one claimed responsibility for the blast.The attack exacerbated an already tense mood on Wall Street. Analysts say investors have been unwilling to commit to stocks on fears of a possible war with Iraq that could threaten a fragile economic recovery.Meanwhile, shares of the world's largest automakers and their suppliers slumped Tuesday after U.S. vehicle sales for February came in below expectations a day earlier and a top industry analyst said vehicle demand may slump in the United States for several years.

Deutsche Bank Securities analyst Rod Lache on Tuesday lowered his stock ratings for General Motors Corp. and Ford Motor Co., as well as suppliers Delphi Corp. and Visteon Corp., from "hold" to "sell.Recent developments have led us to become increasingly pessimistic on the downside risk to profitability for U.S. autom

akers over the next few years," Lache said in a research report.Hurt by harsh winter weather in parts of the country and a sluggish economy, U.S. auto sales fell 6.5 percent in February. GM, the world's biggest automaker, and No. 2 Ford both said they would cut production in the coming quarter to offset rising inventories.Such moves will affect their own bottom lines as well as those at companies such as Delphi and Visteon, which supply myriad parts, components and systems for vehicles.All four companies mentioned in Lache's report saw their shares fall Tuesday.The hardest hit were the two suppliers. In trading on the New York Stock Exchange, Delphi was off 62 cents, or 8 percent, to close at $7.08. Visteon was down 49 cents, or 7.8 percent, to close at $5.78.Also on the NYSE, GM was down $1.89, or 5.7 percent, to finish at $31.27, while Ford was off 33 cents, or 4 percent, to close at $7.74.GM's sales were off 19 percent in February. Ford's were flat after a robust performance a year earlier.In his report, Lache predicts a downturn in U.S. vehicle demand lasting through 2005. His forecast is for U.S. light vehicle sales declining to 15.7 million in 2005, down from 16.8 million last year.One of the reasons for Lache's pessimism is the shift from leasing to buying vehicles, which tends to reduce "churn," because purchasers typically own a vehicle for 54 months versus 39 months for lessors.He also says higher energy costs and a reduction in mortgage refinancing could add downward pressure on big-ticket spending.Lache also cites the rising number of Asian vehicles in the North American market, reducing market share for the Big Three.

INTELRival chip makers say consumers need not buy the entire Centrino package to get effective technology for WiFi wireless connectivity, which some industry pundits consider the biggest thing in computing since the Internet.Savvy corporate laptop buyers will likely buy both Centrino systems and hybrids that use Pentium-M along with non-Intel wireless components, said Rich Redelfs, chief executive of wireless chip maker Atheros Communications.Analysts say Intel's Centrino blitz could give a big boost to WiFi, which is expanding as cafes, airports, hotels and convenience stores set up "wireless clouds" of connectivity to attract customers and add revenue.Thanks in part to WiFi, portable computing has taken off in recent years. According to researchers at IDC, worldwide unit sales of desktop computers

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INTERNET BUSINESS NEWS

March 5, 2003

LENGTH: 129 words

HEADLINE: Portland named 'least wired' city in Intel wireless survey

BODY:

Chip maker Intel Corp has completed its study into which cities in the US are the ones with the most wireless Internet connections.

Portland, Ore was awarded the top spot because of its growing number of public and commercial wireless hotspots, cell phone coverage and Internet penetration.

In second place came San Francisco followed by Austin in Texas, Seattle, Orange County in California, Washington D.C., San Diego, Denver, Ventura in California and Boston. Los Angeles was found to be in 13th place while New York could only manage 23rd.

The survey has been conducted to coincide with the upcoming launch of Intel's Centrino mobile technology for wireless notebook PCs later this month.

((Comments on this story may be sent to info£m2.com))

LOAD-DATE: March 5, 2003

NEC Computers (UK) Limited, a division of NEC Computers International, supplies NEC servers, desktops and notebook computers, designed and manufactured for the business user. For the small to medium sized enterprise purchaser, NEC Computers (UK) Limited has distinguished itself from other direct operations by offering a true business partnership. The NEC philosophy is to ensure that the customer receives unbiased advice about requirements backed by trustworthy service and support. NEC Computers (UK) Limited operates throughout the UK and Ireland. With sales offices in Maidenhead and its own state of the art manufacturing facility in Livingston, Scotland, NEC Computers (UK) Limited is able to serve its customers with prime efficiency and speed.

According to IDC, NEC Computers (UK) Limited was the third largest PC vendor in 2002 and achieved a higher growth rate than its major competitors.

Throughout 2002 NEC continued to improve its market share and demonstrated g rowth of double the market average for notebooks and 6.5 times the market average for servers.

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LOAD-DATE: March 5, 2003

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Business Wire

March 4, 2003, Tuesday

DISTRIBUTION: Business/Lifestyle/Consumer/Feature Editors

LENGTH: 813 words

HEADLINE: Portland Named "Hottest" Spot in Intel's "Most Unwired Cities" Survey; Wireless Mobile Computing on the Rise Nationwide

DATELINE: SANTA CLARA, Calif., March 4, 2003

BODY:

The most unwired city in America is ... Portland, Ore.

The Portland metropolitan statistical area (MSA) ranks as the top market for wireless Internet accessibility, according to Intel's "Most Unwired Cities" survey released today. The survey reveals a growing number of metropolitan areas across the country where people have greater freedom to access information and entertainment on notebook PCs and wireless Internet connections.

Outpacing typical trendsetters Los Angeles (No. 13) and New York (No. 23), Portland and its residents are quickly embracing this new unwired lifestyle, evidenced in part by the region's growing number of "hotspots." Hotspots are areas where users can tap into WiFi -- short for wireless fidelity networks -- with their laptop PCs, personal digital assistants and other devices. They enjoy a truly mobile experience without the constraint of a fixed or wired connection.

Following Portland on the top 10 unwired MSA list are San Francisco; Austin, Texas; Seattle; Orange County, Calif.; Washington, D.C.; San Diego; Denver; Ventura, Calif.; and Boston. The West leads all other regions with eight metropolitan areas in the top 10.

The complete list of Intel's "Most Unwired Cities" is available at: www.intel.com.

The Intel "Most Unwired Cities" survey was conducted by Bert Sperling, a research analyst well known for compiling Money Magazine's annual "Best Places to Live" feature.

"For so long, being 'wired' was shorthand for being connected to the Internet," Sperling said. "Now, we don't need the wires. Wireless network technology is changing the way people work and live in these cities."

More than 3,700 hotspots are currently in the United States.(1) They appear in such unexpected locations as a barbershop on Long Island, a chowder house in Seattle, a pub in California's Lake Tahoe and a pool hall on Maui. In addition, such companies as Starwood Hotels, Marriott International Inc. and Connexion by Boeing are enabling customers to enjoy an unwired mobile computing experience while sitting in a hotel lobby or while flying at 30,000 feet.

"WiFi is the most revolutionary technology to hit the computing world since the arrival of the Internet browser in the early 1990s," said Sean Maloney, Intel executive vice president and general manager of the Intel Communications Group. "WiFi promises to do for computing what cell phones did for voice communication. It is eliminating boundaries and allowing people to access the Internet and communicate freely while they're on the go."

The Unwired PC

Along with the rapid deployment of hotspots, analysts foresee dramatic growth in the sales of wireless-enabled notebook PCs. Market research firm IDC predicts that wireless-enabled notebooks will represent 35 percent of all mobile PC sales in 2003 and 96 percent in 2006.(2)

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INTERNET BUSINESS NEWS

March 4, 2003

LENGTH: 128 words

HEADLINE: Intel and T-Mobile to promote wireless Internet use in the UK

BODY:

Chip maker Intel Corp has entered into a marketing agreement with mobile operator T-Mobile for a wireless broadband service.

T-Mobile's Wi-Fi 802.11 wireless Internet service is now available in 2,100 locations across the UK while Intel has just launched its Centrino mobile technology for notebook PCs which feature built-in wireless functionality. Both companies will focus on promoting the use of Intel Centrino-based notebooks with T-Mobile HotSpots through advertising, online marketing campaigns and co-branded signage.

In related news T-Mobile has introduced new monthly pricing plans for unlimited use of its HotSpots service.

No financial terms of the agreement were revealed.

((Comments on this story may be sent to info£m2.com))

LOAD-DATE: March 4, 2003

"Intel Centrino mobile technology will usher in a new generation of notebook PCs that are thinner, lighter and offer built-in wireless LAN capabilities," said Anand Chandrasekher, Intel vice president and co-general manager of the Intel Mobile Products Group. "Centrino mobile technology will help bring this exciting world of wireless to the mainstream."

About the Survey

Survey findings are based on the number of public and commercial wireless access points (hotspots), cell phone coverage offering wide area network Internet access and Internet penetration. The data was also calculated at the per-capita level to determine how many people share hotspots within a given city or region. The data was collected from a variety of industry sources and weighted across a 100-point scale.

Intel, the world's largest chip maker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

Intel and Intel Centrino are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

* Other marks and brands may be claimed as the property of others.

Note:

Important Information: Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. System performance measured by MobileMark* 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. See http://www.intel.com/products/centrino/more_info for more information.

2003 Intel Corporation

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LOAD-DATE: March 4, 2003

About T-Mobile USA, Inc. Based in Bellevue, Wash., T-Mobile USA, Inc. is one of the fastest growing providers of wireless voice and high-speed data services. T-Mobile operates a nationwide GSM/GPRS voice and high-speed data network that covers more than 210 million people. Additionally, T-Mobile operates the largest carrier owned Wi-Fi (802.11b) network in the country, under the service name 'T-Mobile HotSpot.' T-Mobile USA is a member of the T-Mobile International group, the mobile telecommunications subsidiary of Deutsche Telekom (NYSE: DT). T-Mobile is committed to providing the best value in wireless service through its GET MORE? promise to provide customers with more minutes, more features and more service than any other wireless provider. For more information, visit the company web site at www.t-mobile.com.

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LOAD-DATE: March 4, 2003

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TELECOMWORLDWIRE

March 4, 2003

LENGTH: 129 words

HEADLINE: Intel and T-Mobile to promote wireless Internet use in the UK

BODY:

Chip maker Intel Corp has entered into a marketing agreement with mobile operator T-Mobile for a wireless broadband service.

T-Mobile's Wi-Fi 802.11 wireless Internet service is now available in 2,100 locations across the UK while Intel has just launched its Centrino mobile technology for notebook PCs which feature built-in wireless functionality. Both companies will focus on promoting the use of Intel Centrino-based notebooks with T-Mobile HotSpots through advertising, online marketing campaigns and co-branded signage.

In related news T-Mobile has introduced new monthly pricing plans for unlimited use of its HotSpots service.

No financial terms of the agreement were revealed.

((Comments on this story may be sent to tww.feedback£m2.com))

LOAD-DATE: March 4, 2003

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Associated Press Worldstream

March 3, 2003 Monday

SECTION: FINANCIAL NEWS

DISTRIBUTION: Europe; Britian; Scandinavia; Middle East; Africa; India; Asia; England

LENGTH: 682 words

HEADLINE: Intel steps outside the PC box with Centrino wireless initiative

BYLINE: MATTHEW FORDAHL; AP Technology Writer

DATELINE: SAN JOSE, California

BODY:

For years, Intel Corp.'s microprocessors for laptop computers differed little from those powering desktop PCs. At their core, the chips were designed for machines plugged into the wall, not juiced by a battery.

That changes this month as the world's largest semiconductor company ushers a new technology built from the ground up for mobile computing. The result, Intel says, is high performance and wireless capability with slower battery drain.

The technology, dubbed Centrino, is more than a new processor. It combines the energy-efficient chip, called Pentium M, with components designed to work reliably together and ensure the greatest power savings.

Some laptop vendors are sure to grumble, though, about having to include the entire Centrino package in order to use the brand name and benefit from Intel marketing, said Roger Kay, an analyst for the research firm IDC.

Intel already lets vendors use an "Intel Inside" logo. Now, the company will "certify" coffee shops, hotels and other wireless hotspots it deems compatible with the Centrino package.

Vendors who opt to mix Centrino's microprocessor with non-Intel components won't get certification and can't use a compatibility logo to advertise their hotspots.

"The last thing in the world you want to do is say 'wireless is great' and then have everybody have a bad experience," Intel chief executive Craig Barrett said.

He said Intel is "trying to be very careful with where we say it will work and under what conditions - and who we work with to bring the new technology into the marketplace."

Centrino's March 12 launch will be supported with an ad budget larger than the $300 million Intel spent for the Pentium 4 in late 2000. Teaser ads start Monday, promising Intel will not only change "how you work but where you work."

Rival chip makers say consumers need not buy the entire Centrino package to get effective technology for WiFi wireless connectivity, which some industry pundits consider the biggest thing in computing since the Internet.

Savvy corporate laptop buyers will likely buy both Centrino systems and hybrids that use Pentium-M along with non-Intel wireless components, said Rich Redelfs, chief executive of wireless chip-maker Atheros Communications.

Analysts say Intel's Centrino blitz could give a big boost to WiFi, which is expanding as cafes, airports, hotels and convenience stores set up "wireless clouds" of connectivity to attract customers and add revenue.

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Business Wire

March 3, 2003, Monday

DISTRIBUTION: Business Editors/High-Tech Writers

LENGTH: 933 words

HEADLINE: T-Mobile and Intel to Promote Wireless Broadband

DATELINE: BELLEVUE, Wash. & SANTA CLARA, Calif., March 3, 2003

BODY:

T-Mobile USA and Intel Corporation today announced an agreement to launch a joint marketing campaign to promote T-Mobile's WiFi (802.11) high-speed wireless Internet service, the most widely available public network of its kind with more than 2,100 locations across the country. The program coincides with the upcoming introduction of Intel(R) Centrino(TM) mobile technology for notebook PCs that feature built-in wireless capability. T-Mobile is also announcing new monthly pricing plans for unlimited T-Mobile HotSpot(SM) service, as the company further delivers on its GET MORE(R) promise to provide customers with the best overall value in their wireless voice, messaging and high-speed data services.

T-Mobile and Intel are working together to drive awareness of T-Mobile HotSpot service where notebook users can wirelessly connect to the Internet and corporate networks at fast speeds at airports, airport lounges, book stores and coffee houses.

In addition, to enhance the end users' wireless experience and enable interoperability, T-Mobile and Intel have conducted engineering testing or "verification" of the Intel Centrino mobile technology on T-Mobile's network. The two companies are also working on co-marketing initiatives, including advertising, on-line marketing campaigns and co-branded signage, to drive awareness for T-Mobile HotSpot locations.

T-Mobile today announced new monthly pricing plans. For $29.99 a month, customers get unlimited access, with an annual agreement, to the T-Mobile HotSpot service at more than 2,100 locations nationwide including Starbucks coffee houses, national and regional airports and American Airlines Admirals clubs. The service will also be available in new locations as they are deployed, including airports, Borders Books and Music, and United and Delta Air Lines clubs and lounges.

Intel's new Centrino mobile technology includes a new mobile processor, chipset and built-in WiFi capability that have been designed to work together to enable a great wireless notebook experience. This technology will be implemented in PC manufacturers' notebook computers and will be available in March.

"The agreement between T-Mobile and Intel is a big win for our customers," said Cole Brodman, senior vice president and chief development officer, T-Mobile USA. "The Intel Centrino mobile technology represents an important step toward consumerizing WiFi service, making it more affordable and more accessible through a range of integrated devices."

The Intel Centrino mobile technology brand represents Intel's best technology for mobile computing and is designed to deliver an unwired computing experience while enabling extended battery life, outstanding mobile performance and thinner and lighter form factors.

"Notebook users want the freedom of being unwired while enjoying longer battery life and cutting-edge performance when they are accessing the Internet," said Anand Chandrasekher, vice president, Intel Mobile Platforms Group. "Intel is pleased to work with the leading wireless service provider like T-Mobile to enable a great user experience with Intel Centrino mobile technology at T-Mobile HotSpots."

Copyright 2003 Business Wire, Inc.
Business Wire

March 3, 2003, Monday

DISTRIBUTION: Business Editors/High-Tech Writers

LENGTH: 638 words

HEADLINE: Intel Centrino Mobile Technology Advertising Begins; 'Unwire' TV Ads Humorously Show People on the Move Using Wireless Notebook PCs in Unexpected Places

DATELINE: SANTA CLARA, Calif., March 3, 2003

BODY:

Intel Corporation today begins a worldwide advertising campaign to support the upcoming product launch of Intel(R) Centrino(TM) mobile technology. Covering 11 countries, the campaign highlights innovative technology designed to create a new generation of wireless notebook PCs that bring true mobility to computer users.

Intel Centrino mobile technology represents Intel's best technology for wireless notebook PCs. The technology includes a new mobile processor, related chipsets and 802.11 wireless network capabilities that have been designed and tested to work together. In addition to wireless networking capabilities, Centrino mobile technology includes features designed to enable extended battery life, thinner and lighter notebook designs, and outstanding mobile performance. Centrino mobile technology will be introduced on March 12.

"Unwire" is the theme of the campaign's TV ads, which show businesspeople computing from their desks in unexpected places -- such as a diving board, an airport "people mover," a golf course driving range and an open-air sightseeing bus -- surrounded by crowds unaware of the odd presence of a desk un-tethered from its office.

"Centrino mobile technology is designed to enable wireless capabilities in smaller, lightweight PCs and make them truly mobile," said Pam Pollace, vice president and director of Intel's Corporate Marketing Group. "To help illustrate the freedom and flexibility that Centrino mobile technology brings, the 'Unwire' ad campaign humorously depicts people moving their work to surprising and unusual locations."

The "Unwire" campaign launches on March 3 with television teaser spots noting that "On March 12, Intel will not only change how you work, but where you work."

A larger, integrated campaign targeted at business and mobile computer users, IT professionals and tech-savvy consumers will break on March 12 in conjunction with worldwide events to introduce Centrino mobile technology. Television launch spots will carry such taglines as "Introducing Intel Centrino mobile technology, the new wireless laptop technology designed to help you unwire your life."

Print ads will include an eight-page insert featuring copy points that make such statements as "Intel has an urgent message for the wired world: 'Unwire.'" Additional print and online ads will describe the technology features of Centrino mobile technology.

The campaign, which also includes outdoor advertising and sponsorships, will run through June.

Euro RSCG MVBMS in New York created the "Unwire" television, print, online and outdoor advertisements, which are part of Intel's "Yes" integrated global marketing and advertising campaign.

For more information on the "Unwire" campaign and to view the advertising as it breaks, visit www.intel.com.

Intel, the world's largest chipmaker, is also a leading manufacturer of computer, networking and communications products. Additional information about Intel is available at www.intel.com/pressroom.

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Chicago Tribune

March 3, 2003 Monday, SPORTS FINAL EDITION

SECTION: Business; Pg. 8; ZONE: CN

LENGTH: 567 words

HEADLINE: Intel says package adds battery life, wireless mobility

BYLINE: By Matthew Fordahl, Associated Pres.

DATELINE: SAN JOSE, Calif.

BODY:

For years, Intel Corp.'s microprocessors for laptop computers differed little from those powering desktop PCs. At their core, the chips were designed for machines plugged into the wall, not juiced by a battery.

That changes this month as the world's largest semiconductor company ushers in a new technology built from the ground up for mobile computing. The result, Intel says, is high performance and wireless capability with slower battery drain.

The technology, dubbed Centrino, is more than a new processor. It combines the energy-efficient chip, called Pentium M, with components designed to work reliably together and ensure the greatest power savings.

Some laptop vendors are sure to grumble, though, about having to include the entire Centrino package in order to use the brand name and benefit from Intel marketing, said Roger Kay, an analyst for the research firm IDC.

Intel already lets vendors use an "Intel Inside" logo. Now, the company will "certify" coffee shops, hotels and other wireless hotspots it deems compatible with the Centrino package.

Vendors who opt to mix Centrino's microprocessor with non-Intel components will not get certification and cannot use a compatibility logo to advertise their hotspots.

"The last thing in the world you want to do is say 'wireless is great' and then have everybody have a bad experience," Intel Chief Executive Craig Barrett said.

He said Intel is "trying to be very careful with where we say it will work and under what conditions--and who we work with to bring the new technology into the marketplace."

Centrino's March 12 launch will be supported with an advertising budget larger than the $300 million Intel spent for the Pentium 4 in late 2000. Teaser ads start Monday, promising Intel will not only change "how you work but where you work."

Rival chipmakers say consumers need not buy the entire Centrino package to get effective technology for Wi-Fi wireless connectivity, which some industry pundits consider the biggest thing in computing since the Internet.

Savvy corporate laptop buyers will likely buy both Centrino systems and hybrids that use Pentium M along with non-Intel wireless components, said Rich Redelfs, chief executive of wireless chipmaker Atheros Communications.

Analysts say Intel's Centrino blitz could give a big boost to Wi-Fi, which is expanding as cafes, airports, hotels and convenience stores set up "wireless clouds" of connectivity to attract customers and add revenue.

Thanks in part to Wi-Fi, portable computing has taken off in recent years.

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Global News Wire

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Computer Reseller News

March 3, 2003

LENGTH: 59 words

HEADLINE: SECURITY - CENTRINO GETS VPN BOOST.

BODY:

Intel and Check Point Software Technologies are to work together to boost remote-access security for notebooks based on Intel's Centrino mobile chip technology. Check Point has developed an enhanced version of its VPN-1 SecureClient software to provide Centrino systems with virtual private network auto-launch capability in wireless environments.

JOURNAL-CODE: WPCD

LOAD-DATE: March 3, 2003

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eWeek

March 3, 2003 Monday

SECTION: NEWS&ANALYSIS; Pg. 1

LENGTH: 255 words

HEADLINE: Intel's Centrino Mobile Processor Gains Support;
Intel Corp. is expected to garner a round of OEM endorsements for its Centrino mobile platform when it is rolled out next week.

BYLINE: Jeffrey Burt and Carmen Nobel

BODY:

Intel Corp. is expected to garner a round of OEM endorsements for its Centrino mobile platform when it is rolled out next week. But don't look for notebook supporters to eschew alternative processing and connectivity for all their new designs just yet.

While Fujitsu PC Corp. will be on hand at the Centrino launch to unveil a version of its LifeBook S Series notebook, the company plans to ship a version featuring Advanced Micro Devices Inc.'s competing Athlon XP M mobile chip first.

"I am a firm believer that being tied to one vendor is not good," Fujitsu PC President and CEO Toshio Morohoshi said in an interview last week with eWeek.

Fujitsu PC plans to release the AMD based S Series midmonth. The San Jose, Calif., company will then ship a version with Centrino, which includes Intel's Pentium M chip and an accompanying chip set and a Wi Fi WLAN (wireless LAN) connectivity module, next month.

Fujitsu PC is not the only one with multiple irons in the fire. While most major notebook vendors plan to support Centrino, some, including IBM, will also offer alternative systems that include a Pentium M but use WLAN technology from Atheros Communications Inc. The Sunnyvale, Calif., company makes a chip set that supports 802.11b and the faster 802.11a.

"Most vendors will have a pure Centrino just to have one," said Ken Dulaney, an analyst with Gartner Inc., also in San Jose. "The major OEMs will likely offer Centrino, but for 802.11a/b, [they] will offer Atheros. Centrino is not a lock in all areas."

LOAD-DATE: March 18, 2003

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Fortune

March 3, 2003

SECTION: TECH/AIRBORNE; Pg. 169

LENGTH: 1118 words

HEADLINE: Intel Outside;
Forget "Intel Inside." The company is hoping to seriously expand its horizons with a bold play in wireless.

BYLINE: Peter Lewis

BODY:

Actually, "Centrino Inside" is the catch phrase that you'll hear ad nauseam starting later this month. What the heck is a Centrino? It's a major departure from earlier mobile microprocessor designs and the centerpiece of Intel's plan to promote--and dominate--computing in wireless network environments. You'll see more than a dozen new Centrino Inside portable computers, from almost all of Intel's PC partners: Toshiba, IBM, Dell, and many others.

Centrino, Intel says, is the first step toward a future when all computing devices communicate and all communications devices compute.

My own investigation concludes that "Centrino" is an anagram for "no cretin," "rent icon," and "not nicer." Let's examine each of those insights in greater depth.

No cretin: Although it operates at lower clock speeds than current Intel Pentium-4 Mobile chips, the main Centrino processor is far from computationally challenged. It's a new low-power, high-performance processor called the Pentium-M, which crams some 77 million transistors into an area smaller than your pinkie nail. Notably, the Pentium-M is the first processor designed from the scratchpad up for mobile applications. Until now the chips inside laptops have been desktop processors with their wings clipped.

That's only part of the story. The Centrino package comprises three main parts: Besides the Pentium-M, it includes a wireless radio chip for communicating securely with the growing number of 802.11b (Wi-Fi) wireless network hot spots, and a supporting chipset that Intel says will help improve the battery life and graphics performance of mobile devices.

PC makers typically select a processor from, say, company A, a chipset from company B, and maybe a wireless LAN chip from company C, trying to find the best balance of performance and price. Intel thinks it makes sense for PC makers to buy all the components from company A (a.k.a. Intel).

Greed aside, there is a logic to integrating the Pentium-M chip, the supporting chipset, and the wireless components into one package. Intel claims that Centrino-based computers can be made smaller and more efficient. Judging from the gigantic Gateway laptop I hoisted onto an airplane (see box), Centrino can also be used in notebooks that double as life rafts.

The company declined to provide specific battery claims ahead of the launch, but Shmuel "Mooly" Eden, Centrino's chief architect, said it would be reasonable to imagine business travelers working nonstop on a coast-to-coast flight on a single charge, or working a full day at the office without plugging in. Which means that you'd be able to watch at least one DVD movie on your flight, waste the day playing Snood at Starbucks, or subject your clients to mind-numbingly long PowerPoint presentations. According to Tom's Hardware (www.tomshardware.com), a leading independent source for PC hardware news, a test of an early Centrino notebook yielded about a 25% increase in battery life over comparable non-Centrino machines.

Intel says Centrino notebooks can roam seamlessly among thousands of "Centrino-certified" hot spots in airports, hotels, and other public places. (Pause here to spew your latte across Starbucks in disbelief.) No, really! Intel plans to

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Los Angeles Times

March 3, 2003 Monday Home Edition

SECTION: Business; Part 3; Page 2; Business Desk

LENGTH: 502 words

HEADLINE: California;
Intel Focuses on Wireless Future With New Chip;
The 'Centrino' will debut next week in the company's effort to get users to log on to the Net from everywhere.

BYLINE: Terril Yue Jones, Times Staff Writer

BODY:

Intel Corp., the world's No. 1 chip maker, is betting that 2003 will become the year of wireless computing.

The Santa Clara, Calif.-based company is set to unveil its new wireless chip package, dubbed "Centrino," next week. The initiative reflects that some of its biggest customers -- Hewlett-Packard Co., Dell Computer Corp., IBM Corp., Gateway Inc., Sony Corp. and Toshiba Corp., among them -- are planning to unleash a barrage of wireless products in the coming months.

Major hardware retailers and travel service providers also are expected to announce a range of products and services that greatly expand the ability to connect wirelessly while sitting in, say, a coffeehouse, a hotel lobby or at an airport gate.

For Intel, Centrino's debut represents its biggest product launch since the 2000 introduction of its Pentium-4 chip, its fastest ever for personal computers. It also marks the first time that the company has given a name to a product other than an individual microprocessor.

"They've established a technology ... that really means that within a couple of years we'll see pretty much every notebook product shipping with wireless," said Martin Reynolds, an analyst with the technology research firm Gartner Dataquest. "That's probably the biggest goal they have -- to get wireless out there so people are using their computers in more ways, in more places, which they hope will make people buy more of them."

Centrino packs a Pentium-M processor designed for mobile use, accompanying electronics and wireless network capabilities into a single package with extended battery life. The total package enables thinner and lighter notebook and tablet computer designs, Intel said.

Products with Centrino platforms will carry a butterfly-like logo with the words, "Centrino inside," reminiscent of the "Intel inside" logo that adorns many desktop and laptop PCs.

To boost Centrino's profile, Intel is launching a global ad campaign today, starting with a series of 15-second television ads that will air in prime time in 11 countries. Next week, the company will follow up with newspaper inserts as well as outdoor and online ads.

The ads feature the line: "Intel will not only change how you work, but where you work." They show people browsing the Internet on their laptops from a diving board, an airport people mover, a golf course driving range and a sightseeing bus.

Intel won't say how much it is spending on the ad campaign except that it is more than the $300-million budget for launching the Pentium-4.

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M2 PRESSWIRE

March 3, 2003

LENGTH: 858 words

HEADLINE: INTEL CORPORATION
T-Mobile and Intel to promote wireless broadband

DATELINE: Bellevue, Wash and Santa Clara, Calif

BODY:

T-Mobile USA and Intel Corporation announced an agreement to launch a joint marketing campaign to promote T-Mobile's WiFi (802.11) high-speed wireless Internet service, the most widely available public network of its kind with more than 2,100 locations across the country. The program coincides with the upcoming introduction of Intel Centrino(TM) mobile technology for notebook PC's that feature built-in wireless capability. T-Mobile is also announcing new monthly pricing plans for unlimited T-Mobile HotSpotsm service, as the company further delivers on its GET MORE promise to provide customers with the best overall value in their wireless voice, messaging and high-speed data services.

T-Mobile and Intel are working together to drive awareness of T-Mobile HotSpot service where notebook users can wirelessly connect to the Internet and corporate networks at fast speeds at airports, airport lounges, book stores and coffee houses.

In addition, to enhance the end users' wireless experience and enable interoperability, T-Mobile and Intel have conducted engineering testing or "verification" of the Intel Centrino mobile technology on T-Mobile's network. The two companies are also working on co-marketing initiatives, including advertising, on-line marketing campaigns and co-branded signage, to drive awareness for T-Mobile HotSpot locations.

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Intel's new Centrino mobile technology includes a new mobile processor, chipset and built-in WiFi capability that have been designed to work together to enable a great wireless notebook experience. This technology will be implemented in PC manufacturers' notebook computers and will be available in March.

"The agreement between T-Mobile and Intel is a big win for our customers," said Cole Brodman, senior vice president and chief development officer, T-Mobile USA. "The Intel Centrino mobile technology represents an important step toward consumerizing WiFi service, making it more affordable and more accessible through a range of integrated devices."

The Intel Centrino mobile technology brand represents Intel's best technology for mobile computing and is designed to deliver an unwired computing experience while enabling extended battery life, outstanding mobile performance and thinner and lighter form factors.

"Notebook users want the freedom of being unwired while enjoying longer battery life and cutting-edge performance when they are accessing the Internet," said Anand Chandrasekher, vice president, Intel Mobile Platforms Group. "Intel is pleased to work with the leading wireless service provider like T-Mobile to enable a great user experience with Intel Centrino mobile technology at T-Mobile HotSpots."

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March 3, 2003

LENGTH: 664 words

HEADLINE: INTEL
Intel Centrino mobile technology advertising begins; 'Unwire' TV ads humorously show people on the move using wireless notebook PCs in unexpected places

DATELINE: SANTA CLARA, Calif.

BODY:

Intel Corporation today begins a worldwide advertising campaign to support the upcoming product launch of Intel Centrino(TM) mobile technology. Covering 11 countries, the campaign highlights innovative technology designed to create a new generation of wireless notebook PCs that bring true mobility to computer users.

Intel Centrino mobile technology represents Intel's best technology for wireless notebook PCs. The technology includes a new mobile processor, related chipsets and 802.11 wireless network capabilities that have been designed and tested to work together. In addition to wireless networking capabilities, Centrino mobile technology includes features designed to enable extended battery life, thinner and lighter notebook designs, and outstanding mobile performance. Centrino mobile technology will be introduced on March 12.

"Unwire" is the theme of the campaign's TV ads, which show businesspeople computing from their desks in unexpected places - such as a diving board, an airport "people mover," a golf course driving range and an open-air sightseeing bus - surrounded by crowds unaware of the odd presence of a desk un-tethered from its office.

"Centrino mobile technology is designed to enable wireless capabilities in smaller, lightweight PCs and make them truly mobile," said Pam Pollace, vice president and director of Intel's Corporate Marketing Group. "To help illustrate the freedom and flexibility that Centrino mobile technology brings, the 'Unwire' ad campaign humorously depicts people moving their work to surprising and unusual locations."

The "Unwire" campaign launches on March 3 with television teaser spots noting that "On March 12, Intel will not only change how you work, but where you work."

A larger, integrated campaign targeted at business and mobile computer users, IT professionals and tech-savvy consumers will break on March 12 in conjunction with worldwide events to introduce Centrino mobile technology. Television launch spots will carry such taglines as "Introducing Intel Centrino mobile technology, the new wireless laptop technology designed to help you unwire your life."

Print ads will include an eight-page insert featuring copy points that make such statements as "Intel has an urgent message for the wired world: 'Unwire.'" Additional print and online ads will describe the technology features of Centrino mobile technology.

The campaign, which also includes outdoor advertising and sponsorships, will run through June.

Euro RSCG MVBMS in New York created the "Unwire" television, print, online and outdoor advertisements, which are part of Intel's "Yes" integrated global marketing and advertising campaign.

For more information on the "Unwire" campaign and to view the advertising as it breaks, visit www.intel.com.

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PR Newswire

March 3, 2003, Monday

SECTION: FINANCIAL NEWS

DISTRIBUTION: TO BUSINESS AND TECHNOLOGY EDITORS

LENGTH: 566 words

HEADLINE: HOTSPOTZZ and Intel Team to Promote Wi-Fi Wireless Connectivity in Public Venues Nationwide

DATELINE: SALT LAKE CITY, March 3

BODY:

HOTSPOTZZ, one of the nation's leading providers of Wi-Fi hotspots, today announced it is working with Intel Corporation to promote its service in conjunction with the forthcoming Intel(R) Centrino(TM) mobile technology for notebook PCs. HOTSPOTZZ has wireless-enabled locations in retail chains, independent cafes, hotels, business centers, restaurants and other public venues.

Intel's new Centrino mobile technology includes a new mobile processor, chipset and built-in Wi-Fi capability that have been designed to work together to enable Intel's best wireless notebook experience. This technology will be implemented in PC manufacturers' notebook computers and will be available in March. HOTSPOTZZ and Intel are working together to drive awareness of Wi-Fi (802.11) hotspots -- areas where notebook users can connect to the Internet and corporate networks wirelessly.

To enable a better wireless experience, the two companies are testing the HOTSPOTZZ network with Intel Centrino mobile technology to enable the highest levels of compatibility. Together, the companies are also collaborating on a new signage program that will inform users they are in a HOTSPOTZZ hotspot, one that has been tested and verified to work together with Intel Centrino mobile technology.

"The work between Intel and HOTSPOTZZ demonstrates a deep commitment to the industry to drive awareness and adoption of Wi-Fi," said Henry Smith, HOTSPOTZZ CEO. "Intel's Centrino mobile technology for notebook computers combined with HOTSPOTZZ's Wi-Fi service enables today's mobile user to take advantage of high-speed Internet access when they travel, keeping them more productive when away from the office."

"Intel is working with companies such as HOTSPOTZZ to establish hotspots that will enable travelers to have wireless access in public places, whether they are at a restaurant, hotel or cafe," said Anand Chandrasekher, vice president, Intel Mobile Platforms Group. "With Intel Centrino mobile technology and HOTSPOTZZ, mobile users can enjoy high-performance wireless computing with long battery life in a variety of public areas."

The Intel Centrino mobile technology brand represents Intel's best technology for mobile computing and is designed to deliver an unwired computing experience while enabling extended battery life, outstanding mobile performance and thinner and lighter form factors.

About HOTSPOTZZ

HOTSPOTZZ provides high-speed Wi-Fi (802.11b) Internet access in more than 100 locations including retail chains, hotels, business centers, and independent cafes and restaurants. HOTSPOTZZ technology enables companies to offer their customers wireless access and integrates user authentication, authorization, and accounting controls in a public, global, for-pay wireless network. HOTSPOTZZ locations currently include Salt Lake City, San Francisco Bay Area, Los Angeles/Orange County, San Diego, Seattle, Toledo, and will soon include the Phoenix metro area. IKANO, the leading provider of private-label Internet services, is the parent company of HOTSPOTZZ, SISNA, auracom/Interhop, and OhioHills.com. Visit www.hotspotzz.com for details.

SOURCE HOTSPOTZZ

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The San Francisco Chronicle

MARCH 3, 2003, MONDAY, FINAL EDITION

SECTION: BUSINESS;

Pg. E1

LENGTH: 1247 words

HEADLINE: Chips for the road;

Intel spends big to point more laptop users to the wireless way

SOURCE: Chronicle Staff Writer

BYLINE: Matthew Yi

BODY: Imagine tapping onto the Internet from your laptop next to a swimming pool, at a golf range or in an airport lounge -- without the bother of any wires.

That's the image behind Intel Corp.'s ambitious advertising campaign that is starting today. With a price tag of more than $300 million, it represents the world's largest chipmaker's most expensive marketing campaign ever for a new product.

Intel is attempting to make a big splash in the growing wireless networking market by trumpeting its own variety of Wi-Fi semiconductors, which are part of Intel's new package of chips for laptop computers that will carry the Centrino label.

Centrino is a combination of three parts: Intel's much-anticipated Pentium M class of microprocessors built specifically for notebook PCs; two new chipsets; and the Santa Clara firm's first attempt at chips for wireless networking.

Centrino will make its official premiere at a launch party in New York on March 12. On that same day, some major computer-makers, such as Dell, IBM and Hewlett-Packard, plan to begin selling laptop PCs with Intel's new components.

As the overall PC market continues to founder, some analysts say Intel's emphasis on the notebook computer segment is prudent because that portion of the market is still growing.

Last year, when shipments of desktop PCs shrank 1 percent, notebook computers enjoyed a 10 percent jump, according to industry research group IDC. This year, IDC forecasts desktop shipments growing by 6 percent and laptop shipments jumping 15 percent.

"It is worth spending some money on because there is quite a bit of growth in the mobile market," said Shane Rau, an analyst at IDC.

To get the word out on Centrino, the chipmaker plans to saturate the airwaves, billboards, newspapers and magazines with images of office workers with their laptops at a golf range, on a diving board, in a warehouse and at an airport terminal.

"Some of the locations are in a somewhat exaggerated way, but (we're trying) to help people think about the concept of taking your work to places other than the routine places that you work," said Pam Pollace, vice president and director of Intel's corporate marketing group.

"As the tide rises, all the boats will be lifted," said Michael DeNeffe, director of marketing at Transmeta, a fledgling chipmaker in Santa Clara.

Martin Booth, mobile marketing manager at AMD, said Centrino's initial impact will be on thinner and lighter notebooks, a different segment from the bulkier full-size notebooks.

"Most of the consumer market, especially outside Asia, has been these large, full-size notebooks . . . to replace the desktops," he said. "And traditionally, AMD has been tackling that consumer market."

Still, Mark Edelstone, an analyst at Morgan Stanley, said he believes life won't get any easier for AMD or Transmeta.

Transmeta, which has been focusing on notebook chips that consume less power, will face stiffer competition from Intel's new Pentium Ms, and AMD's fate really depends on its next generation of chips called the Hammer, which are behind schedule, said Edelstone, who doesn't own Intel shares. His firm has investment banking business with Intel.

AMD's first batch of Hammer chips is set to premiere this quarter for server computers, but desktop and notebook computer versions have been pushed back to September.

Edelstone says Intel's Centrino is also slightly behind schedule. Originally, the new notebook chip was supposed to be launched at the beginning of this year, but Intel had some troubles with its wireless networking chip, the analyst said.

"The execution hasn't been perfect, but I believe they will do well," Edelstone said.

E-mail Matthew Yi at myi£sfchronicle.com.

GRAPHIC: GRAPHIC, Ed Rachles/The Chronicle

LOAD-DATE: March 3, 2003

The Centrino systems, if they live up to Intel's promises, could accelerate that growth.

Because the video display and other parts of the laptop hog power more than the microprocessor, Intel had to design Centrino to be more than the microprocessor, said Anand Chandrasekher, vice president and general manager of Intel's mobile platforms group.

The chipset, which acts a bridge between the processor and the rest of the system, also has been optimized to conserve power, particularly in how much energy is used by the system's display.

On average, Centrino will increase system battery life by an hour over similarly configured non-Centrino computers, Intel says.

In Centrino's debut, the wireless component will support 802.11b wireless connections, with faster 802.11a capabilities expected in future releases. Eventually, Centrino is expected to be able to roam between WiFi and cellphone data networks.

Breaking with Intel tradition, the Pentium M processor will be introduced at a wide range of speeds, from 900 megahertz to 1.6 gigahertz. Intel has not released prices.

"Mobile has always been a derivative of the desktop, but mobile has very different needs," said Mark Margevicius, an analyst at the research firm Gartner. "Pentium M is grown up. It's no longer the forgotten stepchild."

GRAPHIC: MARCIO JOSE SANCHEZ/AP PHOTO Anand Chandrasekher, vice president of Mobil Platforms Groups for Intel, tests a laptop computer containing the Centrino technology at the company's headquarters in Santa Clara, Calif., last week.

LOAD-DATE: March 3, 2003

Thanks in part to WiFi, portable computing has taken off in recent years. According to researchers at IDC, worldwide unit sales of desktops computers last year fell 1 percent over 2001 while notebook sales increased 9.8 percent.

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On the Net:

Intel Centrino: http://www.intel.com/products/mobiletechnology

GRAPHIC: AP Photos NY879-880 of Feb. 27

LOAD-DATE: March 4, 2003

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On the Net:

Intel Centrino: http://www.intel.com/products/mobiletechnology

LOAD-DATE: March 3, 2003

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Electronics News (Australia)

March 2003

LENGTH: 330 words

HEADLINE: AMD launches mobile Athlons

BYLINE: By Online staff, Electronic News (US)

BODY:

Not to be outdone by the marketing hype surrounding rival Intel's Centrino launch, Advanced Micro Devices (AMD) today unveiled 12 mobile Athlon XP-M processors for thin and light, and high performance notebooks.

In contrast with Centrino, the latest mobile Athlons are designed with an open architecture in order to facilitate integration of 802.11 wireless technology, according to AMD. PC OEMs can choose any of the three prevailing standards, including 802.11a, 802.11b and 802.11g, the company said.

For thin and light notebooks, AMD introduced the low-voltage Athlon XP-M 1800+, 1700+, 1600+, 1500+ and 1400+ processors with micro pin grid array packaging. This marks the first time that AMD mobile processors will be used in notebooks weighing less than four pounds, currently the fastest growing segment of the notebook PC market.

For full size notebooks, AMD rolled out the Athlon XP-M 2600+, 2500+, 2400+, 2200+ and 2000+ processors. Featuring 640 kBytes of full-speed, on-chip cache, the 2500+ outperforms competitive mobile PC processors by up to 8 percent on a variety of industry-standard benchmarks, according to AMD. The 2400+ and 2200+ processors are available in both desktop replacement and mainstream notebook form factors, AMD said.

Notebooks and chipsets featuring the Athlon XP-M are already on the way. Fujitsu PC plans to use the Athlon XP-M in its LifeBook, while Fujitsu Siemens Computers has chosen the 2400+ to power its Amilo-A series of consumer notebooks, which will begin shipping this month in Europe. Fujitsu Siemens apparently made the choice based on the 2400+'s larger L2 cache, the company said.

Sharp also said it plans to use the latest AMD mobile processors in its mobile environments, shipping thin-and-light Mebius Muramasa PC-MV1-VC1 notebook PCs incorporating the chips in Japan this month, while Twinhead International, an Asia/Pacific firm, expects systems based on the mobile AMD processors to be available next quarter.

GRAPHIC: Centrino competitor: Athlon XP-M is targeted at the thin and light notebook sector.

LOAD-DATE: April 21, 2003

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Microprocessor Report

March 1, 2003

SECTION: No. 3, Vol. 17; Pg. 1; ISSN: 0899-9341

IAC-ACC-NO: 101174041

LENGTH: 1385 words

HEADLINE: Pentium M hits the street: packs much into small die.

BYLINE: Krewall, Kevin

AUTHOR-ABSTRACT: THIS IS THE FULL TEXT: COPYRIGHT 2003 Reed Business Information Subscription: $595.00 per year. Published monthly. 874 Gravenstein Hwy. S., Ste. 14, Sebastopol, CA 95472.

BODY:

[3/31/03-01]

The long wait for Intel's newest processor, the Pentium M (code-name Banias), ended March 12, 2003. The processor was released as part of a larger branding strategy called Intel Centrino Mobile Technology. Intel launched a significant ad campaign to support the Centrino brand, promoting untethered computing. The Pentium M was released at six clock speeds, including one low-voltage (LV) and one ultra-low-voltage (ULV) version. The ultra-low-voltage version has a thermal design power (TDP) of only 7W, making it a direct competitor to Transmeta's Crusoe TM5800 (whose TPD is as low as 6.5W).

A Small Die With Big Caches

The Pentium M design team has fit a great deal of memory in a relatively small die. The Pentium M die, shown in Figure 1, at 10.56mm X 7.84mm has an area of [82.8mm.sup.2] Another processor that the Pentium M most closely resembles, the Pentium III-M (code-named Tualatin), started at [80.5mm.sup.2] and was reduced to [74.1mm.sup.2] after a linear process shrink of almost 5%. The new Pentium M processor is larger than the Pentium III-M, it has twice the on-chip cache (1M vs. 512K) and additional architectural features, such as SSE2, an improved branch predictor, a faster system bus, and data prefetch logic. (See MPR 11/25/02-01 "Intel Spills the Beans about Banias.")

While the size of Pentium M's larger L2 cache had been known for some time, Intel also doubled the size of the Li data and instruction caches, from 16K each on the Pentium III to 32K each. Intel has done a remarkable job of packing 77 million transistors on the small die. With about half the die area devoted to cache memory, and with the Itanium and Xeon MP processors integrating multimegabytes of SRAM memory, perhaps we should recategorize Intel as a leading SRAM manufacturer that manages to fit a processor core on the chip.

Although the details of the Pentium M microarchitecture are still unrevealed, the new processor exceeds the top clock speed of the Pentium III-M in the same process. The Pentium M was released at 1.6GHz, whereas the top speed of the Pentium III-M was 1.33GHz. The additional cache, better branch predictors, and other microarchitecture enhancements significantly improve the battery efficiency and performance of the Pentium M processor.

That's One Small Step for Voltage

Core Frequency	Typical Core Voltage	TDP
1.6GHz	1.484V	24.5W
1.4GHz	1.420V	N/A
1.2GHz	1.276V	N/A
1.0GHz	1.164V	N/A
800MHz	1.036V	N/A
600MHz	0.956V	6W

N/A = Spec not available.

Table 2

The 1.1GHz LV and 900MHz ULV Pentium M processors offer less range but start at significantly lower maximum TDP than the other Pentium M processors.

	Pentium M LV			Pentium MULV	
Core Freq	Core Volt	Typ TDP	Core Freq	Core Volt	Typ TDP
1.1GHz	1.18V	12W			
1.0GHz	1 164V	N/A			
900MHz	1.10V	N/A	900MHz	1.004V	7W
800MHz	1.02V	N/A	800MHz	0.988V	N/A
600MHz	0.956V	6W	600MHz	0.844V	4W

N/A = Spec not available.

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Business and Industry

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Mobile Internet

March 2003

SECTION: Vol. 5, No. 3; Pg. 4

RDS-ACC-NO: 03769313

LENGTH: 262 words

HEADLINE: Toshiba and Intel to advance adoption of wireless broadband hot spots across the US. (Business).

BODY:

Toshiba's Computer Systems Group (CSG) announced it is working with Intel Corp. on a joint marketing campaign to advance the adoption of wireless broadband hot spots. The program coincides with the launch of Intel Centrino mobile technology for notebook PCs that features built-in wireless capability.

Toshiba will support the Intel Centrino mobile technology. Toshiba and Intel are working together to drive awareness of wireless broadband hot spots at public locations such as coffee shops, hotels and convenience stores. The co-marketing agreement will include direct marketing, advertising and point-of-sale materials.

Additionally, the companies are performing interoperability verification on Intel's Centrino mobile technology with Toshiba's network through Intel's Wireless Verification Program, to enhance the end users' wireless experience. Toshiba's Wireless Broadband Hotspot solution allows end users with Wi-Fi enabled notebooks or PDAs to connect with the access point, or hot spot to launch an Internet browser and access e-mail, surf the Web, watch streaming video or download multimedia presentations. Using Wi-Fi technology, also referred to as 802.11b, Toshiba's hot spot service makes it convenient for people who are traveling to connect to any Toshiba hot spot, reducing the complexity of data connection around the ability to gain remote access. Intel's new Centrino mobile technology includes a mobile processor, chipset and built-in Wi-Fi capability that have been designed to work together to enable a great wireless notebook experience.

TYPE: Newsletter; Fulltext

JOURNAL-CODE: MOBIINTE

LOAD-DATE: April 9, 2003

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South China Morning Post (Hong Kong)

May 6, 2003

SECTION: TECHNOLOGY POST; New Gear; Pg. 4

LENGTH: 197 words

HEADLINE: Light laptop a credit card killer

BYLINE: Carolyn Ong

BODY:

The Fujitsu LifeBook S6120, which weighs just 1.75kg, is one of the lightest of the new generation of laptops with Intel Centrino mobile technology.

But at HK$20,880, it is also one of the most expensive Centrino laptops on the market.

The S6120 is an impressive looking piece of kit - its slim, grey -and-silver case exudes sophistication.

It has rounded edges and thoughtful patches of suede on the bottom to keep the notebook from slipping across the desk.

The S6120 XGA 13.3-inch thin-film transistor display is something of a head turner.

Fitted with a Pentium M 1.4 gigahertz processor, 256 megabytes of random access memory and built-in wireless networking, the S6120 has similar specifications to the Acer TravelMate 800, Sony Vaio PCG-GZ1 and Samsung X10.

However, even the Sony Vaio, at HK$16,980, is cheaper than the Fujitsu S6120.

The S6120 is preloaded with Microsoft Windows XP Home edition, Norman Virus Control and FireWall, and comes with 256MB of Ram and an SMC wireless LAN router for that huge price tag.

Fujitsu LifeBook S6120

Specifications

Price: HK$20,880

Pros: Very light

Cons: Breathtaking price, no FireWire

LOAD-DATE: May 6, 2003

There is little bundled software - Windows XP Home, some Asus utilities, Nero CD burner, Cyberlink DVD player and Trend's PC-Cillin antivirus. Just for the Linux/Unix users out there, Hornington has a few units available without an operating system at a HK$700 discount.

Asus M2400E

Specifications

Pros: Good-looking, powerful machine with long battery life Cheap

Cons: No trackpoint; uninspiring audio

Price: HK$13,500 for DVD drive; HK$14,500 for combo drive

Distributor: Found at www.hornington.com

LOAD-DATE: May 6, 2003

The R40 that is fitted with high-end options such as 2GHz Pentium 4, 256MB of Ram, a 40GB hard disk, 15-inch display, CD-RW/DVD-Rom drive and Wi-Fi upgradable (for an additional HK$879 for an IBM wireless LAN PC card or HK$965 for a Cisco Aironet PCI mini adapter) was HK$16,988, but is now available at a special online price of HK$13,988 (at ibm.com.hk).

Other notebook PC manufacturers such as Dell, Toshiba, Hewlett-Packard and Acer are already offering Pentium 4 laptops. Like the G-series G40 from IBM, desktop Pentium 4 notebooks from Toshiba, HP and Dell offer 15-inch or larger screens and sell for about HK$13,000 to HK$20,000, depending on configuration.

HP also has great laptop deals on its Web site. The Compaq nx9000 series features integrated wireless LAN, FireWire, 14-inch or 15-inch display and 256MB of Ram at a basic price of HK$9,980. The most basic configuration is fitted with an 2GHz Celeron chip, 14-inch display and a 20GB hard disk. With high-end options, the nx9010 comes with a 2.5GHz Pentium 4 chip, a 40GB hard disk, a CD-RW/DVD-Rom combo drive and 15-inch display for HK$13,280.

Another bargain is the HP Presario 2107AP, which has many multimedia features and is aimed at home users. At HK$11,888, you get a 15-inch display, a 2GHz Pentium 4 chip, 256MB of Ram, a 30GB hard disk, a combo optical drive, 64MB of video Ram and integrated wireless LAN.

HP is giving away a bunch of accessories when you buy one of its laptops, including a hands-free speaker phone, Web cam, flash card reader and carrying case.

Sony has slashed the price of its all-in-one laptop, the Vaio GRZ20. This is a sweet machine, and its built-in speakers are among the best you can find on a laptop.

Previously sold at HK$15,380, it is being offered for HK$13,980 (at sonystyle.com.hk). It is fitted with a 2.4GHz Pentium 4 chip, 512MB of Ram, a massive 60GB hard disk, 15-inch display, a combo drive and wireless LAN Orinoco PC card. All Vaios come with FireWire.

Got a gadget idea? Drop Carolyn a line at carolyn£scmp.com

LOAD-DATE: May 6, 2003

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Business Wire

May 5, 2003, Monday

DISTRIBUTION: Business Editors/High-Tech Writers

LENGTH: 792 words

HEADLINE: Jupitermedia is Selected by Intel, IBM and Cisco to Run Seven City Asia-Pacific 802.11 Mobility Forums

DATELINE: NEW YORK, May 5, 2003

BODY:

Jupitermedia Corporation (Nasdaq: JUPM) today announced that it has been engaged by Intel, IBM and Cisco to organize and manage an Asia-Pacific multi-country seven city series called the "Intel-IBM-Cisco Mobility Forums" during the months of May and June 2003.

Representatives from Intel, IBM and Cisco will offer insights on various aspects of 802.11 mobility equipment and solutions at free seminars moderated by Jupiter Research analysts and Jupitermedia editors.

Intel will elaborate on the business value proposition of Intel Centrino Mobile Technology. IBM will comment on Intel Centrino mobile technology-based Thinkpad Mobility solutions as well as deployment planning and service provisioning. Cisco will discuss 802.11 wireless infrastructure security considerations and introduce Cisco solutions referencing their involvement with Calexico. Calexico is the code name for a PC card modem developed by Intel that allows both PCs and notebooks to connect to any 802.11b, or Wi-Fi, wireless network.

"We are honored that these three technology organizations and leaders in the roll-out of 802.11 equipment, services and solutions have chosen Jupitermedia to both organize and manage these 802.11 Mobility Forums. 802.11 is a powerfully disruptive technology and a cornerstone that enables the promise of ubiquitous computing," stated Alan M. Meckler, Chairman and CEO of Jupitermedia. "We will utilize our 80211Planet.com, australia.internet.com and asia.internet.com Web sites and companion e-mail newsletters to promote these Mobility Forums to ensure quality attendance at each of the city presentations," he continued.

The schedule for Intel-IBM-Cisco Mobility Forums is as follows:

May 9 -- Cafe Sydney - Sydney, Australia June 9 -- Westin Taipei -- Taipei, China June 11 -- CoEx Intercontinental -- Seoul, Korea June 12 -- Shangri La Beijing -- Beijing, China June 16 -- Westin Shanghai -- Shanghai, China June 18 - JW Marriott -- Hong Kong, China June 20 -- The Fullerton -- Singapore

For more information and to register please visit http://www.jupiterevents.com/intelasia/ or contact Peter Reid at preid£jupitermedia.com or call (612) 9290 1088 or fax (612) 9290 1343.

About Jupitermedia Corporation

Jupitermedia Corporation (Nasdaq: JUPM), (www.jupitermedia.com) headquartered in Darien, CT, is a leading provider of global real-time news, information, research and media resources for information technology and Internet industry professionals. Jupitermedia includes the internet.com and EarthWeb.com Network of over 150 Web sites and 175 e-mail newsletters that generate over 200 million page views monthly. Jupitermedia also includes Jupiter Research, a leading international research advisory organization specializing in business and technology market research in 18 business areas and 11 vertical markets. In addition, Jupiter Events include nearly 40 offline conferences and trade shows focused on IT and business-specific topics, including Computer Digital Expo, America's 21st Century Enterprise IT Conference & Expo (www.cdxpo.com).

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The Edge Malaysia

May 5, 2003

LENGTH: 659 words

HEADLINE: Net Value: Malaysian success story

BYLINE: Mary Anne Tan

BODY:

Malaysian engineers were involved in designing and developing a key component of Intel's Centrino (picture), beating rivals from the US and Israel

For years, and despite millions of ringgit spent, Malaysia has struggled to make an impact in the global information technology arena. Now, a team of Malaysian engineers, picked by Intel Corp over Israeli and American teams, has given us reason to be proud - they have designed a key component of the Centrino, a product Intel calls its most important in 10 years.

"Malaysia was picked over US and Israel because in the last 10 years or so, our Penang Design Centre team has consistently displayed its capability to come up with the best and most advanced integrated circuit [IC] designs and has won several awards, both within and outside Intel," says Intel Malaysia's general manager Gulsher Grewal.

When Intel unveiled its biggest bet yet on mobile computing technology with the launch of the Intel Centrino - a central processing unit for unwired computing - few people were aware that Malaysian engineers designed and developed the mobile input/output controller hub 4 (ICH4M), a key component of the Intel 855 chipset family.

ICH4M controls the power management (battery life) and wireless connection in a notebook.

Both are key functions. Without wireless connection, well, it's not a true mobile device. Power management is crucial because the biggest complaint about digital devices is that while usage has risen dramatically, battery technology has remained painfully slow to catch up. With Centrino, battery life lasts around five hours compared to the usual two to three hours.

Gulsher says Malaysia has every reason to be proud as more than 100 Malaysians, logic designers, architects, micro-architects, circuit designers, validation designers, design automation engineers and others were involved in the overall blueprint, design and development of ICH4M, which is set to extend Intel's silicon leadership across the globe. It was no mean feat, he adds, considering that it got the nod over Intel's two other design teams in the US and Israel.

Centrino incorporates three chips - Pentium M processor, Intel's 855 chipset family, and the Pro/wireless 2100 network connection - all designed to revolutionise mobile computing. While Pentium M is a central processing unit designed for mobile applications, the 855 chipset ensures ease of mobility and Pro/wireless 2100 enables wireless network connection.

In the 30 years since Intel was in Penang, its Malaysian arm has been moving up the value chain, from being a pure manufacturing concern to a design and development centre. The benefits have been enormous. So far, Intel has invested close to RM2.3 billion in Malaysia, Gulsher reveals.

"Back in 1972, the Penang Design Centre was quite passive, just following instructions. Over the years, we have gone on to problem-solving, ensuring quality levels and fixing defects. Then, we became proactive by developing and anticipating the needs of the market and by strategising. All these resulted in the Penang Design Centre being recognised by Intel Corp as the most advanced IC design centre in Malaysia, Gulsher said.

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eWeek.com

May 5, 2003 Monday

SECTION: REVIEWS

LENGTH: 403 words

HEADLINE: Fujitsu Harnesses Athlon XP ;
S2000 offers flexibility, power.

BYLINE: Anne Chen, anne_chen£ziffdavis.com

BODY:

Fujitsu PC Corp. is now shipping notebooks armed with the mobile Advanced Micro Devices Inc. Athlon XP M processor. Based on eWEEK Labs' tests, we think these notebooks could give Intel Corp.'s Centrino based systems a run for their money.

We tested the Fujitsu LifeBook S2000 Notebook, which shipped in March, and found it to be a well appointed system that merits consideration by those looking for an affordable, thin, light notebook.

The model we tested shipped with an Athlon XP M 1700+ CPU with AMD's PowerNow technology--which works to extend battery life without affecting performance--operating at 1.5GHz, as well as 256MB of memory. This configuration gave solid performance backed up by a 30GB hard drive. The S2000 costs $1,199 with 256MB of memory and a 30GB hard drive.

The 4.5 pound (with optical drive) LifeBook S2000 we tested had Microsoft Corp.'s Windows XP Professional installed ($100 additional). The home edition of XP comes standard.

The S2000 features a 13.3 inch XGA thin film transistor display with a maximum resolution of 1,024 by 768 pixels, and we found the display quality to be quite good.

The notebook's bay supports CD ROM, DVD and DVD/CD RW combo drives. It ships with two Universal Serial Bus 2.0 ports, an infrared port, an Ethernet port, a 56K bps modem, and jacks for headphones and audio line in. The S2000 has one PC Card slot. The notebook also has a built in smart card reader and a preboot data Security Panel.

The unit we tested also had integrated Wi Fi certified wireless LAN (IEEE 802.11b) capabilities--a nice touch. All units are installed with WLAN antennas and can be upgraded with WLAN capabilities for $70.

The diminutive notebook is powered by a removable six cell lithium ion battery, which, in tests, delivered almost 2 hours of life between charges in heavy testing with all power saving functions turned off. The S2000 offers a bay for one of Fujitsu's swap in drives or a second modular bay ion battery ($116), which will double the system's battery life, according to Fujitsu officials.

Battery life tests showed that, on average, the Athlon XP M with PowerNow can increase battery life to about 3 hours. By comparison, Intel's Centrino based systems yielded more than 5 hours on a standard nine cell lithium ion battery in eWEEK Labs tests.

eWEEK Labs Senior Writer Anne Chen can be reached at anne_chen£ziffdavis.com.

LOAD-DATE: May 5, 2003

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New Straits Times - Computimes (Malaysia)

May 5, 2003, Monday

SECTION: Lab report; Pg. 21

LENGTH: 213 words

HEADLINE: Dell offers Centrino notebook

BODY:

DELL Computer has introduced the Inspiron 500m, its newest thin and light notebook computer.

The notebook computer, according to Dell, is designed for businessmen, students and consumers who seek powerful mobile computing and connectivity at an attractive price, which starts from RM5,499.

The Inspiron 500m supports the Intel Centrino mobile technology and features impressive battery life - about four hours - in an easy-to-carry form factor that delivers seamless portable connectivity options.

For flexibility, users can choose a variety of wireless options, including Intel's ProWireless 2100 (802.11b) and Dell's TrueMobile 1300 (802.11b/g), as well as integrated Bluetooth capability at the time of purchase for RM152.

Weighing 2.3 kilograms, the Inspiron 500m is able to handle photo editing, music management, productivity applications and digital versatile disc viewing.

A second battery, enabling up to eight hours of continuous operation, as well as optional integrated wireless solutions allow users to stay connected in public wireless hotspots. In addition, two USB 2.0 ports make transferring bulky music files and digital picture files quick and efficient.

The notebook includes Dell's QuickSnap personalisation colour kits.

GRAPHIC: The Inspiron 500m: Features the Intel Centrino technology for seamlessconnectivity, portability and power.

LOAD-DATE: May 5, 2003

programs when getting the info, but they were created before the unit was purchased last year. They were in the Smart Panel folder within the Epson folder. Are these actual application programs, or just someone's joke?

A: It's a shame to put this kind of talk in the newspaper, but this strange case has caused much confusion.

To get the full lowdown on this bizarre situation involving that popular Epson scanner and tasteless vocabulary, go to Google.com and use either expression as a search word. You will find that they are, indeed, applications designed to handle the features that convert scanned photos of words into computer readable text files, a practice known as optical character recognition.

So what do you call an application or app designed to perform OCR? Why it's an OCRapp. A similar story can be told for the other unfortunately named files.

The point is that Epson has created pretty widespread fear among its customers who worry that they have been blitzed by some kind of virus in which some socially challenged hacker tagged the files as potty jokes.

So relax. Hopefully Epson will see the error of its ways and do some serious file renaming in the future.

Questions for this feature are culled from various columnists, including James Coates of the Chicago Tribune. Readers can reach him at jcoates£tribune.com or the Chicago Tribune, Room 400, 435 N. Michigan Ave., Chicago, IL 60611.

LOAD-DATE: May 5, 2003

In mid May, the company will roll out the DataFrame 310fc, a Fibre Channel storage device that can scale up to 16.6TB of stored data per system in either a 3U rack or pedestal chassis and will feature up to 512MB of cache and 14 hot swap drives. It also will include Spheras Storage Director and PathPilot management software from Eurologic Systems--which is being bought by Adaptec Inc.--and will enable users to cluster up to four systems at a time. It will complement the DataFrame 310s, an Ultra320 SCSI model that was unveiled April 21.

On the mobile computing side, MPC this month will unveil its TransPort T2100 notebook, which will feature Intel's Centrino package--which includes its Pentium M chip, accompanying 855 chip set family and a WiFi module, the PRO/Wireless 2100 Network Connection--a 14 inch screen and 8x AGP graphics. The system, built by MiTech, also will have integrated biometric security and three USB 2.0 ports. In addition, MPC officials said this month they will roll out the Transport T2000 thin and light two spindle notebook built by Samsung Electronics Co. and powered by Intel Pentium4 M chips up to 2.6GHz.

In the second half of the year, MPC will launch a tablet PC, they said.

In the first four months of this year, MPC released five servers, and this summer will launch another one, the NetFrame 600, which will feature up to two 2.8GHz Intel Xeon chips, Intel's hyperthreading technology, up to 8GB of RAM and up to five Serial ATA or SCSI hard drives.

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LOAD-DATE: May 2, 2003

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May 1, 2003, Thursday

DISTRIBUTION: Business Editors

LENGTH: 13873 words

HEADLINE: USA Reports Excellent First Quarter;
See Important Notes at End of Document

DATELINE: NEW YORK, May 1, 2003, March 31, 2003 , March 31, 2002

BODY:

-- Adjusted EPS Grows 155% to $0.16; GAAP EPS of $(0.23)

-- EBITA Grows 120% to $173 million; Operating Income Grows 236% to $93 million

-- Free Cash Flow and Net Cash Provided by Operating Activities Exceed $400 million

$in millions, except per share	Q1 2003	Q1 2002	Growth
Gross Transaction Value (a)	$4,141	$2,782	49%
Revenue (a)	$1,392	$1,007	38%
EBITA (b)	$173	$79	120%
Operating Income (c)	$93	$28	236%
GAAP Diluted EPS (c)	$(0.23)	$(1.04)	78%
Adjusted EPS (b)	$0.16	$0.06	155%

USA Interactive reported results for its quarter ended March 31, 2003.

-- USA has simplified its corporate structure, with its completed buy-in of Ticketmaster and the announced buy-ins of Expedia and Hotels.com. These transactions further enhance USA's ability to operate its subsidiaries to the fullest extent. This is the first quarter that USA is reporting pro forma the results of all three companies as 100%-owned subsidiaries of USA.

-- Travel Services, Ticketing, and HSN International led USA's strong quarter. Travel Services gross bookings increased 75% in the face of war, and Ticketing gross value of transactions increased 27%. Results were offset somewhat by Personals, which invested aggressively in marketing during the quarter.

-- USA expects to meet or exceed its FY 2003 Adjusted EPS budget of $0.75 (d), though we do not expect to achieve growth rates similar to the first quarter in the second, third, and fourth quarters. Due to non-cash charges which include a charge of $245 million to the book value of USA's common interest in VUE (see page 2 for more detail), we anticipate that FY 2003 GAAP Diluted EPS will be significantly lower than budget.

(a) Gross Transaction Value and revenue herein are presented on a pro forma basis reflecting the Vivendi transaction and USA's initial acquisition of a majority stake in Expedia as if those transactions had been completed as of January 1, 2002. Please see page 9 for definitions. (b) EBITA and Adjusted EPS are presented on a pro forma basis

reflecting the Vivendi transaction, the roll-ups of USANi LLC and Home Shopping Network, Inc., USA's initial acquisition of a majority stake in Expedia, the Ticketmaster merger, the pending Expedia merger and the pending Hotels.com merger as if those transactions had been completed as of January 1, 2002, and reflect continuing operations and exclude one-time items. 2002 data is not pro forma for the acquisitions of TV Travel Shop, Interval and EPI. Please

benefit operations in any manner, would not normally be recorded by USA if not for the fact it already consolidated these entities, and are all related to the same transaction, as USA simultaneously announced its intention to commence its exchange offers for the companies in 2002. The majority of costs are for advisory services provided by investment bankers, and the amounts incurred in 2003 were pursuant to the same fee letters entered into by each company in 2002. One-time items in 2002 reflect the cumulative effect of accounting related to the adoption of the new rules for goodwill.

(c) During the quarter, USA received the audited financial statements of Vivendi Universal Entertainment LLLP ("VUE") for the year ended December 31, 2002, which disclosed that VUE recorded an impairment charge for goodwill and intangible assets and other long-lived assets of $4.5 billion in the period May 7, 2002 to December 31, 2002 based upon VUE management's review of the estimated fair value of VUE as of December 31, 2002. Because of delays in VUE's financial reporting, USA records its 5.44% proportionate share of the results of VUE on a one-quarter lag. The charge taken by USA was approximately $245 million, before a tax benefit of $96 million. USA holds preferred and common interests in VUE. USA believes the action taken by Vivendi Universal does not affect the value of USA's preferred interests in VUE, which are senior to the common interests in VUE, and the terminal value of which, pursuant to the VUE agreements, do not vary based on the value of VUE's businesses. USA's 5.44% common interest is generally subject to a call right of Universal Studios beginning in 2007, and a put right of USA beginning in 2010, in both cases based generally on private market values at the time. The VUE agreements provide that a call or put would be valued at private market valuations. While a private market value of VUE in today's environment would likely yield a value for USA's common interests below USA's initial carrying value, as market valuations of media assets have declined since the close of the VUE transaction, USA continues to believe that the value of its common interests in VUE is attainable over the long-term and that the impairment charge recorded by VUE does not necessarily indicate an impairment in the value of the assets on a long-term basis, but that simply USA must apply the conventions of US GAAP and record its proportionate share of the results of VUE as prepared by VUE management.

NET CASH PROVIDED BY OPERATING ACTIVITIES / FREE CASH FLOW

Net cash provided by operating activities includes Ticketmaster's net cash collected on behalf of clients. Management does not include this cash in its analysis of available cash and it is therefore excluded from Free Cash Flow.

	Q1 2003
	$in millions
Net Cash Provided by Operating Activities	$463.7
Capital expenditures	(31.8)
Ticketmaster net cash collected on behalf of clients	(22.6)
Preferred dividend paid	(3.3)
Free Cash Flow	$406.0

in the current period, revenue and EBITA and Operating Income growth for Travel Services would have been 74%, 56% and 88%, respectively. Total revenue, EBITA and Operating Income growth would have been 33%, 99%, and 199%, respectively. Revenue for 2002 includes the pro forma impact of Expedia of $35.5 million.

(b) HSN International primarily drove the growth in Electronic Retailing. HSN-U.S. grew revenues, EBITA and Operating Income 5%, 8% and (11)% respectively. Please refer to page 6 for further detail.

(c) Other includes ECS/Styleclick, interactive development, and intersegment elimination.

(d) See page 9 for definition and pages F-4 for reconciliation between EBITA and Operating Income.

(e) Operating Income is presented on an actual basis, with no pro forma adjustments.

CAPITALIZATION

USA management looks at its capitalization as shown below. USA has cash, securities, debt and preferred stock on its balance sheet, which have been adjusted as follows: 1) Cash is adjusted to exclude net cash collected on behalf of clients by Ticketmaster and to reflect exercise of Liberty's pre-emptive right related to Ticketmaster merger; 2) Securities in VUE are adjusted to reflect the estimated after-tax present value of these securities; 3) Preferred stock is adjusted to reflect the face value of the security (amounts in millions):

	As of 3/31/03		
	Balance Sheet Carrying Value	Adjustment	As Adjusted
Cash and marketable securities (a)	$3,866	$91 (b)	$3,957
Securities in VUE	2,737	(534) (c)	2,203 (c)
Available cash and cash equivalents	6,603	(443)	6,160
Long-term debt (d)	(1,206)	-	(1,206)
Preferred stock	(0)	(656) (e)	(656)
Net cash and securities	$5,397	$(1,099)	$4,298

As of 4/15/03		
Shares outstanding (f):	Actual	Pro Forma (g)
Basic shares outstanding	514.9	652.0
Treasury method options, warrants and restricted stock	23.4	58.8
Diluted shares outstanding	538.3	710.8
Market Capitalization	$15,132	$19,979

(a) Cash includes $270.2 million in deferred merchant bookings at Expedia and $112.1 million in deferred revenue at Hotels.com.

(b) Cash is adjusted to exclude $129 million in net cash collected on

(c) Converted to USA warrants/options in Ticketmaster merger.
(d) Pending Hotels.com merger. Includes all earned and unearned performance warrants.
(e) If USA's stock price exceeds $35.10, the initial conversion price of $33.75 is subject to a downward adjustment (see proxy filed 11/13/01 for more information). The maximum number of USA common shares the security is convertible into is approximately 25.7 million. The convertible preferred has a face value of $656 million and is included in USA's capitalization table (see above); the underlying shares are excluded from the share count.

DISCUSSION OF OPERATING RESULTS

TRAVEL SERVICES

For the quarter, Travel Services revenue increased 93% to $545.1 million from $281.7 million, and EBITA increased 86% to $103.7 million from $55.7 million, despite being adversely impacted by the effects of the war. Growth was driven by strong results at Expedia and Hotels.com. Expedia's revenue increased 71% on strong air and hotel bookings; merchant room night stays increased 72%. Expedia's sale of packages also contributed significantly, growing 137% from the prior year period. Hotels.com's revenue grew 67% on a 63% increase in room nights stayed, while EBITA margins dropped from 15.2% to 11.8% due to higher advertising and promotion expense, which was $12.1 million in Q1 2003 vs. $4.6 million in Q1 2002. While bookings in late March and early April have been adversely affected by the war, bookings through April suggest that we are tracking well against budgeted revenue.

Highlights:

-- Expedia continues to grow its merchant hotel inventory and now has agreements with 9,500 properties. Expedia strengthened its relationships with Six Continents and Hilton by announcing marketing agreements whereby the hotel chains will offer Expedia customers enhanced access to their inventory.

-- Expedia furthered its relationship with USA sister company Ticketmaster; tickets for 17 NBA and NHL teams were available on Expedia during the winter season.

-- Expedia topped the online travel category in the American Customer Satisfaction Index(TM) ranking of e-commerce sites, was rated best in category by Consumer Reports' online travel report, and was named one of Forbes Magazine's "Best of the Web."

-- The Hotels.com branded website has continued its success in the first four months of 2003, with several recent days in excess of 38% of total daily bookings, while at the same time Hotels.com grew its number of affiliates in the quarter by 42%.

-- Hotels.com signed a three-year agreement with Amtrak, under which Amtrak reservation agents will transfer its customers who desire discount lodging to Hotels.com.

Metrics:

EXPEDIA	Q1 2003	Q1 2002	Growth
Gross Bookings (mm)			
Total gross bookings	(a) $1,802	$1,107	63%
Agency gross bookings	1,190	797	49%
Merchant gross bookings (includes CCV)	612	310	97%
CCV gross bookings	74	18	311%

HSN-U.S. increased revenue by 5% and EBITA by 8%, which was close to our Q1 EBITA budget. HSN-U.S. benefited from an increase in gross margins to 36.5% from 35.4% in the prior year period. Electronic Retailing experienced revenue growth despite softer sales in the period surrounding the war in Iraq.

Highlights:

-- HSN.com increased sales 32% and achieved a 21% gain in active customers over last year.

-- Off-air sales were strong in Q1. AutoShip grew 26%, led by the Andrew Lessman ingestibles and from auto-ship sales on hsn.com. Upsells increased 25%, led by strong growth in the home category.

-- HSN launched a number of new products in Q1 including new jewelry offerings by Raquel Welch and Debra McGuire (stylist for the hit NBC show Friends); food and kitchen items from Michael Chairello and Burt Wolf; handbags from Bill Blass; Home Fashions by Beverly Murphy; the new Intel Centrino wireless processor and the introduction of a pet products category, Pampered Pets.

Metrics:

HSN - U.S. (Households as of end of period)

		Q1 2003	Q1 2002	Growth
Units Shipped (mm)		10.4	9.8	6%
Gross Profit %		36.5%	35.4%	110 bps
Return Rate		18.0%	18.9%	
Average price point		$43.98	$44.62	-1%
Product mix:				
Home Hard Goods	(a)	30%	32%	
Home Fashions		8%	7%	
Jewelry		22%	24%	
Health / Beauty		28%	24%	
Apparel / Accessories		12%	13%	
HSN total homes (mm)		79.5	74.9	6%
HSN FTES (mm)	(b)	69.8	65.6	6%
America's Store total FTEs (mm)	(b)	9.6	10.2	-6%
HSN.com % of Sales		14%	11%	

(a) Home Hard Goods includes electronics, computers, and other home goods. Formerly called Home Licensing.

(b) FTEs reflect a 50% weighting of DBS homes, in order to more accurately reflect the actual performance of these subs and adjust for the impact of their significant growth as a percentage of total HSN distribution.

HSN INTERNATIONAL (Households as of end of period)

		Q1 2003	Q1 2002	Avg. Daily Hrs.	3/31/03 Stake
HSE - Germany (includes Austria/Switzerland)		30.9	29.8	16	90%
TVSN (China)	(a)	64.0	80.0	1	21%
Shop Channel (Japan)		14.9	11.9	17	30%
Euvia:	(b)				
Euvia Travel	(c)	29.4	26.3	2.4	49%
Neun Live	(c)	27.7	26.3	9.6	49%

(a) Formerly reported in terms of households airing at least 14 hours per week.

-- Match.com launched the revolutionary "Personal Attraction Test," an innovative, entertaining and highly individualized program to assess compatibility.for matchmaking.

-- Match was selected by Forbes' editors as the best online dating site in their recent Best of the Web Feature (March 26, 2003).

-- Match.com expanded its international offerings, signing deals with T-Online in Germany, Eresmas in Spain, AOL UK, and Univision Online to provide Spanish-language online personals in the U.S. Match.com also shifted its international business model from a "stamp" model, in which members pay per contact, to a subscription model, which the company believes promotes longer-term memberships and a higher lifetime value per subscriber.

-- On April 4th, USA completed its acquisition of uDate.com for approximately $150 million in stock. Pro forma for that transaction, USA would have had over 918,000 subscribers at the end of Q1.

Metrics:

MATCH.COM	(a) Q1 2003	Q1 2002	Growth
Paid Subscribers (000s)	766.6	527.7	45%
New Registrations (000s)	3,429.8	2,911.7	18%
New Subscriptions (000s)	361.4	342.4	6%
Conversion rate - registrations to subscriptions	10.5%	11.8%	

(a) The operating metrics and financial results presented for Match.com include the impact of Soulmates, acquired on April 12, 2002. The 2002 operating metrics and financial information do not include Soulmates.

LOCAL SERVICES

For the quarter, Local Services revenue increased 15% to $8.4 million from $7.3 million, and EBITA improved to a loss of $6.8 million from a loss of $10.4 million. Excluding the results of EPI which was acquired March 25, 2003, and is not included in the prior year, revenue decreased by 1% and EBITA improved to a loss of $6.1 million.

Highlights:

-- On April 15, 2003 Citysearch launched the internet's first local pay for performance ("PFP") product, which increased productivity of sales agents by 3-4 times in initial test markets. As of the end of Q1, Citysearch had 8,700 total customer locations, 1,000 of which were PFP locations. Since launching local PFP on April 15, Citysearch now has 13,000 total customer locations, of which 5,500 are local PFP locations. This was driven mainly by several large accounts which each contributed a significant number of locations. Our goal is to increase to 25,000 customer locations by the end of 2003, driven mainly by an increase in local PFP locations.

OTHER ITEMS

The quarter's results include estimated non-cash charges related to the pending Expedia and Hotels.com transactions, which are subject to finalization following the close of the transactions. These charges consist of non-cash compensation expense related to expense for the fair value of unvested options assumed by USA in the transactions, and non-cash amortization related to step-up in basis of the assets to be acquired.

DEFINITIONS

Please note several definition changes: (1) the definition of Free Cash Flow has been slightly altered from USA's most recent disclosure to exclude net cash collected on behalf of clients by Ticketmaster, and (2) Adjusted Net Income, Adjusted EPS and EBITA do not exclude non-recurring items other than one-time items.

-- Adjusted Net Income (Amounts that have been, or ultimately will be, settled in cash and the measure will be computed as net income available to common shareholders plus (1) amortization of non-cash distribution and marketing expense, (2) amortization of non-cash compensation expense, (3) amortization of intangibles (4) equity income or loss from USA's 5.44% interest in VUE, (5) pro forma adjustments and (6) one-time items, all net of tax and minority interest, where applicable.

-- Adjusted EPS (Adjusted Net Income divided by fully diluted shares outstanding, including restricted stock and restricted stock units issued without using the treasury method convention, as the denominator)

Going forward, EBITA, Adjusted Net Income and Adjusted EPS are the primary measures of USA executive management to review the operating performance of the business units. These measures are prominently displayed in USA's 2003 budget presentation; the actual results received from the business units, and investor presentations by USA executive management. Furthermore, incentive compensation is directly linked to achieving EBITA and Adjusted Net Income targets. It is important to note that USA does not adjust for non-cash items because they are non-recurring, but rather because USA management excludes these items in reviewing the operating performance of the business units and the overall results of USA.

Discussion of Non-Cash Items

Non-cash distribution and marketing refers to arrangements whereby the Company has secured distribution for its products and services in exchange for providing advertising and, in some cases, warrants to purchase stock in Hotels.com. Sufficient advertising to satisfy the existing obligations has been secured pursuant to an agreement with Universal TV (formerly USA Cable) related to the USA transaction with Vivendi Universal Entertainment (the "VUE Transaction"). The warrants were issued predominately at the time of Hotels.com initial public offering. Current arrangements do not provide for cash payments to secure distribution.

To date, non-cash compensation has been a relatively small amount, but the Company began to expense stock based compensation in accordance with FASB Statement No. 123, measured as the fair value of the equity instruments, over their vesting terms. Restricted stock will account for the majority of stock based compensation, with the charge measured at the grant date and amortized ratably as non-cash compensation over the vesting term. Management views the true cost of restricted stock as the resulting dilution to common shareholders rather than the estimated fair value of the instrument that is used to record the expense. Consistent with management's view that the true cost is the dilution, for purposes of calculating Adjusted Net Income Per Share, all restricted shares are treated as outstanding for calculating the weighted average shares outstanding, and the treasury method convention is not used to reduce the shares outstanding. Note that the amount of non-cash compensation will be impacted by the mergers of Ticketmaster, Expedia and Hotels.com, as the Company will expense the fair value of unvested stock options assumed at the respective merger dates over the remaining vesting term.

Management views its acquisitions on a long-term basis. The Company has historically been acquisitive, and, as a result, large balances of intangible assets have been estimated and recorded over time. Management evaluates acquisitions based on the total purchase price of the assets purchased versus the cash flows and income before non-cash expenses that the businesses generate. Management does not consider the possible intangibles that may result from the valuation of the fair value of assets and liabilities in making its acquisition decision, and thus the resulting amortization of intangibles is not relevant to management in evaluating the results of operations on an ongoing basis. The amounts created are indicative of accumulated intangibles that arose over time, in some instances many years, in establishing the business, such as contractual relationships with suppliers and distributors and customer relationship, and are not in lieu of future cash costs that may be incurred.

One-Time Items

The new rules offer guidelines for the treatment of non-recurring items, prohibiting adjustments identified as non-recurring, infrequent or unusual when (1) the nature of the charge or gain is such that it is reasonably likely to recur within two years, or (2) there was a similar charge or gain within the prior two years. USA will review items identified as non-recurring in future periods to ensure they comply with this guidance.

Reconciliation of Non-GAAP Measures to GAAP Measures and Presentation

Analyst Conference Call

USA Interactive will audiocast its conference call with analysts and investors discussing the company's first quarter financial results and certain forward-looking information on Thursday, May 1, 2003, at 12:00 p.m. Eastern Time (ET). The live audiocast is open to the public at www.usainteractive.com/investor_relations.

Additional Information And Where To Find It

Safe Harbor Statement Under The Private Securities Litigation Reform Act Of 1995

This press release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include statements relating to USA's anticipated financial performance, business prospects, new developments, new merchandising strategies and similar matters, and/or statements preceded by, followed by or that include the words "believes," "could," "expects," "anticipates," "estimates," "intends," "plans," "projects," "seeks," or similar expressions. These forward-looking statements are necessarily estimates reflecting the best judgment of USA's senior management and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. These forward-looking statements are subject to risks, uncertainties and assumptions that could have a material adverse effect on USA's business, financial condition or results of operations. You should understand that the following important factors could affect USA's future results and could cause those results to differ materially from those expressed in the forward-looking statements: (1) the risk that USA's and Expedia' businesses and/or USA's and Hotels.com's businesses will not be integrated successfully; (2) costs related to the proposed transactions; (3) material adverse changes in economic conditions generally or in such conditions affecting USA's markets or industries;

(4) future regulatory and legislative actions and conditions affecting USA's operating areas; (5) competition from others; (6) successful integration of our divisions' management structures; (7) product demand and market acceptance; (8) the ability to protect proprietary information and technology or to obtain necessary licenses on commercially reasonable terms; (9) the ability to maintain the integrity of USA's systems and infrastructure; (10) the ability to expand into and successfully operate in foreign markets; (11) obtaining and retaining skilled workers and key executives, (12) acts of terrorism; and (13) war or political instability. In addition, investors should consider the other information contained in or incorporated by reference into USA's filings with the U.S. Securities and Exchange Commission (the "SEC"), including its Annual Report on Form 10-K for the fiscal year ended 2002, especially in the Risk Factors and the Management's Discussion and Analysis sections, and its Current Reports on Form 8-K. Other unknown or unpredictable factors also could have material adverse effects on USA's future results, performance or achievements. In light of these risks, uncertainties, assumptions and factors, the forward-looking events discussed in this press release may not occur. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date stated, or if no date is stated, as of the date of this press release.

USA is not under any obligation and does not intend, except as specifically stated, to make publicly available any update or other revisions to any of the forward-looking statements contained in this press release to reflect circumstances existing after the date of this press release or to reflect the occurrence of future events even if experience or future events make it clear that any expected results expressed or implied by those forward-looking statements will not be realized.

In connection with the proposed merger transactions with Expedia and Hotels, USA Interactive and Expedia will file a proxy and information statement/prospectus and USA Interactive and Hotels.com will file an Information Statement/Prospectus, in each case with the Securities and Exchange Commission. Investors and security holders are urged to read carefully these documents regarding the proposed transactions when they become available, because they will contain important information. Investors and security holders may obtain a free copy of these documents (when each is available) and other documents containing information about USA Interactive, Expedia, Inc. and Hotels.com, without charge, at the SEC's web site at http://www.sec.gov. Free copies of USA Interactive's filings may be obtained by directing a request to USA Interactive, 152 West 57th Street, New York, New York, 10019, Attention: Investor Relations, free copies of Expedia's filings may be obtained by directing a request to Expedia, Inc. 13810 SE Eastgate Way, Suite 400, Bellevue, Washington 98005, Attention: Investor Relations, and free copies of Hotels.com's filings may be obtained by directing a request to Hotels.com, 8140 Walnut Hill Lane, Suite 203, Dallas, TX 75231, Attention: Investor Relations.

Earnings before income taxes and minority interest	(136,289)	(62,732)	(199,022)	2,096	(196,926)
Income taxes	54,877	24,607	79,484	(822)	78,662
Minority interest	(25,384)	18,817	(6,567)	0	(6,567)
Earnings before preferred dividend	(106,796)	(19,309)	(126,105)	1,274	(124,831)
Preferred dividend	(3,264)	0	(3,264)	0	(3,264)
Basic income available to common shareholders	(110,060)	(19,309)	(129,369)	1,274	(128,095)
Impact of dilutive securities	(1,992)	1,992	0	0	0
Diluted net income	($112,052)	($17,317)	($129,369)	$1,274	($128,095)

Diluted net income	($128,095)
Amortization of non-cash items	135,747
Equity pick-up of VUE	243,276
Less: Tax and minority interest	(140,850)
Adjusted Net Income	$110,077
Adjusted EPS	$0.16

Basic EPS	(0.23)	(0.20)	(0.20)
Diluted EPS	(0.23)	(0.20)	(0.20)

Basic weighted average shares outstanding (d)	487,244	145,660	632,904	0	632,904
Options, warrants and restricted stock, treasury method	0	0	0	0	0
Conversion of preferred shares to common (if applicable)	0	0	0	0	0
Diluted weighted average shares outstanding (d)	487,244	145,660	632,904	0	632,904
Options, warrants and restricted stock, treasury method	23,390	35,363	58,754	0	58,754

Gross Profit	354,166	24,901	379,067	0	379,067
Other operating costs	(232,968)	(15,723)	(248,691)	0	(248,691)
HSN cable distribution fees	(13,000)	0	(13,000)	0	(13,000)
Depreciation	(38,220)	(1,465)	(39,685)	0	(39,685)
Add back: Disengagement coupons	857	0	857		857
EBITA	70,835	7,713	78,548	0	78,548
Amortization of non-cash items:					
Distribution and marketing	(6,964)	(4,059)	(11,023)	0	(11,023)
Compensation expense	(3,808)	(61,879)	(65,687)	0	(65,687)
Other intangibles	(21,101)	(25,551)	(46,652)	0	(46,652)
Restructuring	0	0	0	0	
HSN disengagement costs (c)	(11,179)	0	(11,179)	0	(11,179)
Operating income	27,783	(83,776)	(55,993)	0	(55,993)
Interest, net	(4,668)	24,965	20,297	0	20,297
Equity pick-up of VUE	0	0	0	0	
Equity losses in affiliates and other	(12,132)	(120)	(12,252)	0	(12,252)
Earnings before income taxes and minority interest	10,983	(58,931)	(47,948)	0	(47,948)
Income taxes	(15,950)	25,281	9,331	0	9,331
Minority interest	8,937	(8,674)	263	0	263
Earnings before preferred dividend	3,970	(42,323)	(38,353)	0	(38,353)
Preferred dividend	(1,967)	(1,297)	(3,264)	0	(3,264)
Basic income available to common shareholders - Cont ops	2,003	(43,620)	(41,617)	0	(41,617)
Impact of dilutive securities	(1,095)	1,095	0	0	
Diluted income					

of restricted stock (f)	131	131	0	131	
Adjusted EPS shares outstanding	422,189	269,218	691,407	0	691,407

(a) Pro forma adjustments represent the impact of USA's initial acquisition of a majority stake in Expedia which occurred in February 2002, the contribution of USA Entertainment to VUE which occurred in May 2002, the roll-up of USANi LLC which occurred in conjunction with the Vivendi transaction, the roll-up of Home Shopping Network, Inc., which occurred in June 2002, and the merger with Ticketmaster, which closed January 17, 2003, as well as the pending Expedia merger and Hotels.com merger, which are expected to close in summer of 2003. Also included is the impact of these transactions on shares outstanding.

(b) One-time items in 2002 reflect the cumulative effect of accounting related to the adoption of the new rules for goodwill.

(c) Costs related to marketing and related activities in the disengagement markets.

(d) Discontinued operations relates to the operations of USA Entertainment in 2002.

(e) Pro forma shares include the impact of the Ticketmaster merger which closed on January 17, 2003, the pending Expedia merger and the pending Hotels.com merger, as well as the Expedia transaction that closed on February 4, 2002, shares issued in the Vivendi transaction that closed May 7, 2002 and the roll-up of Home Shopping Network, Inc., which occurred in June 2002.

(f) For Adjusted EPS purposes, the impact of restricted shares is based on the weighted average shares outstanding, without taking into account the treasury method impact of computing dilutive securities.

F-2

USA Interactive
SEGMENT RESULTS FOR THREE MONTHS ENDED MARCH 31, 2003 AND 2002
($in thousands)

	Revenue (a)			EBITA (b)		
	Q1 2003	Q1 2002	Growth	Q1 2003	Q1 2002	Growth
Electronic Retailing						
HSN - US	$414,973	$395,444	5%	$35,106	$32,524	8%
HSN - International	115,243	64,872	78%	14,992	(5,519)	NM
Total Electronic Retailing	530,216	460,316	15%	50,098	27,005	86%
Information and Services						
Ticketing	195,086	153,391	27%	41,436	24,047	72%
Personals	40,895	25,416	61%	2,693	5,626	-52%

Total Travel Services	69,924	31,642	121%
Interactive Development (d)	(2,129)	(323)	-559%
Corporate	(19,043)	(12,334)	-54%
Intersegment Elimination (e)	-	4,059	NM
Total Consolidated	$93,489	$27,783	236%

(a) 2002 revenue is pro forma for USA's initial acquisition of a majority stake in Expedia which occurred in February 2002. The impact was $35.5 million.

(b) EBITA is presented before one-time items. 2003 amounts represent costs incurred by Expedia and Ticketmaster for investment banking, legal and accounting fees related directly to the mergers. These costs were incurred solely in relation to the mergers, but may not be capitalized since Expedia and Ticketmaster were considered the targets in the transaction for accounting purposes. These costs do not directly benefit operations in any manner, would not normally be recorded by USA if not for the fact it already consolidated these entities, and are all related to the same transaction, as USA simultaneously announced its intention to commence its exchange offer for the companies in 2002. The majority of costs are for advisory services provided by investments bankers, and the amounts incurred in 2003 were pursuant to the same fee letters entered into by each company in 2002. Given these factors, USA believes it is appropriate to consider these costs as one-time.

(c) Operating income is presented on an actual basis.

(d) Interactive development includes costs for USA's potential US travel network and emerging Electronic Retailing operations.

(e) Intersegment elimination of $4.1 million impacting actual operating income in 2002 is related to the elimination of expense for non-cash marketing provided by USA Cable, which is included in discontinued operations.

USA Interactive
Proforma Segment Results$in millions, rounding differences may exist

	Q1 2002 (a)				
	Revenue	Operating Expenses, ex. D&A, disengagement & one-time items	Depreciation	Amortization of cable distribution fees	EBITA
Electronic Retailing:					
HSN - U.S. (b)	$395	$(339)	$(12)	$(12)	$33

Local Services	(13)	-	-
PRC	-	-	-
ECS / Styleclick	(0)	-	-
Total Information & Services	(25)	-	-
Travel Services:			
Expedia	(17)	-	-
Hotels.com	(6)	-	-
Interval	-	-	-
TV Travel Shop	-	-	-
Total Travel Services	(23)	-	-
Interactive Development	-	-	-
Corporate expense and other adjustments	(63)	-	-
Intersegment Elimination	0	-	-
TOTAL	$(123)	$(12)	$-

Q1 2002 (a)

	Proforma Operating Income	Adjustments (d)	Operating Income
Electronic Retailing:			
HSN - U.S. (b)	$9	$12	$21
HSN - International	(6)	0	(6)
Total Electronic Retailing	3	12	15
Information & Services:			
Ticketing	16	6	22
Personals	2	1	3
Local Services	(23)	0	(23)
PRC	(3)	-	(3)
ECS / Styleclick	(9)	-	(9)
Total Information & Services	(18)	7	(11)
Travel Services:			
Expedia	14	(1)	13

Services	545	(432)	(9)	-	104
Interactive Development	-	(1)	0	-	(1)
Corporate expense and other adjustments	-	(11)	(2)	-	(13)
Intersegment Elimination	(4)	4	-	-	(0)
TOTAL	$1,392	$(1,163)	$(43)	$(14)	$173

Q1 2003 (a)

	HSN Amortization of non-cash items	disengagement costs	One-time items (c)
Electronic Retailing:			
HSN - U.S. (b)	$(12)	$(4)	$-
HSN - International	(0)	-	-
Total Electronic Retailing	(13)	(4)	-
Information & Services:			
Ticketing	(8)	-	(0)
Personals	(2)	-	-
Local Services	(13)	-	-
PRC	-	-	-
ECS / Styleclick	(0)	-	-
Total Information & Services	(23)	-	(0)
Travel Services:			
Expedia	(22)	-	(2)
Hotels.com	(5)	-	-
Interval	(6)	-	-
TV Travel Shop	(1)	-	-
Total Travel Services	(36)	-	(2)
Interactive Development	(1)	-	-
Corporate expense and other adjustments	(63)	-	-
Intersegment			

February 2002, the contribution of USA Entertainment to VUE which occurred in May 2002, the roll-up of USANi LLC which occurred in conjunction with the VUE deal, the roll-up of Home Shopping Network, Inc., which occurred in June 2002, and the merger with Ticketmaster, which closed January 17, 2003, as well as the pending Expedia merger and pending Hotels.com merger which are expected to close in the summer of 2003.

(b) HSN-U.S. includes results from IDL, which was previously included in HSN - International. HSN U.S. revenue is shown net of disengagement related sales rebates.

(c) One-times in 2003 are related to costs incurred by Expedia and Ticketmaster for investment banking, legal and accounting fees related directly to the mergers. See footnote (b) on F-3 for more detail.

(d) Adjustments reflect the reversal of the impact of pro forma to arrive at actual operating income.

F-4

CONTACT: USA Communications:
Ron Sato, 212/314-7254
or
USA Investor Relations:
Roger Clark / Lauren Rosenfield, 212/314-7400NASDAQ:ROOM NASDAQ:EXPE

URL: http://www.businesswire.com

LOAD-DATE: May 2, 2003

than five hours between charges, but to get there, Toshiba had to use a lithium-ion brick That makes the M1 the same 1.5-inch thick, 54-pound package as its predecessor.

Releases of still more power-efficient Centrino chips a month from now will give a similar boost to ultraportable designs. Known as minis or subnotebooks, this class is usually outfitted with [pounds sterling]2-inch displays, a hard drive and an external multipurpose drive. Ultraportables have never gotten good battery life because they don't have much room inside. Centrino technology should help.

If those early performance tests are accurate, it may even have an impact on 7- to 8-pound "performance" notebooks, where battery life is low on the wish list. Intended mostly for the office-to-home-office commute, these portables have plenty of everything, including a 15-inch, high-resolution display and a Pentium 4-M processor. But Pentium Ms may start crowding Pentium 4-Ms out of this space. At the same time, says Krewell, price cuts in 4-Ms make them attractive alternatives for manufacturers who've been putting cheaper desktop processors in large 9- to 10-pound portables.

Time for a Change?

What should your company do about Centrino? That depends on the age of your portable fleet. If, like so many firms, you refreshed your notebooks going into Y2K, Centrino comes along at an opportune time in a three-year lifecycle.

But if your 4-M notebooks are only a year or two old, you may want to pick up a few extra at fire-sale prices--especially if your vendor's parts availability guarantee is running out. Analysts say system management and support savings accrue to those with as few hardware profiles as possible--he exception being Pentium III-M notebooks, whose time has simply passed.

RELATED ARTICLE: THIN IS IN: The following include 1.3GHZ to 1.6GHz Pentium M processors with 1MB of cache, a 400MHZ frontside bus, 14.1-inch color displays, 256MB RAM expandable to 2GB, gigabit Ethernet and Wi-Fi adapters.

Latitude D600

Dell Computer

12.4 X 10.1 X 1.2 inches

4.68 lbs./3+ hour battery

Street price: $1,799

www.dell.com

Tecra M1

Toshiba Computer

Systems Group

12.0 x 10.6 X 1.5 inches

5.7 lbs./6+ hour battery

Street price: $2,134

www.toshiba.com

ThinkPad T40

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Marketing

May 1, 2003

SECTION: ADWATCH, Pg. 21

LENGTH: 333 words

HEADLINE: THE WEEKLY ANALYSIS OF ADVERTISEMENT RECALL

BODY:

Q: Which of the following TV commercials do you remember seeing recently?

Last week		Account	Agency/TV buyer	%
1	(1)	B&Q	Bates UK/ZenithOptimedia	79
2	(-)	AOL	MWO/BBJ Media	62
3=	(-)	Kellogg's Cornflakes	J Walter Thompson/MindShare	55
3=	(-)	Yellow Pages	Abbott Mead Vickers BBDO/The Allmond Partnership	55
3=	(9)	Burger King	Delaney Lund Knox Warren/Carat	55
6	(-)	Vodafone Live!	Wieden & Kennedy; J Walter Thompson/ OMD UK	53
7	(-)	Flora Margarine	Lowe/Initiative Media	49
8=	(-)	Powergen	Rainey Kelly Campbell Roalfe Y&R/ Initiative Media	46
8=	(-)	Alton Towers	Cheetham Bell JWT/Manning Gottlieb OMD	46
10	(-)	Comet	Saatchi & Saatchi/ZenithOptimedia	43
11	(-)	Doritos	Abbott Mead Vickers BBDO/OMD UK	41
12	(-)	Wall's Magnum	McCann-Erickson/Initiative Media	40
13	(-)	Dove Shampoo	Ogilvy & Mather/Initiative Media	39
14	(-)	Daz	Leo Burnett/Starcom Motive	34
15	(-)	Debenhams	WCRS/Carat	33
16	(-)	Co-op Supermarket	Partners BDDH/MediaCom North	30
17	(-)	Saab 93	Lowe/Universal McCann	29
18	(-)	New magazine	In-house/MediaCom	19
19	(-)	Adidas Clima	180/Carat	18
20	(-)	Intel Centrino	MVBMS Euro RSCG/Media Planning Group	11

Adwatch research was conducted from April 15 to April 16 by NOP Research Group (020 7890 9778) as part of a weekly telephone omnibus survey among more than 1000 adults. Copies of the Adwatch data and analysis are available from Samantha Spencer at NOP. Advertisements were selected by Xtreme Information (020 7871 8080) and Mediaedge:CIA UK (020 7803 2000).

LOAD-DATE: May 1, 2003

EXHIBIT G

Business

www.bayarea.com/business

MARKET REPORT

Nasdaq	▼	1,401.07	-30.50	-2.1%
S&P 500	▼	909.93	-13.00	-1.4%
Bonds*	▲	4.03%	+0.01%	--

*10-year Treasury

INSIDE

CUTBACKS: Alcoa announced plans Wednesday to cut 8,000 jobs this year and sell some businesses. It also reported a loss that was wider than expected. | **3C**

STOCKS: Discouraging earnings news from Alcoa and Gateway jarred Wall Street on Wednesday, giving blue-chip stocks their biggest decline in a month. | **4C**

Intel will wage Centrino campaign

CHIP GIANT TO PROMOTE NEW BRAND NAME FOR ITS WIRELESS COMPUTING PRODUCTS

By Therese Poletti
Mercury News

Are you ready for "Centrino Inside"?

Intel — which turned its PC processors into a global consumer brand a decade ago with its "Intel Inside" campaign — announced Wednesday that it will market a laptop processor and two supporting products for wireless computing under a new brand name, Centrino.

The Centrino marketing effort, which will cost several hundred million dollars, demonstrates just how important the emerging market of wireless computing, or WiFi, is to the Santa Clara chip giant.

Like the "Intel Inside" campaign, Intel will market Centrino in part by paying a subsidy to PC makers that advertise machines that contain the Centrino chip products.

But Intel's packaging of its mobile processor, the Pentium M, with a supporting chipset and component card to form the Centrino brand is upsetting some competitors that are developing competing chipsets for the growing 802.11 WiFi market.

"It's tying their position in the processor and leveraging that position to get you to buy other things," said Rich Redelfs, president and chief executive of Atheros Communications, a wireless chip start-up in Sunnyvale.

Atheros makes a dual-band 802.11a/b chip that works with the Pentium M and competes with the Intel 2200 wireless chipset that is part of the Centrino products. Redelfs said Atheros has yet-to-be announced deals to provide its chips to some PC makers for notebooks using the Pentium M.

"Intel is going to try and make the excitement about wireless high-profile," said Howard High, an Intel spokesman. "In doing that, we are clearly trying to establish a great business opportunity not only for ourselves, but for our customers. In con-

See **INTEL,** *Back Page*

EXHIBIT H

INTEL | Centrino campaign announced

Continued from Page 1C

[illegible] to broaden the opportunity for [illegible] that creates opportunities for [illegible]

[illegible] the first half of this year will include Intel's forthcoming Pentium M mobile chip, code-named Banias, which is designed from the ground up for notebook computing, an 802.11b wireless chipset that handles the Wi-Fi radio functions, and a card to hold the wireless components that will fit inside a notebook PC.

PC makers have the option of buying all three pieces from Intel and selling them under the umbrella Centrino brand, or they can just buy the Pentium M processor from Intel and buy a wireless chipset and card from other vendors.

If a PC maker chooses to buy only the new mobile processor, it will not be able to use the Centrino brand name or blue and pink logo, but it will be able to market its system as having a Pentium M processor.

Intel Chief Executive Craig Barrett is expected to give a major speech on the importance of wireless computing at the Consumer Electronics Show in Las Vegas today.

While Intel's huge push into wireless is expected to further boost the already growing [illegible] market, smaller chip developers are concerned. Intel could end up dominating the nascent market as it does the PC microprocessor business, where it holds a roughly 80 percent share.

"Right now it appears to be playing out to the detriment of the other wireless LAN suppliers," said Joe Byrne, a Gartner Dataquest analyst.

There is also speculation that the PC makers that buy the whole Centrino package vs. those that buy just the Pentium M chip will [illegible] more in the way of [illegible] from Intel [illegible] smaller competitors at a disadvantage.

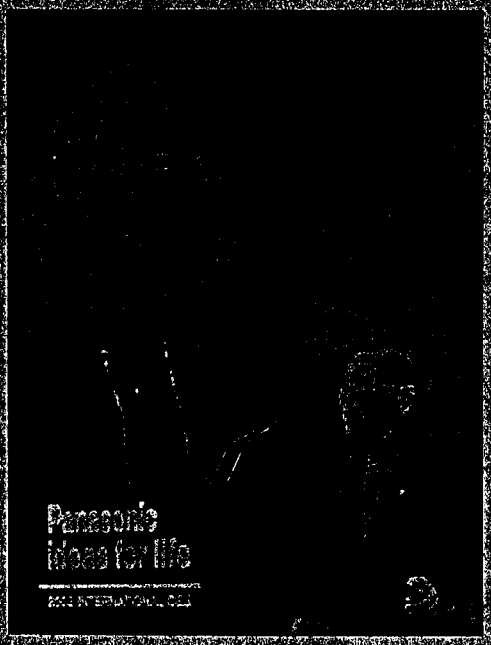
High [illegible] discloses details of the marketing [illegible] but he said that a huge portion of Intel's advertising budget this year will be spent to promote Centrino.

All of [illegible] efforts will be on trying to establish the Centrino brand, High said, adding that Intel will spend more on Centrino than it did on the Pentium 4 launch, where it spent [illegible] hundred million dollars.

[illegible] investigation of the company's alleged anti-competitive practices have fully considered the legal implications of the Centrino marketing effort.

"What they are doing does not interfere with the ability of these third-party guys to secure design," Krewell said. But "the independent wireless vendors will still believe this is an illegal strategy."

Contact Therese Poletti at tpoletti@sfmercury.com or at (415) 477-2510.



CES | Tech enhancements take spotlight in Vegas

Continued from Page 1C

[illegible] partnerships with the big [illegible] companies — Samsung, Sanyo, Hitachi and Panasonic [illegible] talked about [illegible] connection between the personal computer and digital [illegible] playing an on-stage game of Microsoft's Midtown Madness against Los Angeles Lakers center Shaquille O'Neal, who played from his home in L.A. via satellite.

In the digital decade we're starting to see computing technology [illegible] being more [illegible]

[illegible] Microsoft [illegible] XM Satellite Radio's [illegible]

[illegible] XM Chief Executive Hugh Panero [illegible] the partnership with the [illegible] company and said he considers the entry into the home and portable markets to be the third launch.

Panero said his company is working on new products but must weigh what consumers are willing to pay. He said that consumers could soon see XM radio being broadcast through a wearable device or possibly through the home network.

Networking — nothing new to the early adopters of technology — is taking center stage at this week's show, as is recordable DVD technology, again something that has been shown before.

Panasonic previewed the SV-AV30, a palm-sized video playback device that comes built with a Smart Card flash memory slot so users can store video from other devices — such as the company's Smart Card camcorders, recorders and televisions — and view it on the nine-inch screen. Starting at $300, that device will be in stores in April.

French consumer electronics giant Thomson announced it would build an emergency alert system dubbed Alert Guard into its upcoming RCA television. The TV will have a built-in receiver that allows them to receive alerts from the emergency broadcasting system. Viewers will be able to customize the alert system to receive alerts for [illegible] alarm that goes off when [illegible] pending. A lighted [illegible]

[illegible] Emergency Management Agency. The system can include alerts for natural disasters, weather warnings, missing children alerts under the AMBER system.

Mercury News Staff Writer Dean Takahashi contributed to this report.

Contact Sam Diaz at sdiaz@sfmercury.com or at (408) 920-5081.

KAISER | Viacom foundation [illegible] in anti-AIDS [illegible]

Continued from Page 1C

[illegible] health issues.

We get a lot of criticism from traditional foundations and public health groups. Why are you partnering with them? All they care about is making money, said Foundation President Drew [illegible]. We probably won't ever be able to talk them out of [illegible]

However he added, the media are too powerful to ignore.

"Young people don't listen to their doctors," Altman said. "They don't listen to their [illegible]

[illegible] AIDS message.

The campaign (www.[illegible]hivaids.org) includes 49 public service announcements — 22 for television, 14 for radio and 13 for outdoor. It will be spread across Viacom's holdings, which include Nickelodeon, VH1, BET, Showtime and Blockbuster.

Entertainment shows

In addition, numerous entertainment shows with HIV/AIDS themes will be aired, including "The Division," produced by Universal Television and [illegible] productions; "Becker," produced by Paramount TV and airing on [illegible]; and "Enterprise," produced by Paramount TV and airing on UPN. Retailer Blockbuster will air public service announcements on store monitors. The Sundance Channel will show movies with HIV/AIDS themes.

Simon & Schuster, a division of Viacom, will show movies with HIV/AIDS themes.

Viacom property Paramount Pictures will produce a 90-page education booklet [illegible] also AIDS ads on the back of 60 place [illegible]

[illegible] were asked to have (or not to have) sex. The foundation also has partnerships with newspaper organizations such as the Washington Post and the Mercury News.

In a humorous ad on MTV, a dubbed "The Naked Guy" [illegible] young man in search of a [illegible] dom bares almost all. That public service announcement helped the foundation [illegible]

NOTICE TO BIDDERS

Notice is hereby given that the Governing Board (Board) of the Tamalpais Union High School District (District) is inviting contractors to prequalify to bid on certain construction work on District facilities over a period of one year (Prequalification). The estimated construction costs per Project under each facility is one million to twenty million dollars ($1,000,000–$20,000,000). Only prequalified contractors will be permitted bid on [illegible]

EXHIBIT I

intel

Intel® Centrino™ mobile technology notebooks can seamlessly handle your power-hungry applications wherever you go, enabling you to watch a DVD on an airplane, edit home movies in your living room, or listen to your entire music library in your backyard. With Intel Centrino mobile technology, you'll get integrated wireless capabilities so you can connect from locations equipped with wireless LAN (WLAN) access, whether you're at a caf?in the airport, or relaxing on your couch.

Press Releases

March 12, 2003
Intel Launches Intel® Centrino™ Mobile Technology

March 10, 2003
Intel Communications Fund Invests In Four Wi-Fi Companies

March 4, 2003
Portland Named 'Hottest' Spot In Intel's 'Most Unwired Cities' Survey

March 3, 2003
Intel® Centrino™ Mobile Technology Advertising Begins

Product Information

- Product Overview (684 KB, pdf)
- Product Backgrounder (102 KB, pdf)
- Performance Brief (822 KB, pdf)
- Datasheet: Intel® Pentium® M Processor (1.8 MB, pdf)

Technical Information

- Technology Backgrounder: An Introduction to Wireless LAN (162 KB, pdf)
- Research & Development: Building the Wireless Tomorrow (226 KB, pdf)
- Five Steps to Deploying a Wireless LAN (215 KB, pdf)
- Solutions for Large Business (1.2 MB, pdf)
- Solutions for Small and Medium Business (528 KB, pdf)
- Small/Medium Business Guide to WLAN (310 KB, pdf)
- Can Wireless Technology Change the Way Consumers Live?
- Notebook PCs and Wireless Networks for Higher Education (755 KB, pdf)

Animation, Video, etc.

- Centrino microarchitecture animations (3.8 MB Zip file)
- Centrino overview animation (7 MB Zip file)
- Small/Medium Business animation (7 MB Zip file)
- Large Business animations (11 MB Zip file)

- Enhanced SpeedStep animation (3 MB Zip file)
- Radio Report: Intel Centrino & Wi-Fi at New Heights (885 KB Zip file)
- Spanish Radio Report: Intel Centrino & Wi-Fi at New Heights (921 KB Zip file)

Additional Information

- Top 100: Intel's "Most Unwired Cities" Survey Results (12 KB, pdf)
- Fact Sheet: Intel Communications Fund's Wifi Investments (11 KB, pdf)
- Fact Sheet: Intel Centrino Mobile Technology Events at a Glance (18 KB, pdf)
- Fact Sheet: Intel Centrino Mobile Technology Zones (12 KB, pdf)
- Intel Centrino Mobile Technology processor die shot with description overlay (608 KB, pdf)
- Intel Centrino MobileTechnology Fellow Travelers List (8 KB, pdf)

Original Equipment Manufacturers

- Acer America Corporation
- Alienware Corporation
- CHEM USA Corporation
- Dell Computer Corporation
- Equus Computer Systems, Inc.
- Fujitsu PC Corporation
- Gateway, Inc.
- Hewlett-Packard Company
- IBM Corporation
- MDG
- Motion Computing, Inc.
- Panasonic Computer Solutions Company
- Sony Corporation of America
- Systemax, Inc.
- Toshiba America Information Systems, Inc.

Participating Companies

- AT&T Wireless
- Autodesk
- Allscripts Healthcare Solutions
- ABB
- Bell Canada
- Borders Group Inc.
- Cap Gemini Earnst & Young
- Check Point Software Technologies
- Cisco Systems
- Cometa Networks, Inc.
- Computer Associates
- Dallas-Fort Worth International Airport
- Deloitte Consulting
- Electronic Arts
- J.D. Edwards

http://appzone.intel.com/pressroom/PrintPressRelease.asp?file=http://w.../20030512comp.ht 5/8/2003

file://C:\DOCUME~1\jmlynch\LOCALS~1\Temp\DOS7DCCL.htm 5/8/2003

EXHIBIT J

THE
GEORGE BUSH'S WAR
BY NICHOLAS LEMANN
STYLE SPECIAL
JOHN GALLIANO'S DRESS-UP GAMES
Michael Specter
THE MAD MARQUISE
Judith Thurman
A KARL LAGERFELD PORTFOLIO
HELMUT NEWTON'S WILD YOUTH
Anthony Lane
WHAT HAPPENED TO THE DEPARTMENT STORE?
Adam Gopnik
PLUS:
Simon Schama on an artist's stone garden, John Updike on John O'Hara, Fiction by Thomas McGuane
UNITED STATES $3.95
CANADA/FOREIGN $4.95
39
08442
0 321825 9
MR

Advertisement

The Unwired Guide to the hottest wireless hotspots.

Hotels

Check in. Then check out your e-mail. Some of the hottest hotels are now even hotter. With wireless Internet access enabled in many lobbies, lounges and rooms, you can get online whenever you wish.

Restaurants

New meaning for the words "surf and turf." Some of the finest restaurants are now even finer. Wireless Internet access allows you to take care of business whenever you need to.

Wireless connectivity may require you to purchase additional services

Advertisement

Want to make a connection at the hottest spots in the country?

intel®

Advertisement

Find your place to unwire right here.

ZAGATSURVEY®

2003

WI-FI HOTSPOTS

RESTAURANTS & HOTELS
OFFERING WI-FI ACCESS

CHICAGO

LOS ANGELES

NEW YORK

SAN FRANCISCO

SEATTLE

Take advantage of the top hotspots with a top laptop.

Intel® Centrino™ mobile technology makes possible a new generation of thin, light, high-performance laptops built for wireless access and long battery life. Find out more at intel.com/unwire.

intel®

...configurations.

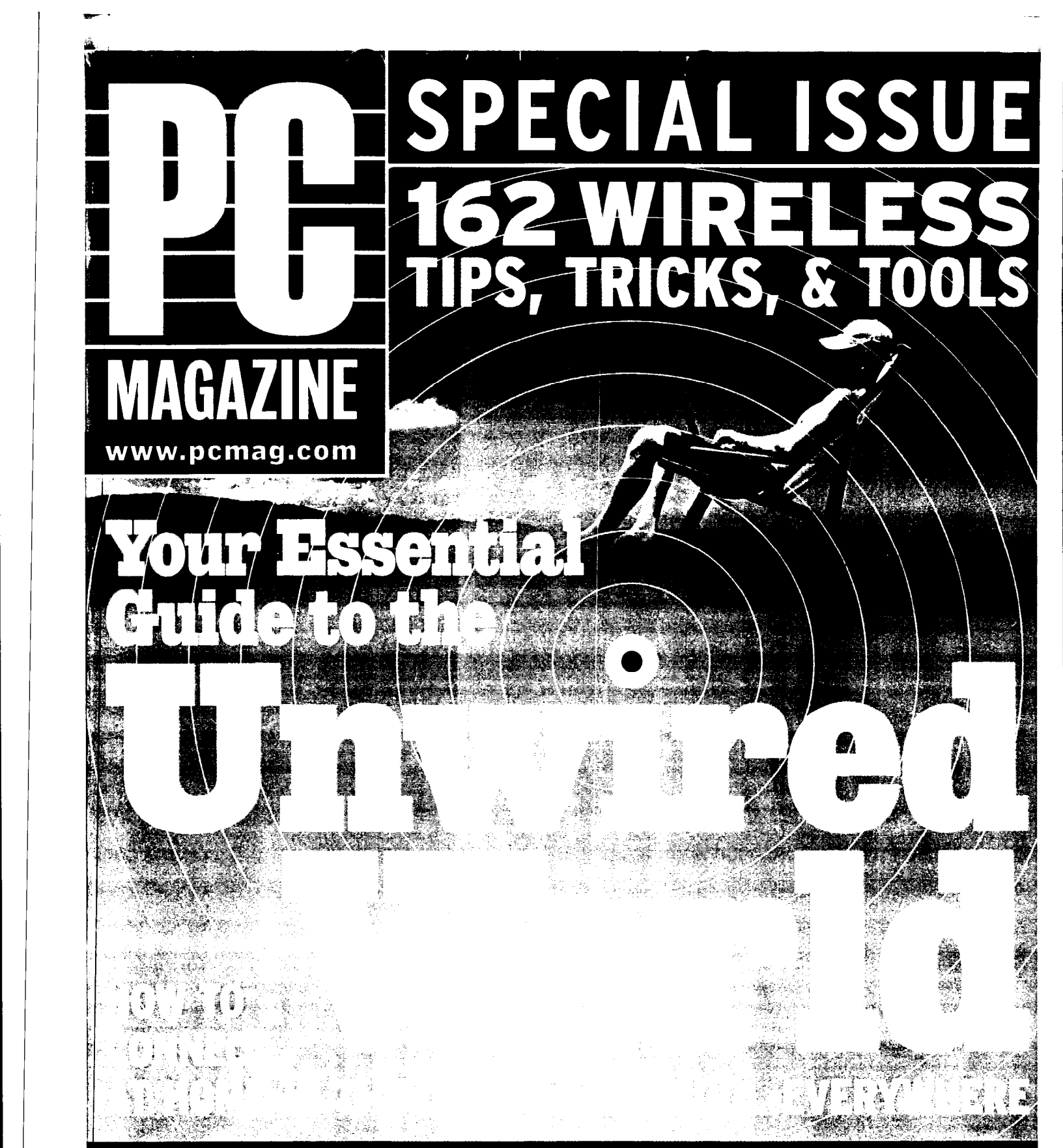
EXHIBIT K

PC MAGAZINE

www.pcmag.com

SPECIAL ISSUE

162 WIRELESS TIPS, TRICKS, & TOOLS

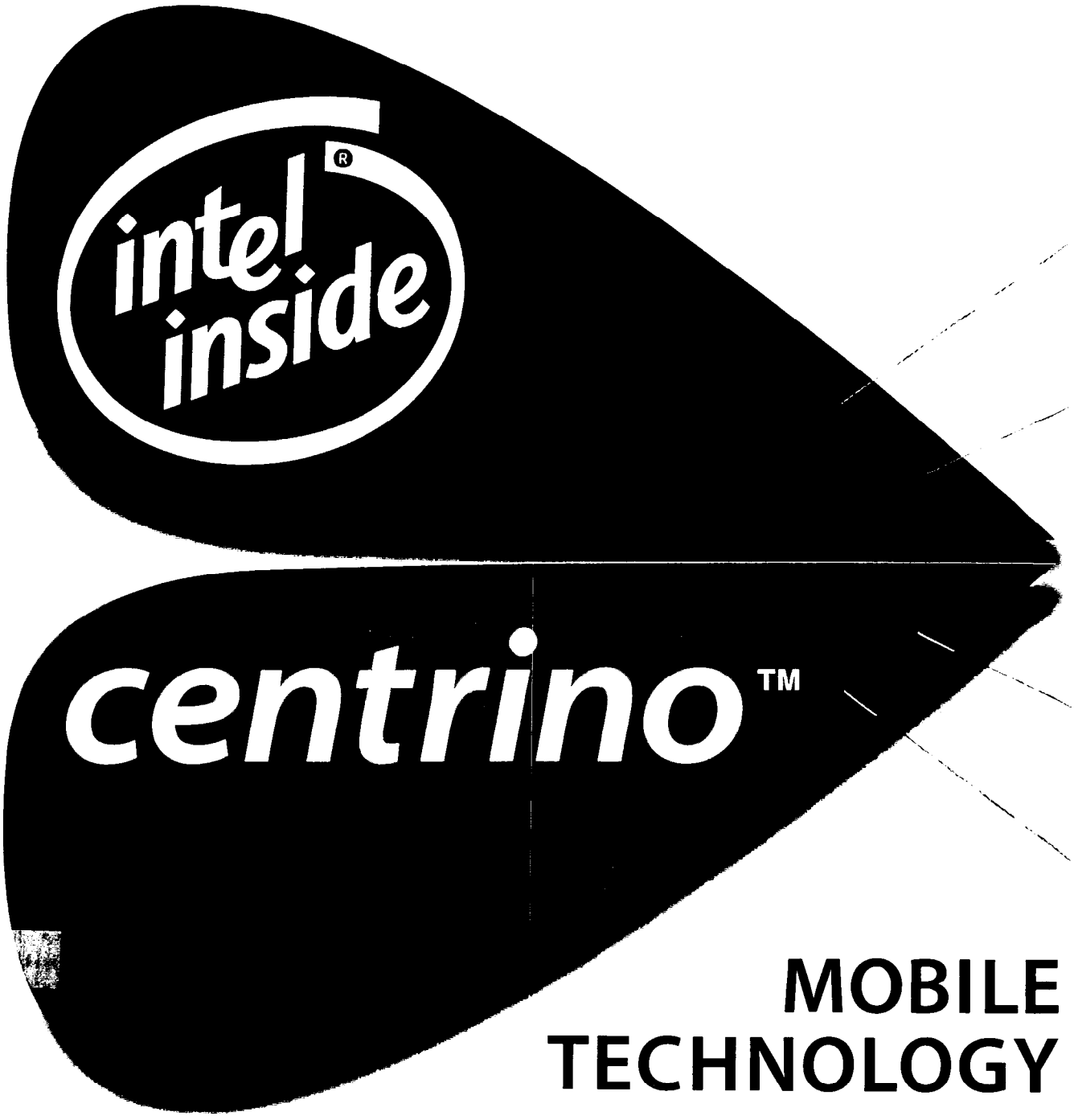


Your Essential Guide to the Unwired

The Best Notebooks, PDAs, and Access Points

FALL 2003

ZIFF DAVIS



MOBILE TECHNOLOGY

Wireless connectivity and some features may require you to purchase additional software, services or external hardware
Availability of public wireless LAN access points limited. See http://www.intel.com/products/centrino/more info

The freedom to connect without wires.

A laptop powered by Intel® Centrino™ mobile technology lets you connect around the house or in thousands of public places.

A battery that works as hard as you.

Intel Centrino mobile technology is designed for maximum battery life. Which means less time charging—and more time doing.

What to look for in an unwired laptop.

Power to blaze through your work.

A laptop powered by Intel Centrino mobile technology gives you the performance you need to rip through the most demanding applications.

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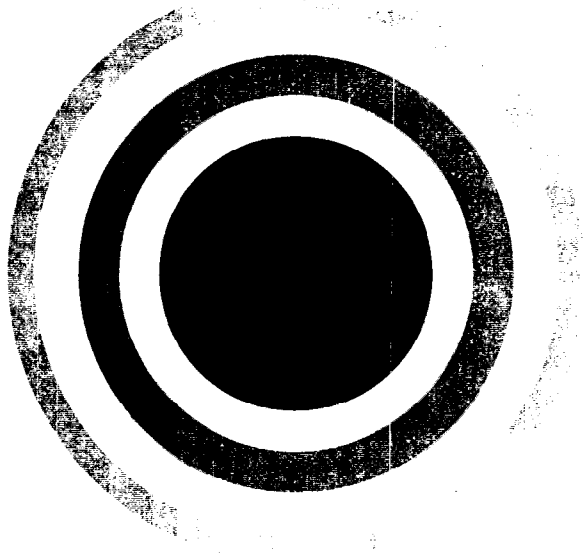

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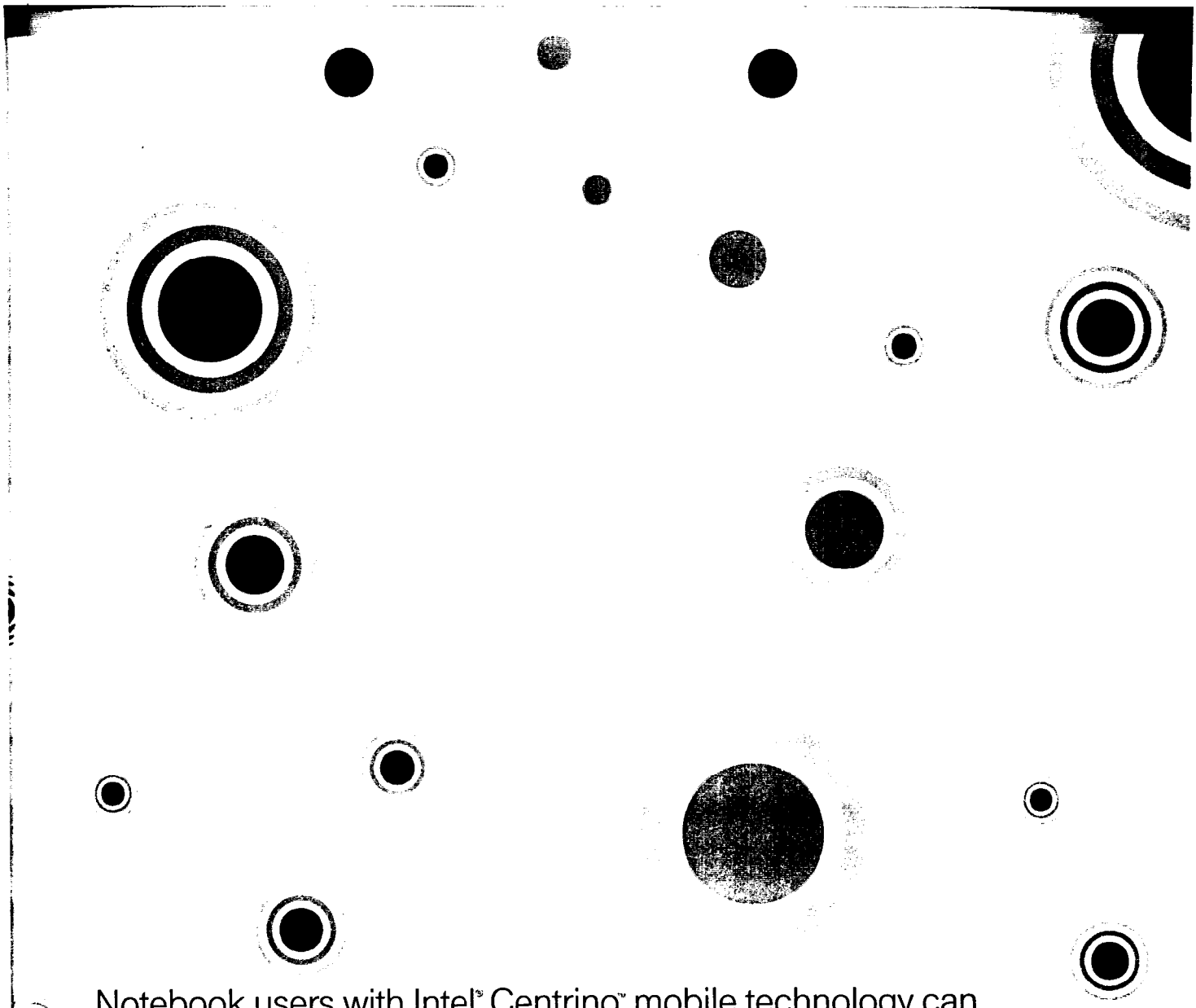

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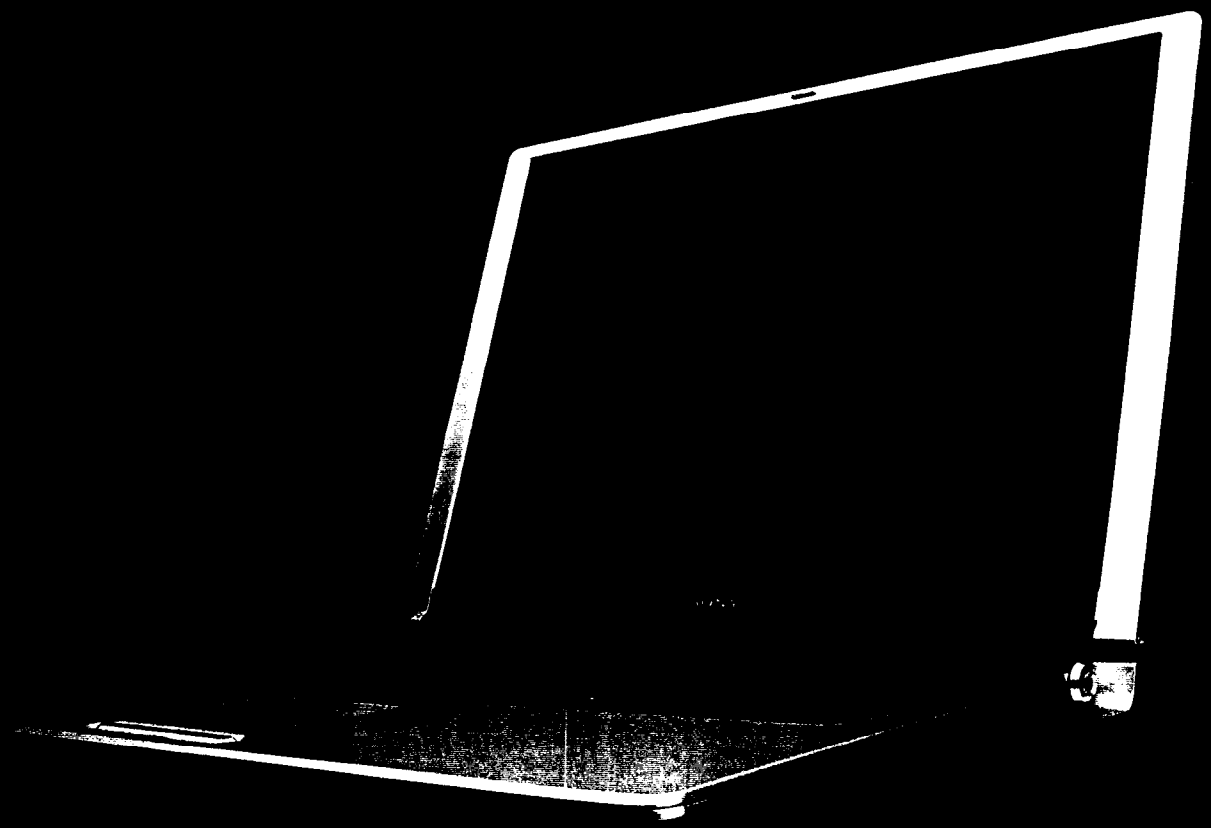

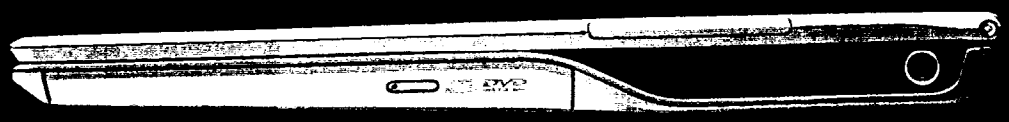

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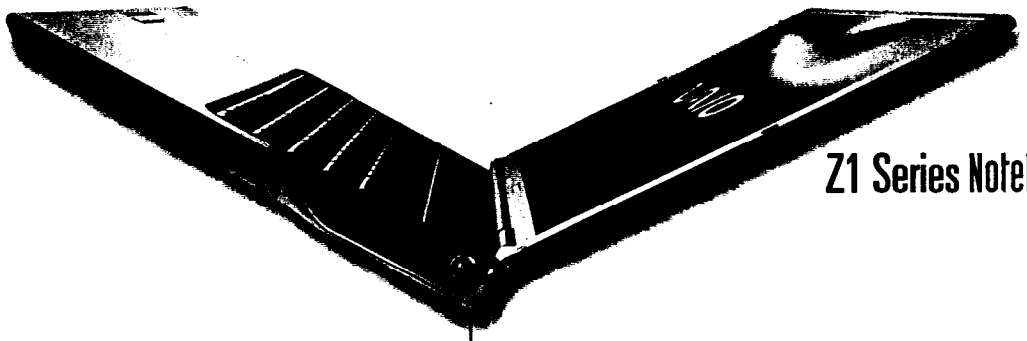

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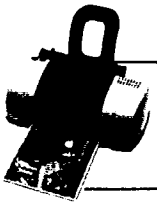

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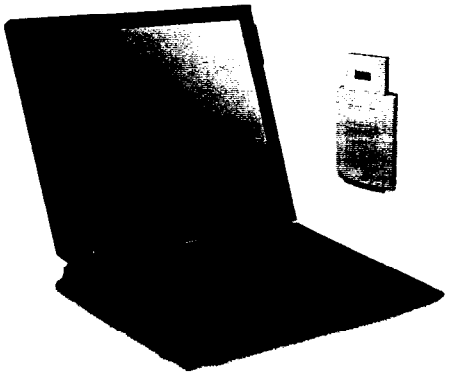

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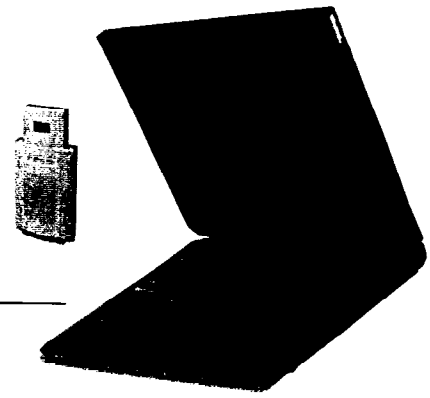

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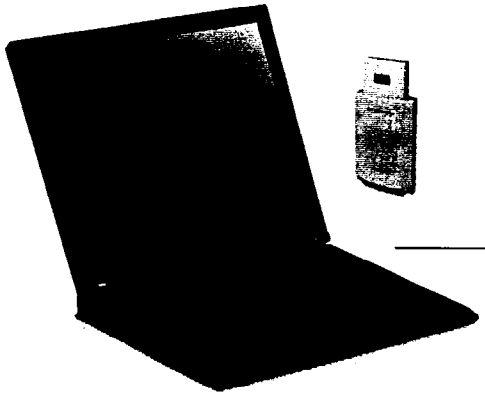

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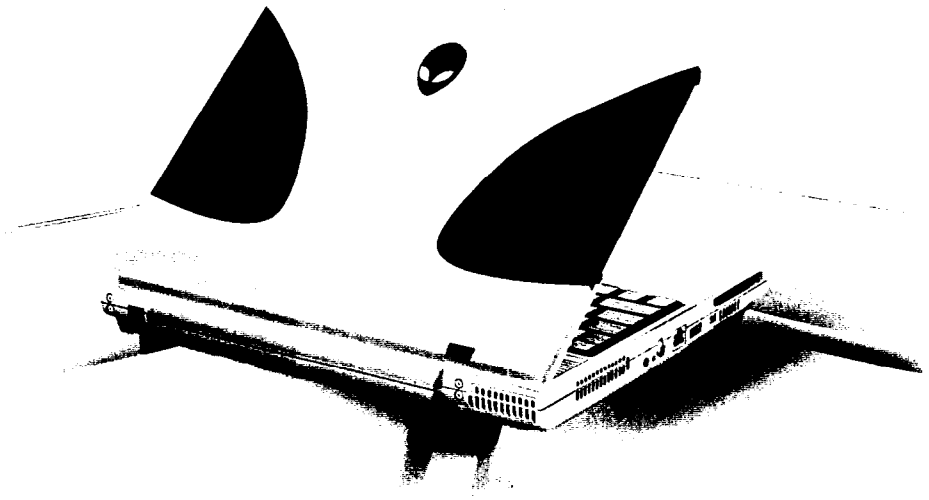

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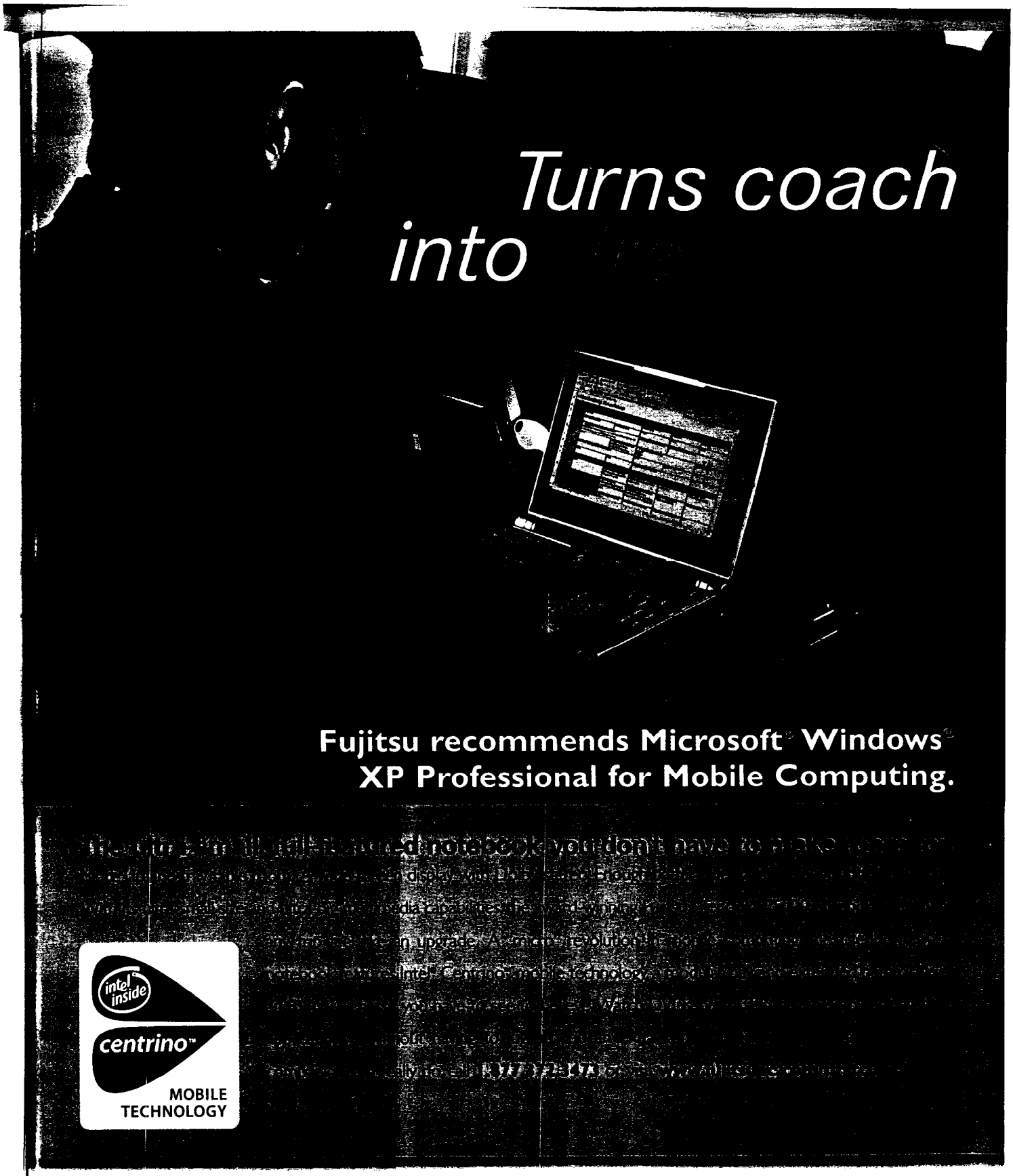

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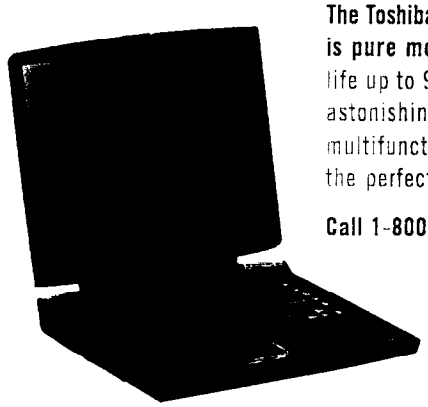

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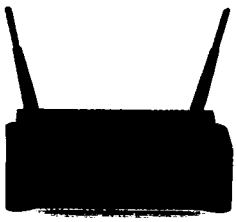

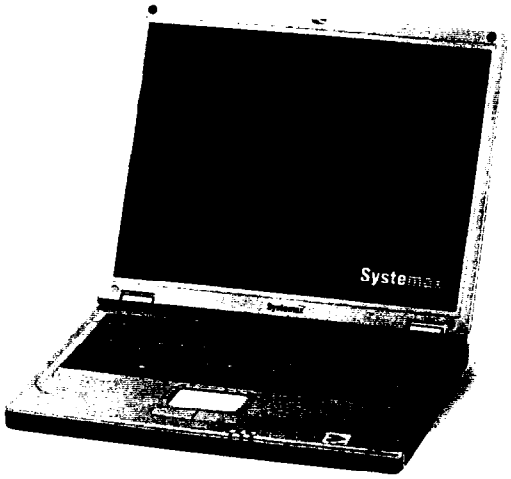

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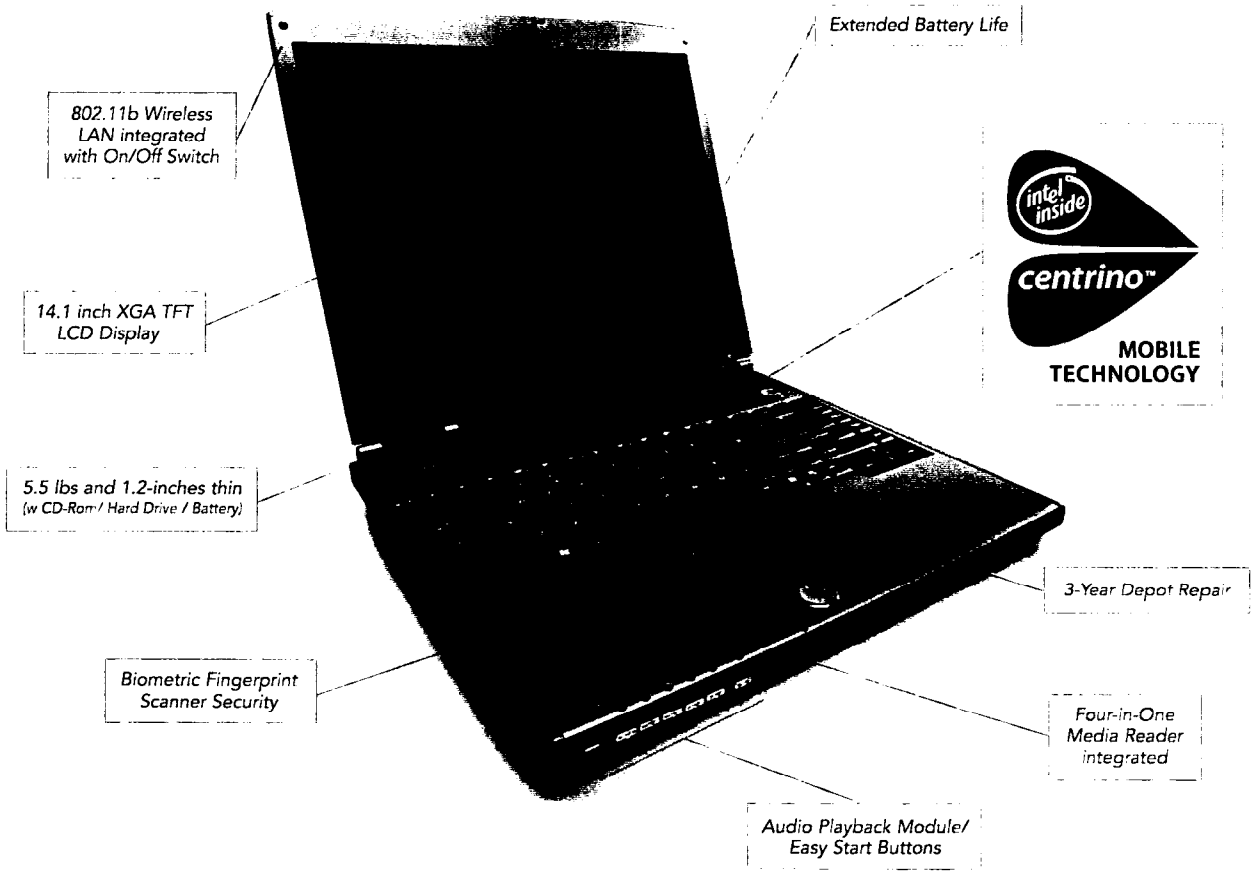

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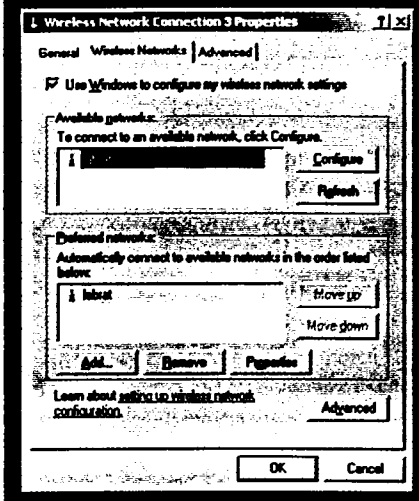
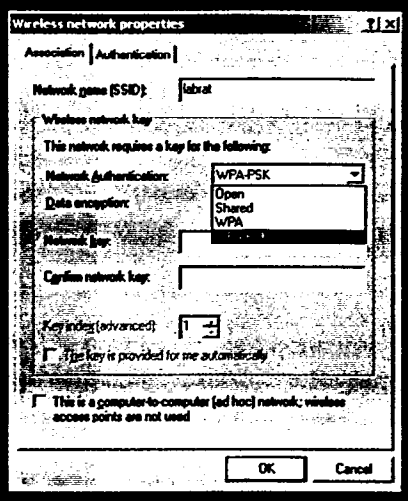
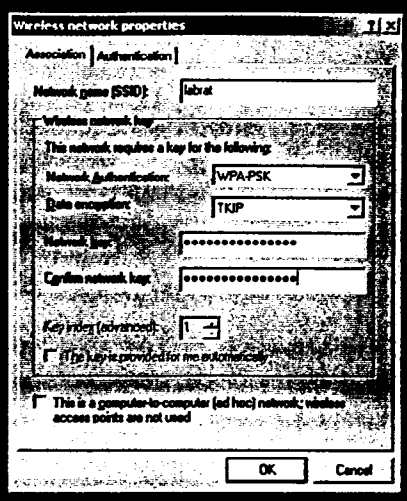
FIGURE 8: **CONFIGURE YOUR NETWORK CLIENT**



Here's how to set up WPA on the client side.



Set the authentication for the preshared key.



Type the name of your shared key carefully.

Device Manager (Figure 7).

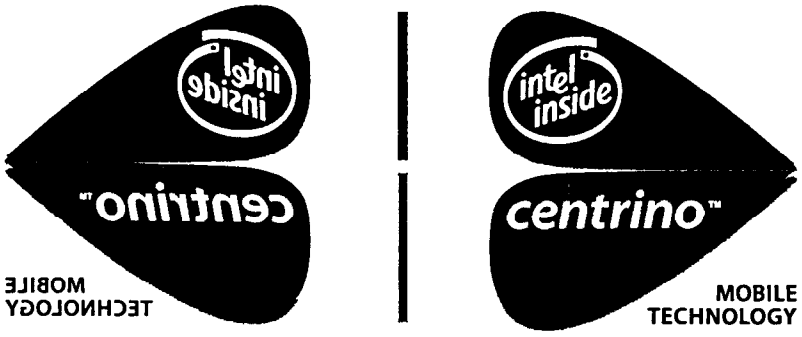
- From the Control Panel, double-click on the *System* icon and click on the *Hardware* tab. Click on *Device Manager.*
- Right-click on the wireless adapter.
- Select *Properties* and click on *Driver.* If your card hasn't been upgraded, you'll see a driver date prior to *5/26/2003.* If you driver is dated May 26 or later, it already supports WPA. You can click on *Cancel* and jump to the step that shows the *Wireless Networks* dialog (Figure 8).
- Click on *Update Driver.*
- Tell the wizard to search specific locations for the driver. Type in the directory where you unzipped the upgrade file.
- Click on *Next.*
- The updated driver will show a date of *5/26/2003* or later.

Don't give up yet. We're almost finished!

- Open the Network applet in the Control Panel, right-click on your wireless card, and click on the *Wireless Networks* tab (Figure 8).
- In the *Available networks* window, select the name of your network. This is the same as the SSID (network name) you configured in your router.
- Click on *Configure.*
- Under *Network Authentication,* select *WPA-PSK.* If you don't select the correct authentication mode, you won't be allowed to select the correct encryption mode (TKIP). If you leave network authentication set to *Open,* the only encryption options you'll see are *WEP* or *Disabled.*
- In *Data encryption,* select *TKIP* (or *AES* if you selected *AES* earlier).
- In *Network key,* type in the same WPA Shared Key you entered into the AP configuration and type it again under *Confirm network key.* Then click on *OK.*

Because you enabled WPA security on your AP previously, when you finish your client configuration, you should be able to associate with your access point and use the network as you did before. Only now you have a secure wireless link.

Craig Ellison is the operations director of PC Magazine Labs.



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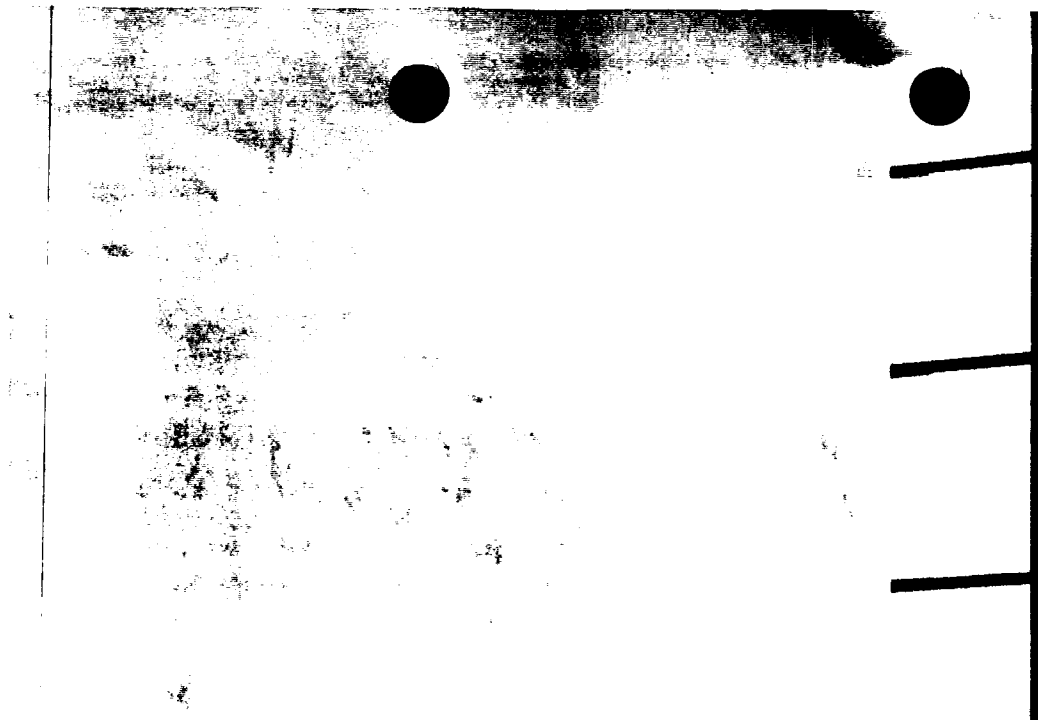

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IBM ThinkPad T40

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- IBM Rapid Restore™ PC software — One-button data-recovery and restore solution

System Features:
- Intel® Centrino™ mobile technology
  - Intel® Pentium® M processor 1.3GHz supports Enhanced Intel SpeedStep® technology[11]
  - Intel PRO Wireless Network Connection 802.11b[13]
- 14.1" XGA TFT Display (1024x768)
- 256MB DDR SDRAM • 30GB hard drive
- Ultrabay™ Slim CD-RW/DVD-ROM combo drive
- 5.0-hr battery life • 4.5-lb travel weight
- Microsoft® Windows® XP Professional
- 3-yr system/1-yr battery limited warranty[3]

$1,799

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ServicePac® Service Upgrade:
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IBM ThinkPad T40

Distinctive IBM Innovations:
- IBM Rapid Restore™ PC software — One-button data-recovery and restore solution

System Features:
- Intel® Centrino™ mobile technology
  - Intel® Pentium® M processor 1.4GHz supports Enhanced Intel SpeedStep® technology[11]
  - Intel PRO Wireless Network Connection 802.11b[13]
- 14.1" SXGA+ TFT Display (1400x1050)
- 256MB DDR SDRAM • 40GB hard drive
- Ultrabay™ Slim CD-RW/DVD-ROM combo drive
- 5.0-hr battery life • 4.5-lb travel weight
- Microsoft® Windows® XP Professional
- 3-yr system/1-yr battery limited warranty[3]

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5-yr Depot Repair
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IBM ThinkPad T40

Distinctive IBM Innovations:
- IBM Embedded Security Subsystem 2.0

System Features:
- Intel® Centrino™ mobile technology
  - Intel® Pentium® M processor 1.6GHz supports Enhanced Intel SpeedStep® technology[11]
  - Intel PRO Wireless Network Connection 802.11b[13]
- 14.1" XGA TFT Display (1024x768)
- 256MB DDR SDRAM • 40GB hard drive
- Ultrabay™ Slim CD-RW/DVD-ROM combo drive
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- Microsoft® Windows® XP Professional
- 3-yr system/1-yr battery limited warranty[3]

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ServicePac® Service Upgrade:
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IBM ThinkPad T40

Distinctive IBM Innovations:
- Access Connections software simplifies management of multiple connectivity environments

System Features:
- Intel® Pentium® M processor 1.6GHz supports Enhanced Intel SpeedStep® technology[11]
- Integrated Dual-band 802.11a/b[13] Wi-Fi wireless technology
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ServicePac® Service Upgrade:
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IBM ThinkPad T40p

Distinctive IBM Innovations:
- Access IBM — Simplifies access to online[1] and on-system information

System Features:
- Intel® Centrino™ mobile technology
  - Intel® Pentium® M processor 1.6GHz supports Enhanced Intel SpeedStep® technology[11]
  - Intel PRO Wireless Network Connection 802.11b[13]
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IBM ThinkPad Accessories

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Tripp Lite Ultra-Mini 4-port USB Hub #22P8200 $40

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guarantees. A service technician is scheduled to arrive at your location within two or four business hours or the next business day (depending on service) after remote problem determination is completed. For the 9x5x4-hour service, calls dispatched after 1:00 p.m. local time, you can expect the service technician to arrive by the morning of the next business day. For noncritical service requests, a service technician will arrive by the end of the following business day. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. On-site 24x7x2-hour service is not available in all locations. External peripherals, such as racks, tape drives and channel controllers, require their own, separate service coverage; they are not covered under the attached Machine. Service activation is required immediately following purchase. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. For failing non-IBM components, customer must provide replacement part unless IBM has a Technical Support Agreement with the manufacturer. Service does not cover accessories, supply items and certain parts such as batteries, frames and covers. [11] Based on IEEE 802.11b. This wireless LAN product has been designed to permit legal operation worldwide in regions in which it is approved. Operation on channels 12-14 is not permitted in all regulatory regions of the world. Consequently, the wireless LAN feature is limited to operate on channels 1-11 and will not support channels 12, 13 and 14. This product has been tested and certified to be interoperable by the Wireless Ethernet Compatibility Alliance and is authorized to carry the Wi-Fi logo. [13] With Intel SpeedStep, processor speed may be reduced to conserve battery power. [14] Requires download of client software. Based on IEEE 802.11a and 802.11b. This wireless LAN product has been designed to permit legal operation worldwide in regions in which it is approved. This product has been tested and certified to be interoperable by the Wireless Ethernet Compatibility Alliance and is authorized to carry the Wi-Fi logo. Standard shipping included when you order online. U.S. only. ThinkPad Protection is not available in all states; contact your sales representative for details. ThinkPad Protection cannot be combined with other warranty service upgrades. ThinkPad Protection #01N1575 is for purchase with 3-year warranty systems; #01N1577 is for purchase with 1-year warranty systems. IBM does not manufacture, warrant or support this product. IBM logos and trademarks used under license. Contact IBM for details. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM is not responsible for photographic or typographic errors. All other product names are registered trademarks or trademarks of International Business Machines Corporation in the U.S. and other countries. Lotus and SmartSuite are registered trademarks of Lotus Development Corporation, an IBM Company. Intel, Intel Inside, the Intel Inside logo, Celeron, Intel Centrino, the Intel Centrino logo and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the U.S. and other countries. Microsoft and Windows are trademarks or registered trademarks of Microsoft Corporation. Other company, product and service names may be trademarks or service marks of others. © 2003 IBM Corp. All rights reserved.

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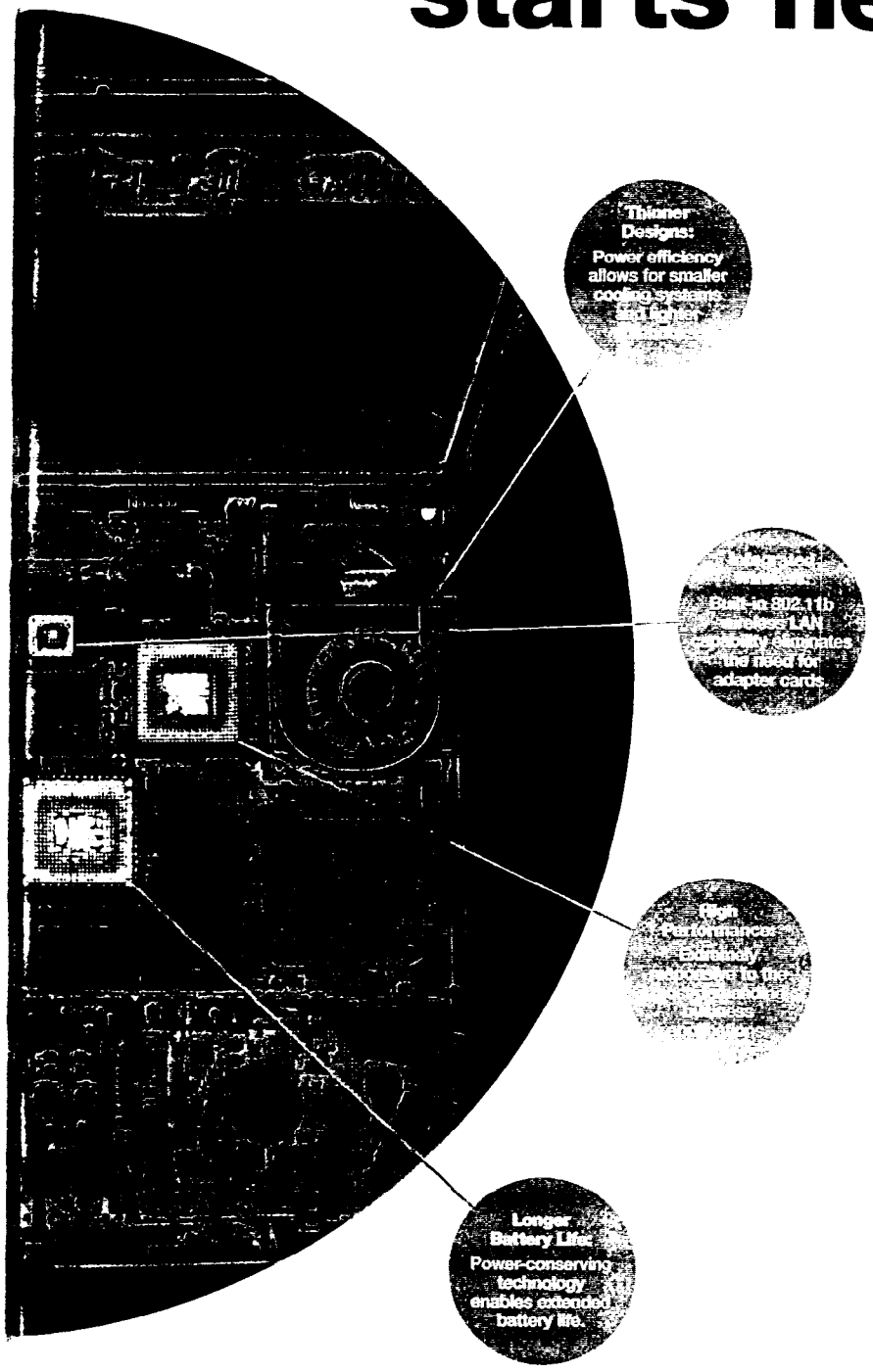

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whether or not your notebook has built-in wireless capability. Even if it doesn't, as long as your system has a PC Card slot, you can buy a wireless card for as low as $50 and slide it right in.

WHAT NOTEBOOK TO BUY

If you don't have a notebook and are considering buying one, the options are plentiful. But if wireless connectivity is at the top of your list, system weight and battery life should be as well; the key is to be mobile, after all.

Though most college campuses use 802.11b technology for their wireless networks, we recommend that you buy a notebook with built-in 802.11g connectivity. These may be a little more expensive than "b" notebooks, but they are backward-compatible with "b" networks, and they won't become outdated if your campus ever decides to upgrade to a "g" network.

Remember that you'll be carrying your notebook from dorm room to library to class auditorium, so make sure you don't pick a 10-pounder that will make your campus walks seem like cross-country treks. Thin is in, and for a good reason.

Maintaining power is as important as maintaining a wireless signal, so make sure the notebook you choose has enough battery life to get you through a solid morning of classes. Three hours is good; 5 hours is better. (For more tips on buying notebooks for school, see "Back to School," August 19, page 90.)

CAMPUS REQUIREMENTS

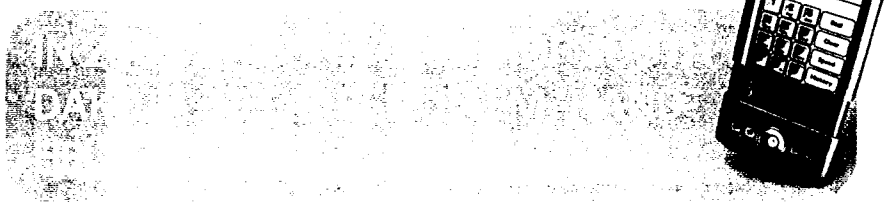
Before you buy anything, check your school's Web site. There you should find guidelines for everything you need to access the school's wireless network: not just which wireless solution (802.11a, "b," or "g") your school is using but also any hardware requirements and a list of operating systems that are supported.

Even in rare Mac-only networks, new Windows notebooks (and PDAs) are likely to be compatible with the WLAN. But older devices—even those successfully running wireless cards—may require OS upgrades to meet network authentication or encryption standards. Security is a big concern for campuses, as it is for any wireless network.

Also, while perusing the campus Web site, you ought to hunt down the wireless troubleshooting FAQ and print it, because according to Murphy's Law, when you *really* need the FAQ, you probably won't be able to access it. Take note of any phone numbers and e-mail addresses you can use to request help with wireless access. Don't expect 'round-the-clock availability or house calls, but the campus IT team should provide basic support.

DON'T BE A BANDWIDTH HOG

Okay, now that you have the right hardware and the recommended software, there's still one more thing you need to do: Read the rules. In general, excessive use of wireless bandwidth reduces performance for all users, so schools may have rules against bandwidth-hogging behavior.



Many policies specify the applications and activities permitted on the wireless network, such as which behaviors constitute abuse and what sanctions apply to those who violate the rules. Before you download that video or shoot your PowerPoint presentation to your professor, you might want to check the rules and choose to plug in instead. Wired Ethernet is fast, found in most dorm rooms, and won't get you into trouble.

Similarly, if your course load involves digital video or 3-D modeling or visualization, you should opt to plug into the campus network in your classroom or lab. And though wireless access in a dorm is appealing, given a choice, you may want to select a room with a wired connection. Of course, that's only if you can't get a room with both.

WHAT'S THE FREQUENCY?

Since the radio-frequency ranges used for wireless networking are unlicensed, they are available for use by other devices—some of which may interfere with network

PHOTOGRAPH BY THOM O'CONNOR

transmission. This is particularly true of 802.11b and 802.11g equipment, which operates in the 2.4-GHz frequency range along with Bluetooth-enabled hardware such as printers, keyboards, cell phones, and headsets—as well as standard cordless phones and microwave ovens. If you have such devices, check whether their use is allowed on campus. If you don't have them, check anyway, in case your neighbors do. If such devices cause interference, you'll want to be sure that the school is prepared to regulate their use.

Campus wireless networks have changed the way students study, receive assignments, take notes in class, and message friends. Chris Walsh can tell you that once you've experienced the liberation of free, unfettered roaming, it's tough to plug back in. If your campus allows you to, get your wireless on and make the most of it.

DEPLOYING WIRELESS ON CAMPUS

Colleges and universities are embracing wireless-networking technology with an enthusiasm that gives new meaning to the term "academic freedom." In fact, says Charles Bartel, director of network services at Carnegie Mellon University, wireless connectivity offers so many benefits for students and faculty alike that its adoption on every campus is only a matter of time.

Bartel has overseen the Carnegie Mellon "Wireless Andrew" network from its 1994 launch (using pre-802.11 technology) through its current incarnation, which covers 4 million square feet of floor and ground space and serves 1,700 users from nearly 700 802.11b access points.

As one of the most seasoned wireless-campus veterans, Bartel often speaks about wireless networking to fellow educational-IT managers. When colleagues admit that installing a wireless network seems daunting, he tells them: "It's going to be deployed on your campus one way or another. It's up to you whether you deploy it yourself or someone else comes in and does it for you, then tells you how you should support it."

Bartel recommends that campus IT teams take control of their wireless destiny. He suggests they start by enrolling anyone who'll be maintaining the network in a wireless-network design class—either in their own school or in a wireless-design certification program offered by a vendor or professional organization.

The obvious advantage is strength in numbers: Multiple designers can mean faster planning and deployment. Perhaps more important, design training speeds the mental shift required to move between the tangible, linear world of wired LANs and the ethereal, 3-D realm of the unwired. When you're troubleshooting a wireless network, it's invaluable to understand design issues such as optimal access point placement and the interaction of signals with one another, with physical objects, and with potential sources of interference.

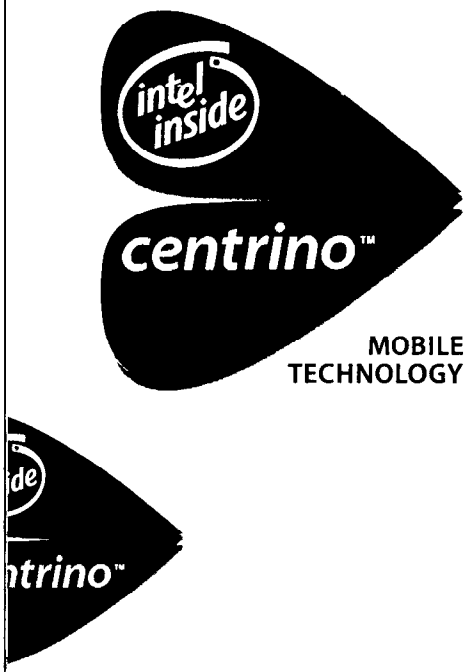
A working knowledge of wireless-network design is all that most campus IT teams need to get started on deployment, Bartel says. But he offers the following gems of practical wisdom, gleaned over a decade of experience.

CHOOSE THE BEST TECHNOLOGY

If you're starting a wireless deployment from scratch today, consider combining 802.11a and 802.11g access points (APs). Support for 12 nonoverlapping channels lets you group 802.11a APs in locations with heavy user concentrations, such as large lecture halls, where their short signal range isn't a hindrance. And with the next generation of 802.11a/g notebooks and PC Cards, this is what we recommend.

Like gear based on the extremely popular 802.11b standard, new 802.11g hardware complements 802.11a equipment, providing lower capacity (just three nonoverlapping channels) but far greater range. On campuses where no wireless network yet exists and an 802.11g-only policy can be adopted, higher throughput speed makes 802.11g the right choice for broad-coverage areas such as outdoor spaces and study lounges.

Where 802.11b networks are already in place, rushing to upgrade could mean paying extra for a speed benefit that won't be felt for years—or courting campus unrest by forcing hardware upgrades on current users. The backward compatibility of 802.11g with 802.11b hardware comes at a cost: When a "g" access point associates with a "b" device, it slows to



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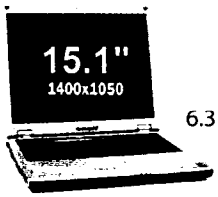

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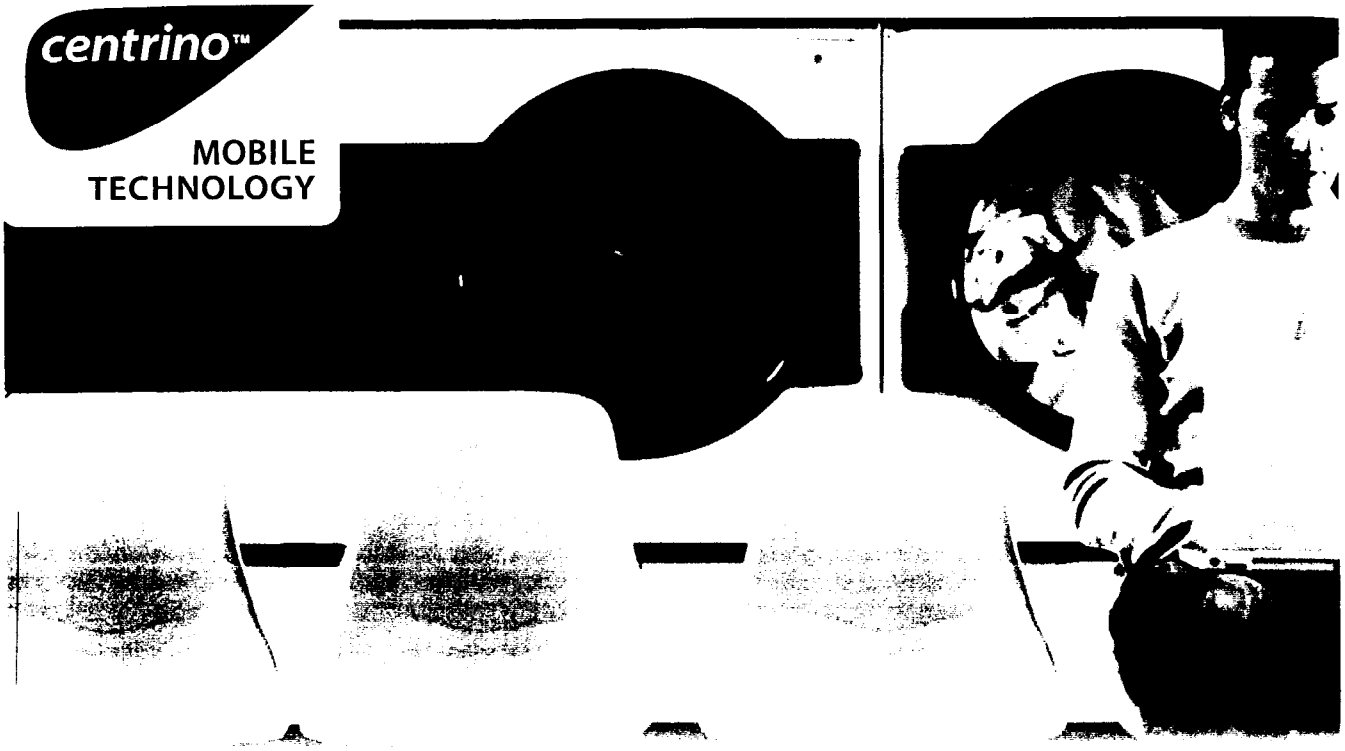

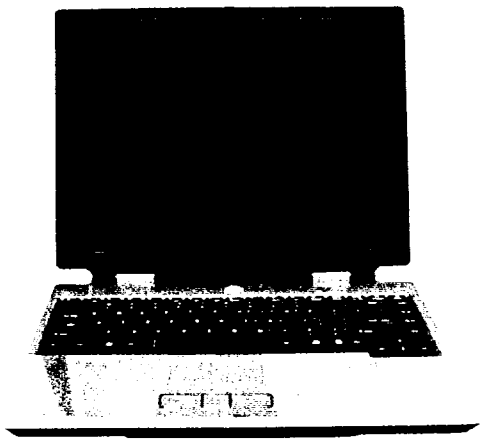

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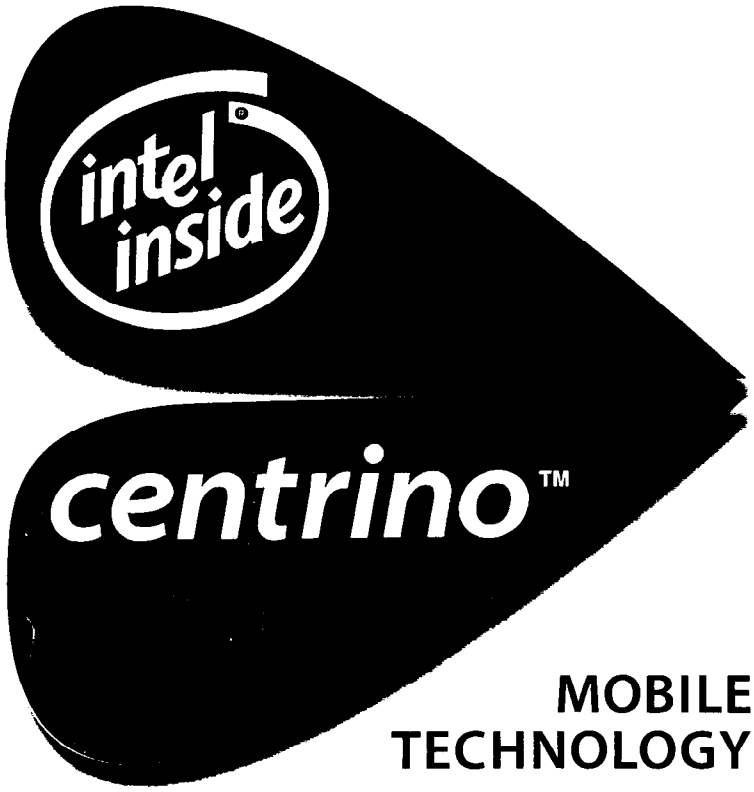

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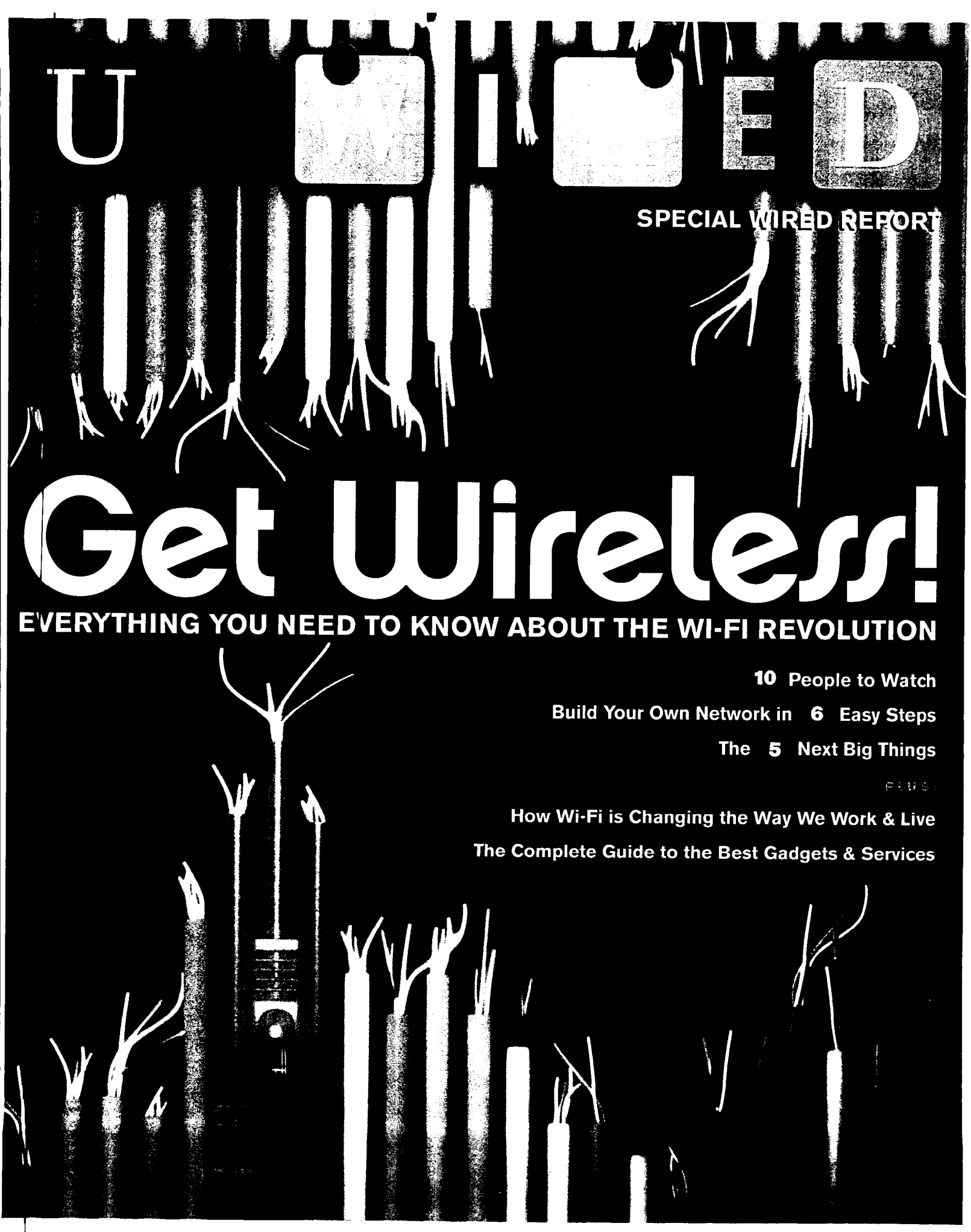

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10 People to Watch

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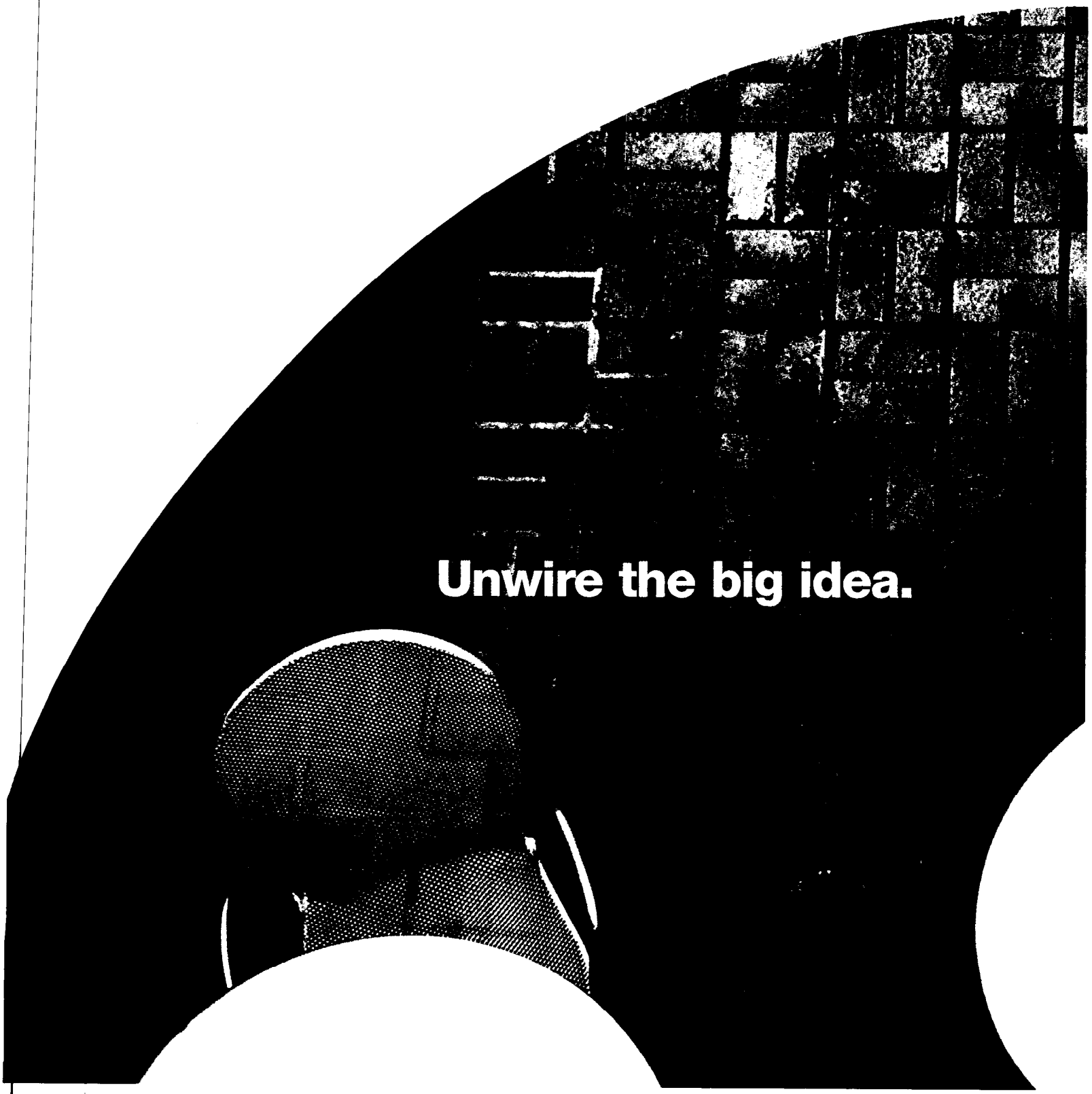

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IBM ThinkPad X31

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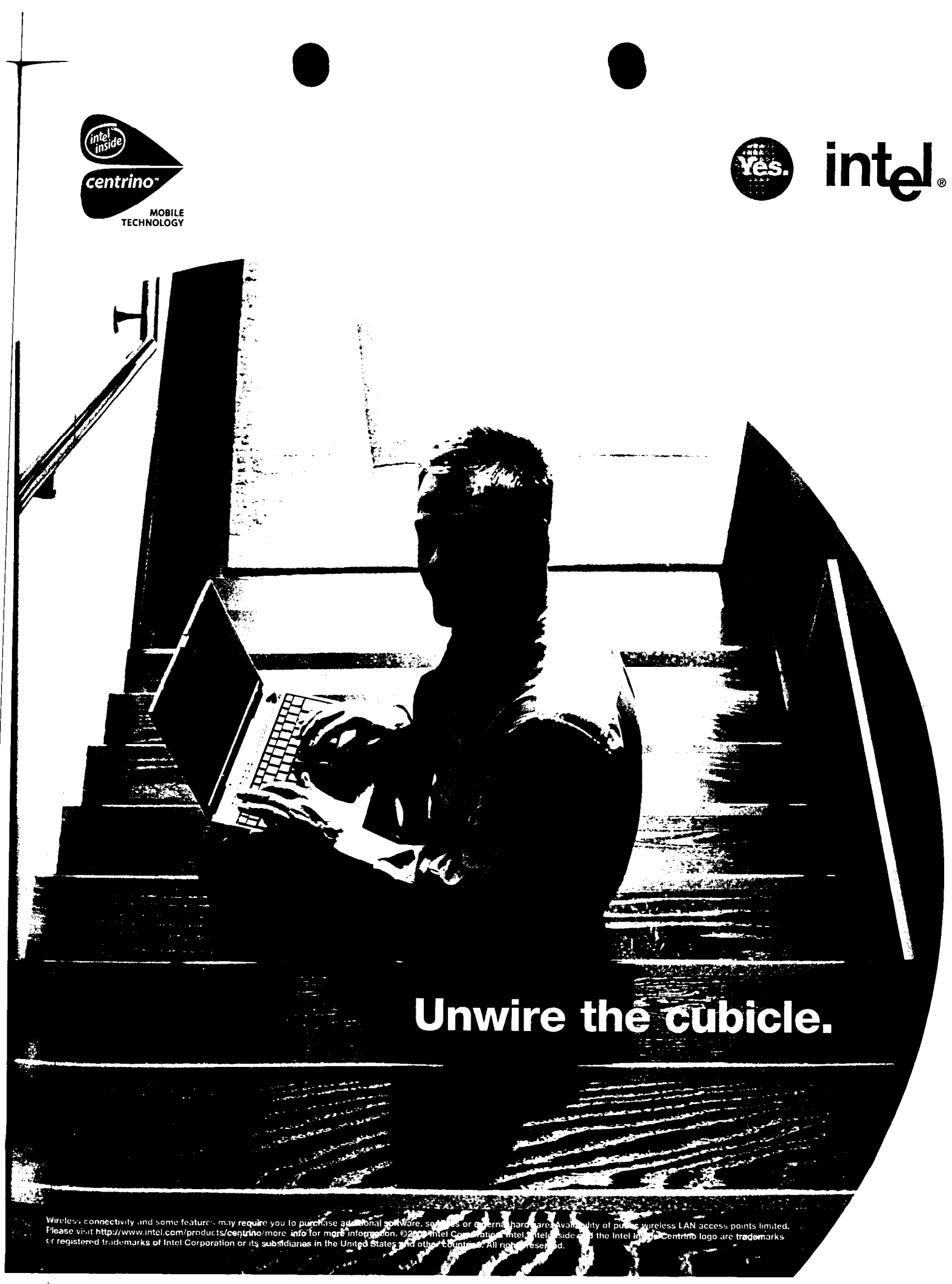
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Intel has an urgent message for the wired world:

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Intel's new cool-running technology requires less space for cooling systems so it can be housed in smaller, lighter notebooks.

MORTEN KETTEL, STYLED BY MICAH BISHOP

Untangle.

Your days of [illegible] Wires, nostalgia. [illegible] It's an [illegible] Frankfurt. [illegible] technology-based [illegible] built right in, so [illegible] This is the [illegible]

Unw

Unburden.

Part of engineering or fact or magic? Intel Centrino mobile technology is designed to pack more computing power into a more portable form. Which [illegible] major computer makers have seized the [illegible] some of the [illegible] Fortunes [illegible] Once you [illegible] your [illegible]

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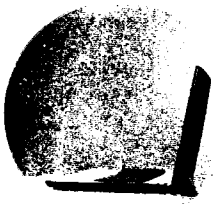

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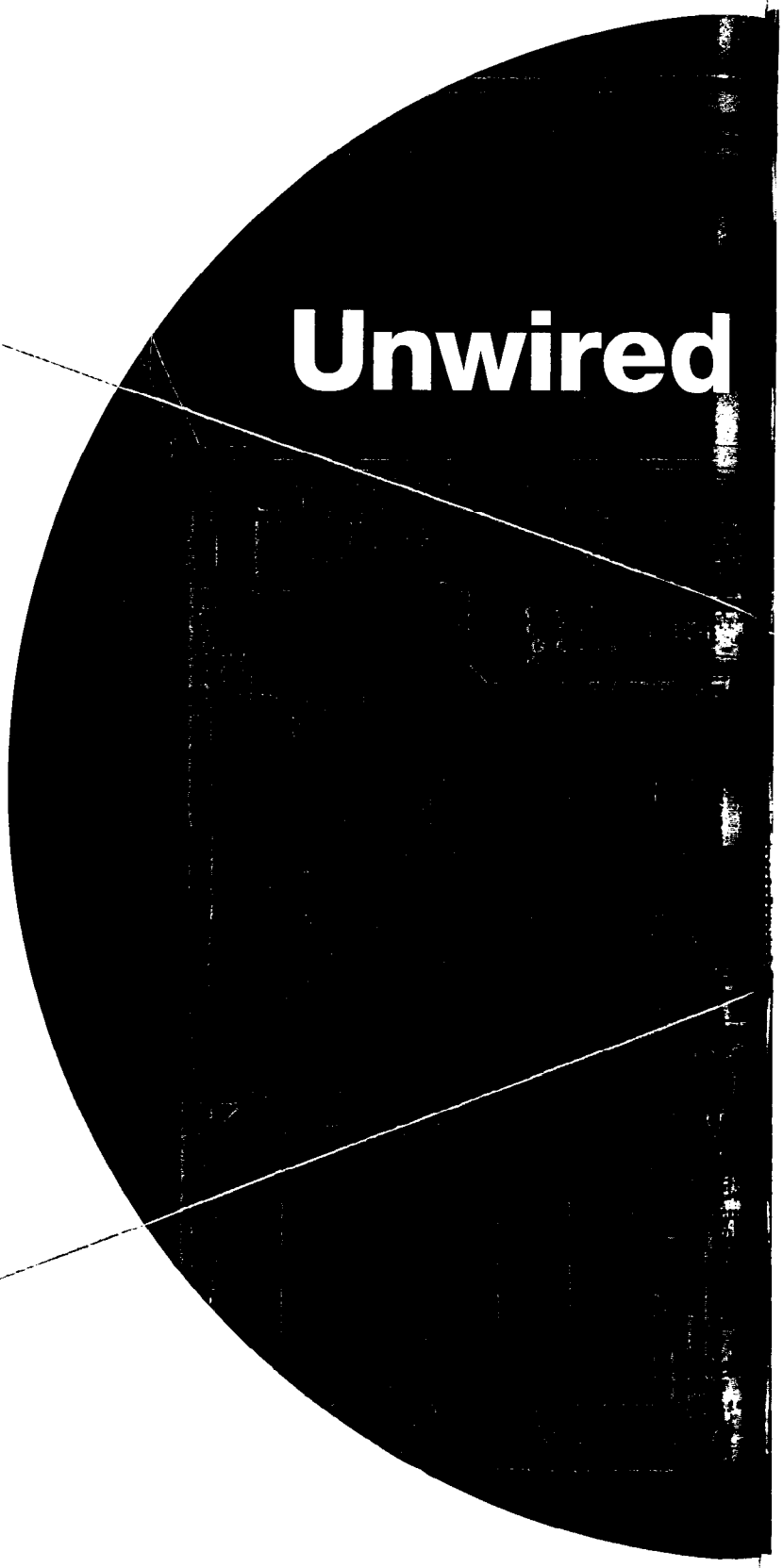

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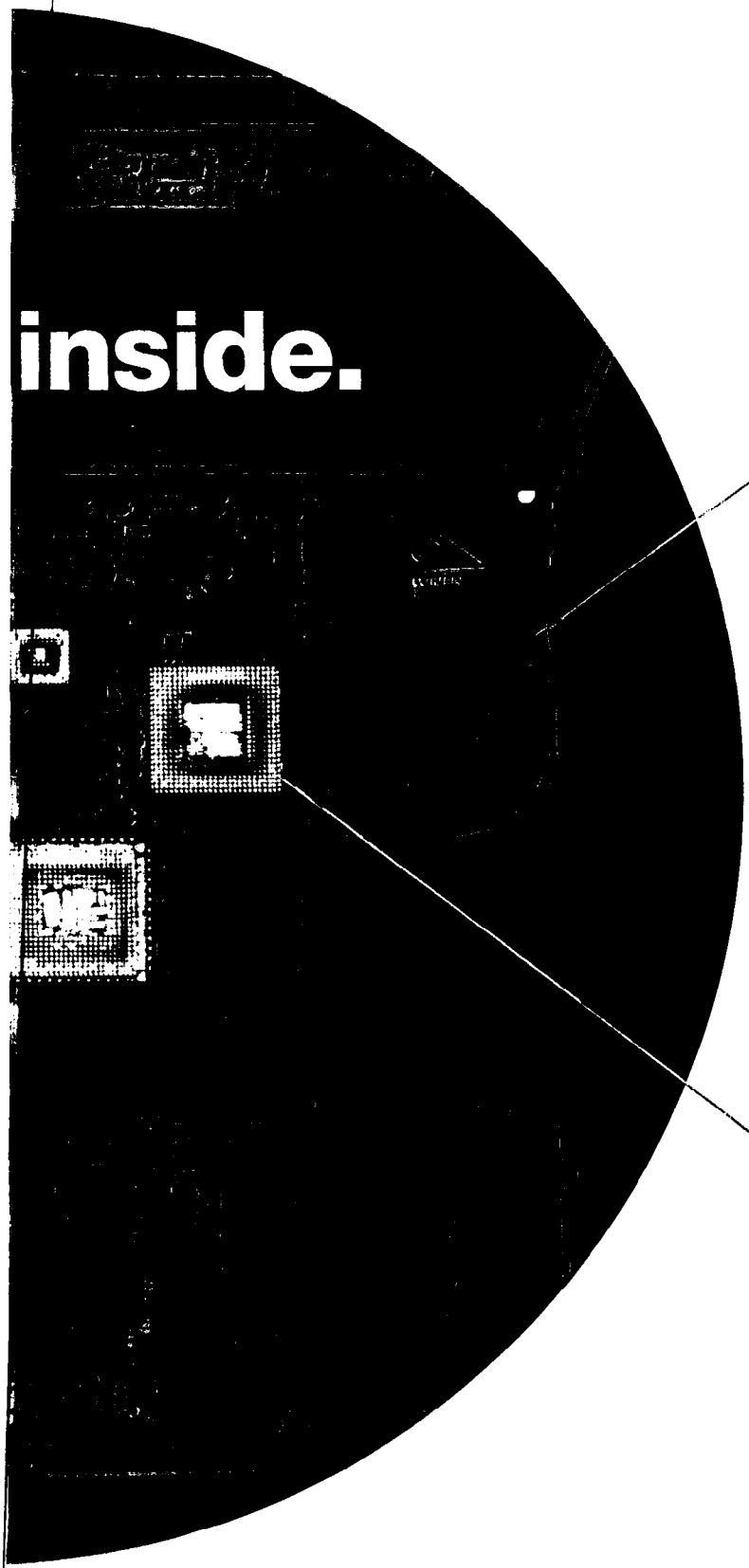

Intel's cool-running technology allows for smaller cooling systems, enabling more compact notebook designs.

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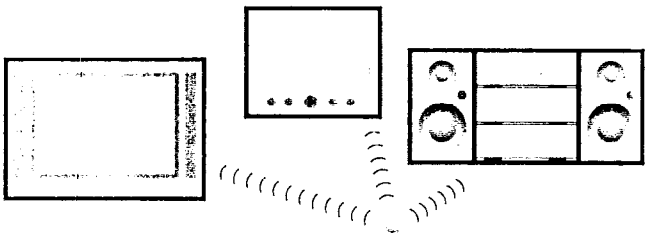
beyond wi-fi

BY XENI JARDIN

The 5 next big things.

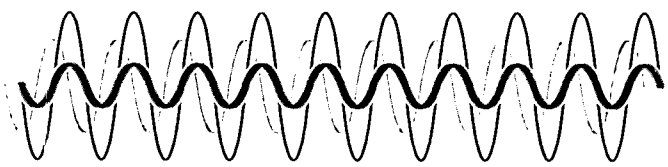


ULTRAWIDEBAND

This superfast, short distance wireless technology promises data speeds 10 times faster than Wi-Fi. It works by transmitting its signal over a wide swath of frequencies, including licensed bands, at such a low power that it doesn't interfere with the other occupants of the spectrum.

That's the idea, anyway. In February 2002, the FCC approved UWB for short-range applications despite howls of protest from the FAA and wireless carriers like Verizon and Sprint. Early tests by NASA, among others, raised questions about potential interference with airplane collision-avoidance systems and existing wireless networks. The FCC ruling allows development to proceed while these questions get addressed.

If it works, UWB could give rise to a new generation of portable and home entertainment products. Digital video, audio, or television streams could be managed with UWB quality equal to a hardwired system, and its high speed and low power consumption make it perfect for home networking. First-generation UWB products are expected in late 2003, but it could be five more years before UWB is widely adopted.

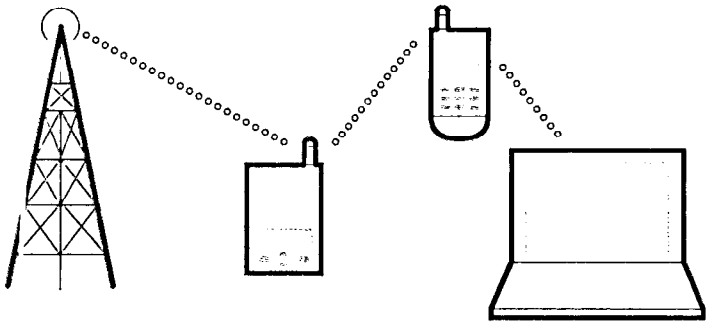


SOFTWARE-DEFINED RADIO

Just as remote controls proliferate in our living rooms, our lives are filling with incompatible wireless devices, from cell phones to baby monitors. Even if they have very different functions, these gadgets share many of the same basic technologies: transmitters and receivers, batteries and antennas. Universal remotes exist; why not universal wireless devices?

That's the inspiration for the growing software-defined radio movement. Rather than determine a wireless device's function with dedicated hardware, gadget makers can keep the electronics to a bare minimum of generic radio chips and control them with software, which can morph endlessly. Think of the difference between a PC and a cash register: Both may be computers, but one is a general-purpose device whose function is defined by software and can be changed at will, while the other is hardwired for a single task.

Software-defined radios can reconfigure themselves automatically to recognize and communicate with each other. This could impose order on the current Babel-like chaos of competing wireless standards (CDMA, GSM, TDMA, and countless others), transforming today's rigid networks into nimble, open systems. The big payoff: improved system performance, cheaper service cost, and seamless roaming. With instant reprogramming, you can carry a single gadget for multiple uses. A cell phone becomes a garage door opener, which morphs into a mobile gaming device, which then – presto! – turns itself into a TV remote. But none of this will happen overnight. The key digital signal processor chip is still under development. Watch for new Intel CPUs to include a type of software-defined radio that will likely be able to adapt to different wireless LAN standards. If all goes well, software-defined radio will make its way into cell phones and other mobile units by 2008.



MESH NETWORKS

One of the most highly anticipated technologies, mesh networking turns nearly any wireless device into a router, creating an ad hoc network. Members of a network no longer rely on a central routing hub to distribute data – instead, the information hops from one user's gadget to another until it gets where it's going. Each connected cell phone, PDA, or laptop pitches in a little routing power, forming a spontaneous, temporary wireless cooperative. The advantages include cheaper service and wider coverage areas. Plus, proponents claim mesh can send data at speeds above 6 Mbps – about 15 times faster than DSL. Using higher bandwidth protocols like UWB, those speeds could reach 500 Mbps. But there are challenges: How will data remain secure as it passes from device to device before reaching its destination? How can participants be billed for connectivity? And dynamic routing can be complex; these systems slow to a crawl if traffic is poorly managed.

WIRELESS PERSONAL AREA NETWORKS

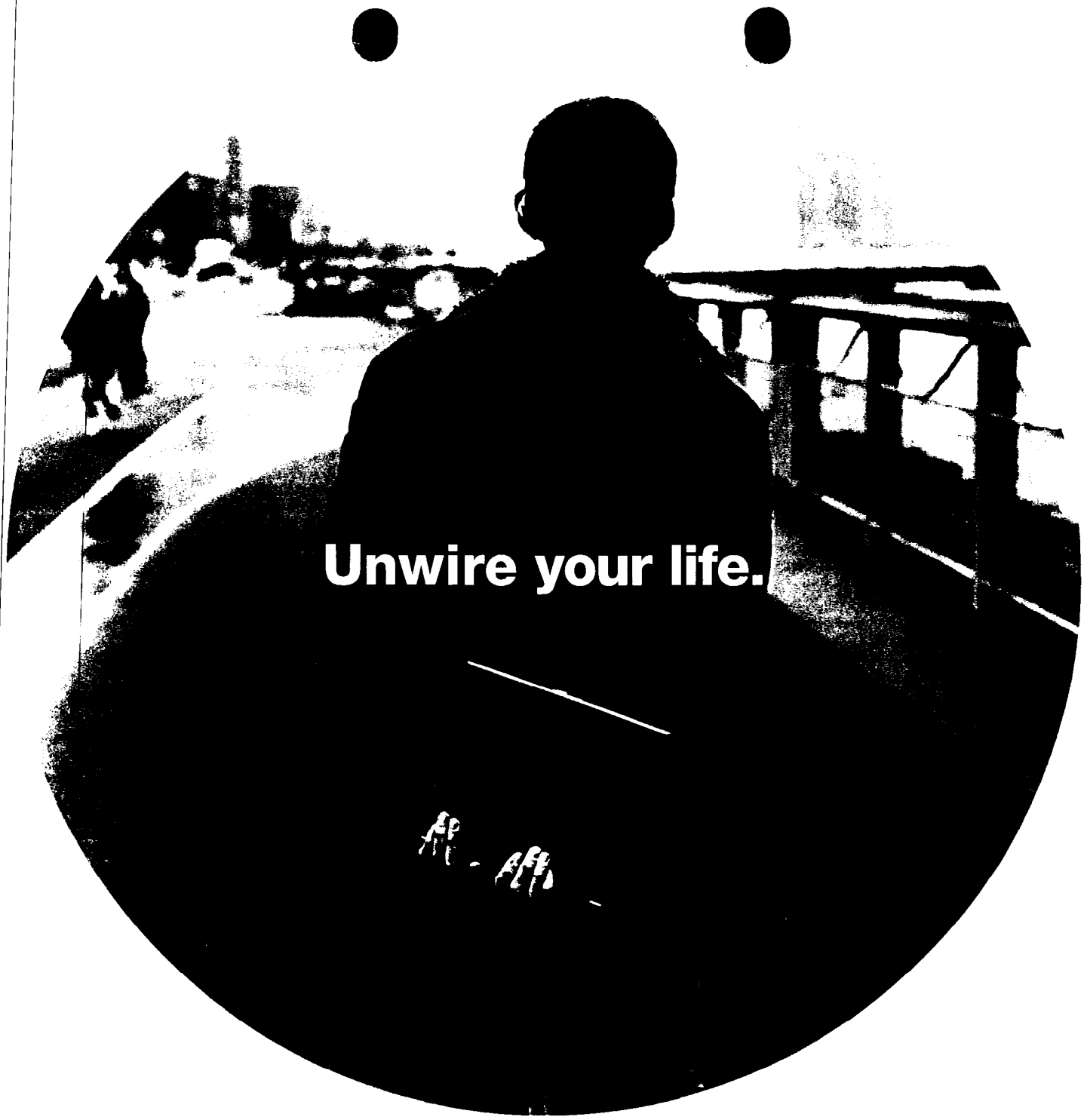
This short-range technology lets everyone have their own little local wireless network. Within a personal bubble of operating space, PCs, PDAs, mobile phones, and digital music players detect one another and interact. Defined by the Institute of Electrical and Electronic Engineers as a zone of at least 10 meters (32.81 feet) around a person, WPANs could forever eliminate snarls of cable and wire that booby-trap homes and offices. In their place: wearable, smart computing devices that converse on the fly, as well as new mobile digital payment systems and personal security technologies.

Devices within a WPAN create a flow of machine-to-machine communication that personalizes services spontaneously. But managing device interoperability, maintaining always-on connectivity between machines, and ensuring that personal information stays safely inside users' bubbles won't be easy. General Atomics, IBM, and Philips are among the tech titans said to be exploring WPANs. Watch for these networks to proliferate within two to five years.

SMART RADIO

It's only polite to listen before speaking so as not to interrupt, but that's something radio is still learning. Adaptive radio is a move in this direction: a technology that lets wireless devices scout out the spectrum wherever they are, avoiding interference by tuning their transmissions to the available gaps. Such devices can modify their power, frequencies, or timing to suit the environment they find themselves in, making such adjustments at occasional intervals or constantly checking and changing as airwave traffic shifts around them. Some also rely on smart antennas that use phased-array technology to aim their transmissions at the receiver, rather than broadcasting in all directions like most antennas.

MARK WASYL



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NBC Olympics Bid Easily Clears Bar

GE Agrees to Pay $2 Billion For Rights to Broadcasts, Soaring Past Competition

By BRIAN STEINBERG And STEFAN FATSIS

General Electric Co. is betting big that the economics of the Olympics stay golden for another decade.

The company, led by its NBC broadcasting unit, agreed to pay $2 billion for the U.S. TV broadcast rights to the 2010 Winter Olympics and the 2012 Summer Olympics. In addition, GE will pay the International Olympic Committee as much as $200 million to become a world-wide Olympics sponsor, providing marketing and technical support for the Games. The deal solidifies NBC's franchise as the Olympics network; with the latest acquisitions, NBC is set to broadcast seven Olympics in a row from 2000 to 2012.

GE's bid outdistanced by several hundred million dollars those of Walt Disney Co. and News Corp. The wide gap partly reflects NBC's need to retain the Olympics as the centerpiece of its sports lineup after in recent years having dropped or being outbid for rights to the National Football League, National Basketball Association and Major League Baseball.

Those sports have rung up combined multibillion-dollar losses for the networks. By contrast, NBC says its broadcasts of the 1996, 2000 and 2002 Olympics all were profitable, and it is projecting a profit from the 2004 Games in Athens, Greece. "The business of big-time American sports has gotten out of hand. That is not true of the Olympics," NBC Sports Chairman Dick Ebersol said after the winning bid was announced Friday. The argument is that the Olympics occur only every two years and have broader appeal than other sporting events.

In an interview, NBC Chairman Bob Wright acknowledged that the price "is certainly very high" but added, "We think that it's recoverable and beneficial to us." Mr. Wright said NBC had sold "well over" $100 million in ad time for the Athens Olympics already.

But the deal isn't without uncertainty. As is customary with the Olympics, NBC acquired the 2010 and 2012 Games without knowing their location. At least one of the Games is expected to be held in North America; Vancouver, British Columbia, is a finalist for 2010 and New York City is a candidate for 2012. But there is no guarantee the Olympics will be held in a time zone conducive to telecast in the U.S. without onerous tape delays.

Additionally, NBC is counting on the viability of the Olympics as a network-programming entity to hold up during the next decade. In a statement, David Hill, chairman of News Corp.'s Fox Sports unit, said his network's bid, about $1.3 billion, "reflected a conservative view" of the Olympics' media future. He said that was based on current network economics, the difficulty of predicting the economy down the road and the "theoretical" nature of potential new revenue streams included in the deal, such as video on demand and Internet Webcasts.

Disney's ABC Sports unit said it had an attractive offer, and "would have loved to have had it on the terms that we proposed." ABC's offer was predicated on a revenue-sharing arrangement that would have served as a hedge against the uncertainty of events so far in the future. CBS parent Viacom Inc. had pulled out of the bidding earlier.

Under the terms of GE's deal, NBC will pay $2 billion for U.S. broadcast rights—$820 million for the 2010 Winter Games and $1.18 billion for the 2012 Summer Games. Those figures compare with $614 million for the 2006 Winter Olympics in Turin, Italy, and $894 million for the 2008 Summer Olympics in Beijing.

Five Golden Rings

A breakdown of NBC's winning bid of about $2.2 billion for 2010 and 2012 Olympic broadcast rights:

- **$2 billion for U.S. broadcast rights:** $820 million for the 2010 Winter Games and $1.18 billion for the 2012 Summer Games
- **General Electric sponsorship:** $160 million to $200 million
- **Rights for the U.S. Olympic trials:** $12 million
- **Development of a digital TV library and archiving system:** About $10 million
- **Promoting the Olympic brand leading up to and surrounding the games:** A "further multi-hundred-million-dollar commitment"

Source: International Olympic Committee

WPP Enters Talks To Buy Cordiant And Acquire Debt

By ERIN WHITE And BRIAN STEINBERG

WPP Group PLC has entered into exclusive talks with Cordiant Communications Group PLC, the beleaguered British advertising firm, and could strike a deal to acquire it as early as this week, according to a person familiar with the matter.

Under the scenario being discussed, WPP is proposing that it offer a nominal sum to Cordiant equity shareholders, who have seen the value of their holdings fall in recent months, and acquire Cordiant's £250 million ($415.6 million) in debt from lenders at a discount.

If the shareholders refuse the amount offered by WPP, which couldn't be determined, Cordiant likely would go into administration or receivership, the British equivalent of a bankruptcy-court filing. If that occurs, WPP likely would purchase Cordiant out of administration or receivership, this person said. In Friday trading on the London Stock Exchange, Cordiant shares were unchanged at seven pence. WPP's interest in Cordiant was reported in the Observer of London.

Cordiant—parent of the Bates ad agency, health-care marketing consultancy Healthworld and marketing-services firm 141—has suffered during the past year as acquisitions made at the height of the stock-market boom backfired and lackluster creative work from Bates has prompted client departures. Its most stinging blow came in late April when Allied Domecq PLC, the marketer of Beefeater gin and Courvoisier cognac, decided to pull its business due to concern about Cordiant's viability. Allied Domecq had been one of Cordiant's biggest clients. Cordiant's remaining large clients include Pfizer Inc. and British American Tobacco PLC.

Since then, Cordiant has been been effectively up for sale as suitors have tried to determine whether they should try to buy a business whose prime asset is people or let it fade into oblivion. Cordiant had been talking with France's Publicis Groupe SA, according to people familiar with the matter, but the Publicis plan would have made Cordiant's entering into administration or receivership more definite. Publicis, owner of Saatchi & Saatchi, and Cordiant together own ZenithOptimedia, the media-buying firm; Publicis is the majority owner. Grey Global Group Inc., New York, was talking with Cordiant about parts of its Bates agency, according to a person familiar with the matter.

Spokeswomen for Grey and Publicis declined to comment, as did a spokesman for Cordiant. A spokesman for WPP said, "We are continuing our due diligence and formulating our proposals for Cordiant."

Sun Boots Up Its 'Java-Powered' Ad Campaign

Continued From Page B1

software-development technology called .NET that emerged around 2000. "We rarely run into a customer that is an all-Java shop—they are almost always a mixed environment," says George Paolini, vice president for Java solutions at Borland Software Corp., which sells tools for developing programs using both Java and .NET.

Sun's war chest is limited. The company has had declining revenues and several money-losing quarters since the Internet bust dried up demand for its servers.

Sun isn't disclosing exactly how much it will spend on marketing, but says it will allocate 50% of its advertising budget to Java for the fiscal year beginning in July. Mr. Schwartz vows to marshal Java backers to collectively spend $500 million on marketing the technology, but isn't identifying contributors or their commitments yet.

Java enjoys brand identification already. The company surveyed consumers in a number of countries and found 85% were aware of Java, though only 20% understood what it was, Ms. Van Den Hoogen says.

To help broaden that recognition, Sun is drawing up plans for print and billboard ads that will begin appearing in late September, featuring products that are "Java powered." It will promote an overhauled consumer Web site, Java.com, that will catalog Java-based game software and other products. It is also updating the Java logo—a cup of coffee with steam-rising from it—to add a sleeker look that will go with a program to encourage companies to indicate products are powered by Java.

Companies expected to talk about their own Java-based products or initiatives at the JavaOne show in San Francisco include Intel Corp., Oracle Corp., Motorola Inc. and SAP AG. Palm Inc., the hand-held computer maker, is announcing plans to begin selling its Tungsten models with Java software supplied by IBM, which will enable Java programmers to develop software for Palm hardware, says Jonathan Oakes, Palm's senior director of software strategy.

The direct payoff for jumping on the Java bandwagon is a matter of some debate. Electronic Arts Inc., the big entertainment software maker for example, has a popular online-game site that is based on Java, but has shied away from games for cellphones because of the small revenue potential and difficulty of producing sophisticated software for the devices. "Our position is that wireless gaming is going to be very very big—but we'll all be flying jetpacks to work when that happens," says Jeff Brown, EA's vice president for corporate communications.

But Sun executives say cellular-service providers, at least, appear to be making substantial revenues from downloaded Java games. Many mobile-phone customers of Japan's NTT DoCoMo Inc. and Britain's Vodafone Group PLC play Java games, which tend to be relatively simple programs in the tradition of Tetris or PacMan. Motorola and Nextel Communications Inc. have a Java-based service that sends daily messages to fans of Ms. Aguilera.

As for what financial incentives might be offered for companies to add Java branding, Sun isn't saying. "Everything is being considered," Ms. Van Den Hoogen says.

Cisco Keeps Low Profile on Ownership of Linksys

Continued From Page B1

more different. The most sophisticated Cisco gear costs more than $100,000. Linksys products start at less than $100. Cisco's gross profit margin is roughly 70% of revenue. As a private company Linksys didn't report results, but rivals report gross margins of roughly 25%. In the nine months ended April 26, Cisco's operating expenses topped 40% of revenue; Linksys's are closer to 15% of revenue, Mr. Giancarlo says.

So Cisco executives are weighing every step to bring Linksys into the fold, including how much, if any, of Cisco's technology to cram into Linksys's gear.

John Rydquist, a technology manager at a law firm, would say that's a smart idea. Last week,he bought a $149 Linksys wireless hookup for his home at a Palo Alto, Calif., electronics store. "I wouldn't mind Cisco putting some of its technology" in Linksys products, he says. But would he still buy Linksys if Cisco raised prices? "I'd probably buy Netgear," he replies.

Indeed, prices for home-networking gear are so competitive that some Linksys rivals are hoping the Cisco acquisition actually helps them, by relieving the constant pressure for consumer rebates and retailer incentives. "If the Cisco management team started having some control or influence, the Linksys pricing structure would go higher," says Morikazu Sano, vice president of the Buffalo Technology USA unit of Japan's Melco Inc. He counts 22 rivals making home-networking gear in the U.S. Several already offer a new, faster version of popular Wi-Fi wireless gear for less than $100.

In an interview, Mr. Giancarlo gave Mr. Sano some reason to hope his theory will be correct. "We'll be aggressive on the pricing front," he said. "But we're probably not going to follow every gyration in the market."

Some rivals think they see Cisco's influence on Linksys already. Steven Joe, president of the North American unit of Taiwan's D-Link Corp., the No. 3 maker of home-networking gear, notes that Linksys recently introduced a Wi-Fi "bridge" to connect two computers for $179, higher than he would have expected. Mr. Joe says his company will start selling a competing product next month for $99.

Mr. Giancarlo says Cisco considers $179 "the right price for a product that's the first of its kind." He says Cisco expects to lower the price as competing products arrive.

Cisco also will have to resolve conflicts between its two brands. Although Linksys products are aimed primarily at consumers and home offices, they have gained a growing following among small businesses such as McCue Systems, a 35-person software company.

Garry Philips and Scot Larsen, McCue's two-person tech department, bought two Linksys products last week to set up a wireless network for $180. Similar Cisco-branded gear likely would have cost more than $500. "I didn't even look," Mr. Philips says. "That's out of our range."

Analysts say acquiring Linksys will help Cisco defend itself against Linksys-like competitors. "They know these products completely undersell their own, so why not get a piece of the pie," says Joel Conover, an analyst for Current Analysis, a Sterling, Va., research and consulting firm.

Linksys has been developing more sophisticated products in recent years to push further into the small-business market. But Mr. Giancarlo says Cisco may slow or reverse those efforts, to keep Linksys focused on the consumer and very-small business market.

Alan Marc Smith, chief executive of Westcon Group, Tarrytown, N.Y., a big Cisco distributor, summarizes the strategy more pithily: "They want to limit the [Linksys] offerings," he says. "They don't want [customers] flipping to the Linksys technology for half the price."

At the Box Office

Figures are through yesterday.

FILM	DISTRIBUTOR	WEEKEND/ CUMULATIVE (MILLIONS)
2 Fast 2 Furious	Universal	$52.10 / $52.10
Finding Nemo	Disney/ Pixar	46.[illegible] / 143.30
Bruce Almighty	Universal	21.70 / 170.80
The Italian Job	Paramount	13.30 / 40.14
The Matrix Reloaded	Warner Bros.	9.11 / 247.70
Daddy Day Care	Sony	4.90 / 86.65
X2: X-Men United	Fox	3.66 / 204.31
Wrong Turn	Fox	2.66 / 9.74
The In-Laws	Warner Bros.	2.01 / 17.92
Bend It Like Beckham	Fox Searchlight	0.99 / 20.58

NOTE: Figures include Sunday, June 8, and are estimated.

Source: Exhibitor Relations Co.

New Soul Food's Ambience Is Upscale, but Dishes Are Like Mom's

Continued From Page B1

peaches oozing out of the cobbler, neat peach slices may be tidily arranged with a border of sprinkled cinnamon.

At both the diners and the fancier establishments, portions tend to be huge. Prices can run as high as $37 for an entrée at a white-linen spot, compared with $8 to $12 at the traditional mom-and-pops.

Some upscale restaurants say they cook soul food in a more healthy manner, using low-cholesterol oil when frying, for instance, or smoked turkey instead of artery-clogging fatback in collard greens. Some restaurants give traditional dishes an upscale twist, such as the $17.95 Southern-style fried seafood gumbo with catfish, crab cakes and shrimp, an entrée served up at Alexandria on Main, a soul food restaurant in trendy downtown Cleveland. "Soul food is soul food, except the way we serve it here," said Jim Buchanan, the restaurant's owner.

Some upscale joints go even further to distance themselves from mom-and-pops, calling themselves "new soul," "Southern-style cooking" or "soulful cuisine." "Some people consider soul food a derogatory term, while others see it as a term of endearment," says Patrick Coleman, owner of Beans & Cornbread: A Soulful Bistro, an upscale soul-food restaurant outside Detroit.

Yet many traditionalists swear by the old fatty formulas. For instance, some soul-food cooks use bacon drippings to keep cornbread from sticking to the pan. Others fry chicken with lard and throw in some pork when boiling nutritious green beans and collard greens. For these people, making soul food fancy just turns their stomachs.

"It's a traditional, fatty comfort food," said Tracey Gates, owner of the Busy Bee Cafe, an Atlanta diner where customers can get everything from barbecued pork ribs to boiled oxtails. "You leave the league of soul food when you try to make it upscale."

Edward Miles, a policeman and four-times-a-week Busy Bee customer, says he prefers down-home places to the newer, trendier eateries. "The upscale places use a lot of canned goods, and they just try to spruce them up," Mr. Miles says. "Those are places you go for the ambiance and to have a drink."

Sylvia's Restaurant, the famous, 40-year-old establishment in New York's Harlem section, has added lighter fare to its menu, including barbecue salmon, baked catfish and grilled chicken breasts, to help it compete with more upscale soul-food cafés. The restaurant also renovated recently, adding a banquet room, and in recent years has opened franchise locations in Atlanta and at New York's Kennedy International Airport.

But Sylvia's will never go completely upscale, says spokeswoman Tren'ness Woods. "We don't want people to feel like, 'We're not dressed up so we can't go to Sylvia's.' "

But Will Raging Cow Also Do a Body Good?

Continued From Page B1

plan to sell them chilled, because U.S. taste buds are used to cold milk.

Dairy processors, concerned that soft-drink makers could lure away customers, are trying to jazz up their own products. Sales of 100% milk drinks made by dairies in varieties from Pleasin' Punch to Root Beer Float—which are still sugary, but not watered down like the soft-drink makers' dairy drinks—rose 6.3% in the first three months of this year compared with a year ago, while plain-milk sales rose only 0.5%, according to the International Dairy Foods Association in Washington.

Dairy processors hope their claims to more nutritious beverages will help them keep their ground. The new drinks "are not milk substitutes," says Susan Ruland, a spokeswoman for the dairy group.

Still, one large milk producer, Dean Foods Co. of Dallas, is expanding production of its own dairy drink, a combination of coffee and low-fat milk called Folger's Jacada, made under a licensing agreement with Procter & Gamble Co. "When the likes of Cadbury and Coke are looking at your category, you better take that seriously," says Gregg Engles, Dean Foods' chairman and chief executive.

Cadbury started developing a new milk brand aimed at teens almost two years ago, as the new plastic-packaging technology promised to bring down some of the cost. To try to make milk as cool as soda, the company's marketers dreamed up a belligerent bovine mascot dubbed Mad Cow—but later renamed Raging Cow to avoid comparisons with the livestock illness. Marketers spread the word through Internet "blogs," which are online diaries often written by trendsetting teens.

Mark Grossman, an 18-year-old in an Atlanta suburb, says he's "not a big milk drinker." He prefers Coke, iced tea and water. But he drinks chocolate milk sometimes, and says he would try a new dairy drink "if it was flavored."

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EXHIBIT N

Daimler Shakes Up U.S. Management

Auto Maker Dispatches Former CEO for the U.K. To Improve Brands' Images

By Sholnn Freeman

DETROIT — **DaimlerChrysler** AG shook up management at its Chrysler Group unit, giving rising German executive Joe Eberhardt one of the company's toughest assignments: improving the sales and image of its Chrysler brands at a time of soft sales and brutal price competition in the U.S. market.

The company dispatched Mr. Eberhardt, previously chief executive of DaimlerChrysler's United Kingdom operations, to the U.S. to take over as executive vice president of global sales, marketing and service. He succeeds James Schroer, 51 years old, who left the auto maker effective May 31 to pursue other interests, the company said. Mr. Schroer had jumped to Chrysler in February 2001 from **Ford Motor** Co. His departure comes as Chrysler has signaled it may not hit its profit goals for the year in part because the grinding price war in the U.S. mass market is undermining efforts to rein in costly discount deals.

"There are other areas of the business world that also interest me, and I want the time and freedom to pursue them," Mr. Schroer said in a statement.

Mr. Eberhardt, 39, spent more than 10 years in the U.S. sales and marketing operations at DaimlerChrysler's Mercedes-Benz division, during a time when Mercedes's sales in the U.S. more than tripled. He took over the company's U.K. operations in 1999. But Mr. Eberhardt returns to an increasingly ruthless U.S. market that is testing executives across the industry.

Chrysler's Rocky Road

Year-over-year declines in the company's U.S. auto sales and the overall light-vehicle market

Source: Autodata

Major auto makers will report May auto sales tomorrow. Analysts expect sales to fall at Detroit's Big Three—General Motors Corp., Ford and Chrysler. With inventories at record levels, some analysts are predicting that auto makers might cut production.

At Chrysler, officials are already intensifying their campaign to cut costs. Last month, the company said an operating-profit target of $2 billion for 2003 might be difficult to reach. Chrysler also recently dropped plans to build a new, small Dodge pickup in Canada, citing market conditions.

It isn't yet clear how Mr. Eberhardt might affect the course Mr. Schroer set out in Chrysler's sales and marketing operation. Wooed to Chrysler by its chief executive, Dieter Zetsche, Mr. Schroer had led efforts to refashion the Dodge, Chrysler and Jeep brands with daring advertising that was supposed to improve their images and lessen the need for costly incentives.

But the bold marketing hasn't paid off yet. Chrysler is scheduled to announce today a $100 million summer advertising blitz. Dealers say the campaign will promote consumer incentives. Additionally, Chrysler added the first incentives on the new Pacifica sport-utility vehicle last week, an action that marketing officials had said they would be reluctant to take early on.

Marriott, Partner Enter the Bidding For Aladdin Hotel

By Christina Binkley

Marriott International Inc. is entering the bidding for the Aladdin hotel and casino in Las Vegas.

Under the terms being discussed, Marriott would manage the closely held hotel for 20 years as a Renaissance hotel, according to documents reviewed by The Wall Street Journal. The hotel company would invest $25 million in the hotel/casino as a partner with a Los Angeles investment group called Financial Capital Investment Co., according to Richard Alter, Financial Capital's managing director. Marriott would also enter into a 50/50 joint venture to develop an adjacent property with time shares.

A Marriott spokesman declined to comment, saying he wasn't aware of the discussions.

The Aladdin is in bankruptcy proceedings in Las Vegas. Marriott's main rival, **Starwood Hotels & Resorts Worldwide** Inc., has linked up with restaurateur Robert Earl and New York vulture fund **Bay Harbour Management** LC as the so-called stalking-horse bidder for the Aladdin, with a deal that would cost less than half the $1.4 billion originally invested in the property. That group has agreed to spend $90 million to renovate the place over three years and to assume $510 million in refinanced debt from the original lenders, turning the Arabian-themed place into a Planet Hollywood casino and a Sheraton hotel with Westin time shares built nearby. Starwood agreed to invest $20 million in the venture. Mr. Earl is the founder of **Planet Hollywood International** Inc., which recently emerged from bankruptcy-court protection.

The Marriott-Financial Capital plan would turn the Aladdin casino into "Asia," a Far East-themed casino aimed at middle-market American gamblers, while the hotel would operate as a Renaissance. Marriott "would have nothing to do with the casino," Mr. Alter said. Plans include jugglers, animals, a fantasy garden and fiber-optic features.

Halliburton Nears Settling Lawsuits

By Susan Warren

Halliburton Co. said it is close to settling shareholder lawsuits that accuse the oil-services company of inflating revenue for major construction projects, although the company continues to use the same accounting method and hasn't resolved a separate investigation by the Securities and Exchange Commission.

If the settlement is completed, Halliburton said it would pay $6 million to settle any liability related to claims from shareholders who bought its stock between May 1998 and May 2002. The company isn't admitting any wrongdoing, and Wendy Hall, company spokeswoman, said Halliburton is settling only because it wants "to resolve this in a timely and cost-effective manner."

The claims arise from Halliburton's practice of booking cost overruns on construction projects as revenue before the client had agreed to pay them. If the client refuses to pay, that revenue might never materialize, and then must be recorded as an expense.

Houston-based Halliburton said it booked about $434 million of such revenue from 1998 through 2001, after it adopted this accounting treatment for large, long-term projects. Vice President Dick Cheney was chairman and chief executive of Halliburton from 1995 to 2000.

Halliburton began disclosing the accounting practice in 1999, and the SEC is continuing an investigation into the matter. "We continue to work with the SEC," Ms. Hall said.

Halliburton continues to book some revenue for "pending and anticipated claims," Ms. Hall said. Under generally accepted accounting principles, "you are allowed to accrue for unapproved claims that are probable for collection," she said.

The agreement would cover about 21 shareholder suits that were consolidated in a Dallas federal court under a proposed class action. Halliburton said court approval of the settlement is required.

Settling these lawsuits would further reduce the morass of asbestos and other litigation that has been a drag on Halliburton's stock for the past couple of years. In December, the company agreed with plaintiffs to pay $4 billion, and to put some of its subsidiaries into bankruptcy, to resolve more than 300,000 asbestos-related lawsuits.

TECHNOLOGY & HEALTH

Icahn's XO Shows Interest in Global Crossing Late in the Game

By Dennis K. Berman And Kara Scannell

NEW YORK—XO **Communications** Inc. and its chairman Carl Icahn launched a bid valued at approximately $700 million for fiber-optic carrier **Global Crossing** Ltd., hoping to unseat an existing offer by Singapore Technologies Telemedia Pte. Ltd.

Any bid would have to be approved by the U.S. Bankruptcy Court, where Global Crossing has been reorganizing its operations since filing for Chapter 11 bankruptcy protection during January 2002. It remained unclear Friday what kind of audience Mr. Icahn's bid would receive because ST Telemedia has signed an exclusive agreement to purchase control of Global Crossing, which effectively bars other suitors from stepping in.

XO Communications, Reston, Va., said its bid of cash, debt, preferred stock and stock warrants offers Global Crossing creditors $100 million more than Singapore Technologies' existing offer, which values Global Crossing at approximately $600 million.

Global Crossing and ST Telemedia officials declined to comment.

ST Telemedia, a large Singapore-government owned telecommunications operator that serves the Asian-Pacific region, originally made its offer for Global Crossing during August 2002 with Hong Kong conglomerate **Hutchison Whampoa** Ltd. Hutchison pulled out of the deal during April after the Committee on Foreign Investment in the U.S., the body that reviews such deals, scuttled its involvement.

The late-stage offer is typical of Mr. Icahn, a corporate cage rattler known to make aggressive offers and take large stakes in companies in various industries. Mr. Icahn wrestled control of XO from its longtime investor Theodore J. Forstmann last fall after a nearly six-month battle. At the time, Mr. Icahn said he wanted to use XO, which emerged from bankruptcy protection during January, as a platform to build a substantial telecommunications company. The bid for Global Crossing is his first public attempt to do so.

In an interview, Mr. Icahn said a window of opportunity for his proposal was created because new elements of the Singapore deal have to be approved by a bankruptcy judge. He added he wants to merge Global Crossing's 100,000-mile domestic and international network with XO Communications' local network.

"Global Crossing has some good accounts and we believe that we could do more with them once we're involved," he said. Mr. Icahn said XO could provide part or all of the last mile of phone service to Global Crossing's clients, and in return could offer Global Crossing's long-distance service to XO's local customers.

One way Mr. Icahn's plan could gain momentum is if U.S. regulators and defense officials end up denying ST Telemedia's takeover plans on national-security grounds. Already, the Council on Foreign Investment in the U.S. is expected to meet this week to discuss the Global Crossing matter, according to one person with knowledge of the situation. Still, ST Telemedia is regarded as having a better chance of receiving U.S. approval than it did its previous joint bid with Hutchison.

Several financiers have been investing in bankrupt telecommunications assets hoping to capitalize on them when the market turns. Turnaround specialist Wilbur Ross paid $30 million in October for a 12.5% stake in **360networks** Inc. In February, he helped 360networks acquire GT Group Telecom and later announced plans to buy the U.S. telecommunications network from Dynegy Inc.

Other private-equity and telecom firms are also circling Global Crossing, according to a person familiar with the situation. They include Pivotal Private Equity, Phoenix, which recently agreed to acquire the assets of Pacific Crossing Ltd., which operates a fiber-optic cable between Japan and the U.S. formerly operated by Global Crossing. Long-distance carrier IDT Corp. has also said it is willing to buy Global Crossing to keep the company in U.S. hands.

Health Officials Fighting SARS Are Encouraged by Fewer Cases

By Elena Cherney in Toronto and Leslie Chang in Beijing

Health officials battling Toronto's second round of SARS infections said they were encouraged by a declining number of new cases during the weekend, even as they closed most of a second suburban hospital to investigate another possible cluster.

In Asia, meanwhile, the contagious respiratory disease continues to abate, although seven more people died in Hong Kong. Singapore was declared SARS-free and praised by world health officials for its containment efforts.

A health official in China said SARS is being "effectively controlled" as its nationwide number of new reported cases of severe acute respiratory syndrome remained in the single digits for the seventh day running. The Ministry of Health reported China had just two new cases and no fatalities. In total, that country has reported 5,328 SARS cases, including 332 deaths and 3,431 recoveries.

The steady decline in numbers was cited by Deputy Minister of Health Gao Qiang at a news conference Friday as evidence the SARS outbreak was approaching an end.

Mr. Gao said the disease hadn't spread to the countryside in large numbers as was initially feared, and he denied the government earlier had concealed the scale of the outbreak. Instead, he said, officials in the southern province of Guangdong as early as February alerted the world to the illness that eventually was named SARS—an account that differs from the view of most outside observers, including the World Health Organization, that Chinese officials had played down the impact of SARS for months.

A Beijing official said Saturday that the city would cut the number of hospitals designated to treat SARS patients to seven from 16, citing the fall in numbers of new cases.

In Canada, 10 new probable cases were reported during the weekend, bringing the total since May 22 to 58. Two more patients died, bringing the total number of deaths to 31 since March, and 174 people with some symptoms remain "under investigation" in isolation.

The disease appeared to have burned itself out by the last week of April, but seems to have spread quietly at North York General Hospital for more than a month before being recognized May 22. Officials said during the weekend that they are investigating five deaths at Scarborough Centenary Hospital as possibly linked to SARS. A high number of deaths in a short period of time at the hospital raised concern, and laboratory tests conducted during autopsies have shown some preliminary evidence of coronavirus in at least one of the patients, officials said. The hospital's emergency room and walk-in clinics have been closed and the patients' close contacts ordered into isolation.

Investigators from Health Canada and the U.S. Centers for Disease Control and Prevention are trying to piece together what triggered the infections at North York General Hospital. James Young, Ontario's commissioner of public security, warned Friday that the weekend was "a nervous weekend" because of the number of people exposed in the previous 10 days. In a hopeful sign, those in quarantine at home dropped to 5,200 people from about 8,000 Saturday. An additional 5,800 health-care workers remained in working quarantine, shuttling straight home from their hospitals jobs to isolation conditions at home.

Taiwan, meanwhile, reported a third straight day of probable new SARS cases in the single digits, as increasingly confident health officials launched a "National Temperature Monitoring Campaign" to try to ensure that the ailment remains contained. The island added four new probable SARS patients yesterday, and a total of 16 Friday and Saturday, bringing the cumulative number of cases to 680, including 81 deaths. A total of 134 SARS people have been treated and discharged so far.

In Hong Kong, seven more people died of the syndrome during the weekend, including a health-care worker who had fallen ill treating SARS patients in the first days of the outbreak at the city's Prince of Wales Hospital. Hong Kong has reported a total of 1,742 cases of SARS since late February, of whom 281 have died. There were a total of six new cases reported Saturday and yesterday, three of whom were health-care workers from North District Hospital. Of Hong Kong's total cases, 384, or 22%, have been health-care workers. Health officials say 83 people still are being treated for the disorder, 27 of whom are in intensive care; 1,318 people have been treated and released.

WHO declared Singapore SARS-free on Friday. The United Nations health agency praised the city-state's handling of the SARS outbreak, which killed 31 people and sickened 206 in Singapore since it was first reported in March. About 280 people there still are under home quarantine.

"From the start, Singapore's handling of its SARS outbreak has been exemplary," said David Heymann, the WHO's executive director for communicable diseases. "This is an inspiring victory that should make all of us optimistic that SARS can be contained everywhere."

—Jason Dean in Taipei, Matt Pottinger in Hong Kong, and Hasan Jafri in Singapore contributed to this article.

Canadians May Wrap Up Probe Into a Case of Mad-Cow Disease

By Tamsin Carlisle

OTTAWA—An exhaustive Canadian-government investigation into a single case of mad-cow disease could wrap up within the next few days. If herds in question all get a clean bill of health, it could open the way for the U.S. and other trade partners to lift their bans on imports of Canadian beef.

So far, the 370 animals tested all have been found free of the disease, formally known as bovine spongiform encephalopathy, or BSE. As of the end of last week, about 1,050 head of cattle from eight Canadian farms had been slaughtered and sent for testing as part of the investigation, which so far hasn't identified a single additional case of BSE in Canada.

Among the cows tested was an entire herd of 48 cattle taken from a farm in Saskatchewan, where investigators believe the sick cow is likely to have lived for as long as four years. Because of the length of time that the diseased cow may have spent on the Saskatchewan farm, the most recent batch of test results was considered crucial to the investigation. Investigators believe it would have been highly likely to turn up new cases of BSE had the disease taken root in Canada.

European studies have shown that cattle most commonly acquire BSE by ingesting feed containing the ground-up remains of other infected cattle. It isn't contagious between animals. The disease may also occasionally be transmitted from mother cow to calf, and in rare cases could arise spontaneously.

It still isn't clear how the sick cow contracted the brain-wasting disease, which in extremely rare cases can be passed on to humans through eating infected meat.

The human form of the neurological disease, called variant Creutzfeldt-Jacob Disease, is untreatable and has killed at least 130 people since the European BSE outbreak started in 1986.

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EXHIBIT O

INFLATION IS THE BOND MARKET IN FOR A SHOCK? (P. 84)

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HIGH TECH THE XT REVOLUTION IN WIRELESS (P. 94)

The McGraw-Hill Companies

BusinessWeek

APRIL 26, 2004

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oston's Pedro Martinez

Can the Red Sox beat the Yankees and finally win it all?

(P. 74)

James became convinced back in the 1970s that much of what passed for traditional baseball wisdom was in fact deeply flawed. Take time-honored statistics like runs batted in and batting average. RBI, which can have as much to do with batting order as ability, turns out to be a crude gauge of talent. Nor is a player's batting average the best measure of how adept he is in creating runs, since it ignores walks—a perfectly effective means of getting to first base that also helps tire out the pitcher. Similarly, while the sacrifice bunt has long been an acclaimed strategy, "a large data analysis suggests that's almost always the wrong thing to do" because it reduces your chances of scoring runs, says Neal Traven, co-chairman of the Society for American Baseball Research's (SABR) statistical analysis committee.

No Panacea

THE SOX ARE NOW USING SABERMETRICS to get more for their money. "There are immense inefficiencies in the market for players," says James. Some of them were right in Boston, at least before the arrival of Henry. The team was lavishing more than $6 million a year on both Jose Offerman and John Valentin, two mediocre infielders. Using sabermetrics, the Sox have cut the overpaid and hired the underemployed: Last year they picked up slugger David Ortiz for just $1.25 million and Kevin Millar for $2 million. Both became stars. "They actually cut the payroll by $9 million, yet improved the team," says Doug Pappas, chair of SABR's business of baseball committee. New manager Terry Francona will also use sabermetrics in game-day decisions. "Sometimes your eyes can be deceived in this game," he says.

Still, sabermetrics is hardly a panacea. Last season, the Red Sox made a highly controversial decision to forgo a closer in favor of a "closer by committee" system, in which different relievers took on the job. On paper, it looked great. But in practice, the bullpen blew up. So the Sox reverted to tradition by snagging Foulke.

Foulke, of course, cost the Sox plenty. But the Sox have been far more prudent than the Yankees, who make less use of sabermetrics and whose payroll is bloated with more than $500 million in guaranteed contracts through 2010. "No sabermetrically oriented team would ever have signed Jason Giambi to the backloaded deal the Yankees did," says Pappas. "He's already 33 and has injury issues." The Yankees have promised him more than $20 million a year from 2006 to 2008.

Even after all he has done, though, Henry is not about to join in the traditional new-season cry in Boston: "This is the year!" That would violate his statistical principles. If the Red Sox make the playoffs, he figures the chances of winning are only 12.5%—maybe as high as 15%. "Everyone in baseball is well aware that anything can happen in a short series. That's why we need to take a long-term perspective and make the playoffs every year," he says.

But if the Red Sox finally do win the Series, "this town would explode," says Johnny Pesky, the former shortstop who was the goat in the 1946 World Series, the first of four the Sox lost in the seventh game. And John Henry—who says he doesn't believe in such things—would be immortalized as the man who finally broke the Curse. ■

–With Tom Lowry and David Polek in New York and Joseph Weber in Chicago

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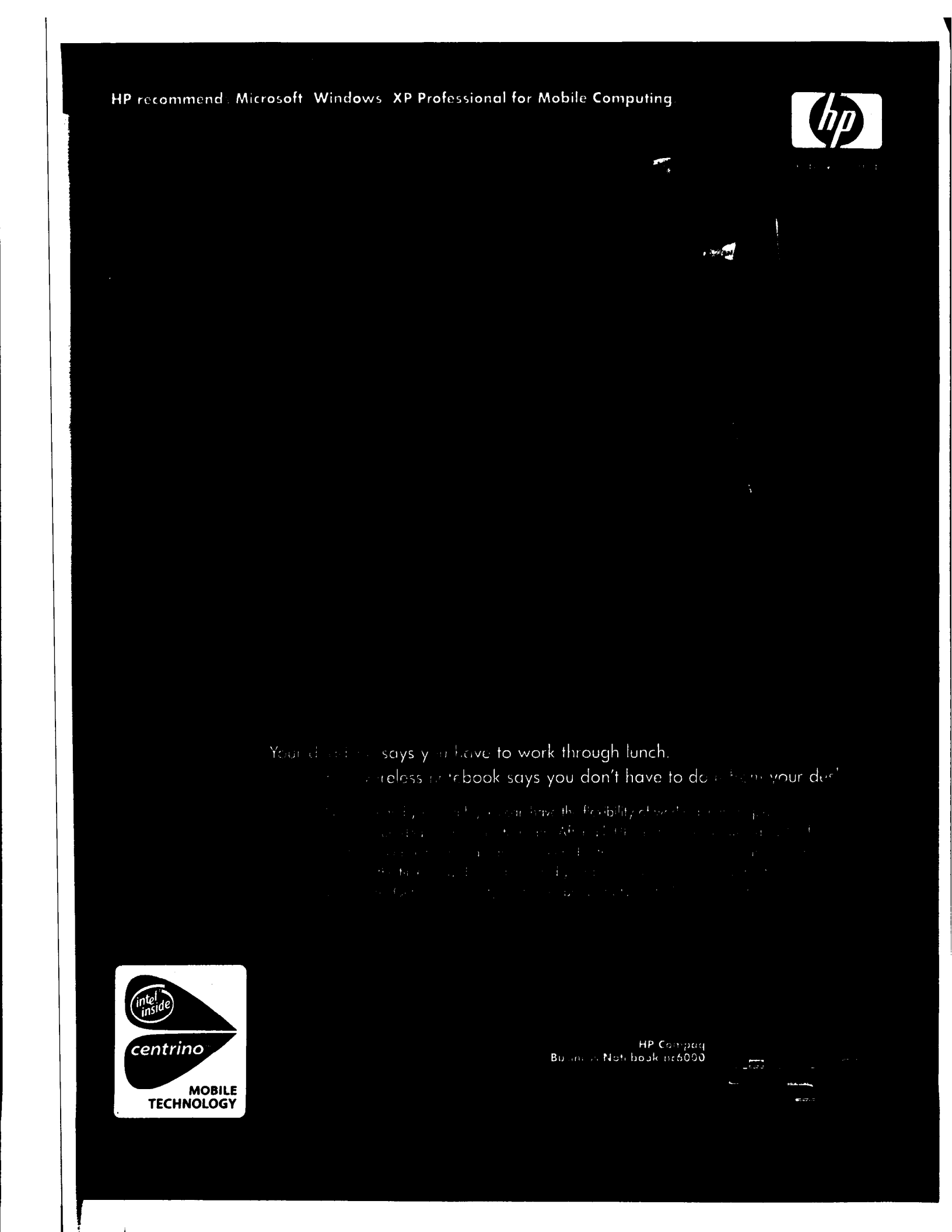

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EXHIBIT P

The War Over Cheap Drugs

Enron: The Noose Tightens

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STOCKS

The 2004 List

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For the full report, see page 80.

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2

3 SOUTHWE

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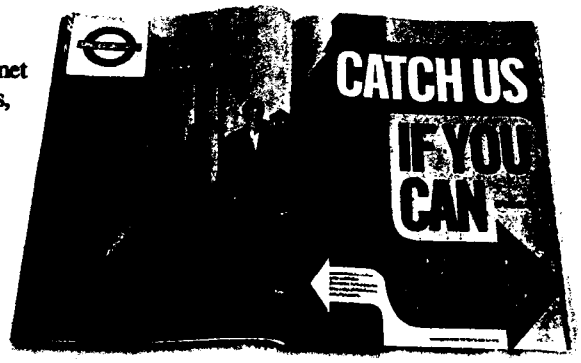
LETTERS TO FORTUNE

Skype Hunt



I really enjoyed "Catch Us If You Can" (Feb. 9), but voice over Internet protocol has been around for years, basically waiting for broadband. Some telcos already use VOIP invisibly within their telephone switching equipment, and gateways are multiplying as well.

As for Skype, shouldn't the "Sk" be an "H"? There is little new in the product you describe. You can do VOIP with free software built into MSN Messenger and Windows XP (NetMeeting). Even the P2P aspect of the technology is irrelevant, since generally only the two participants in a typical link are interested in the contents. Contrast this with music or video files that are potentially of interest to everybody.

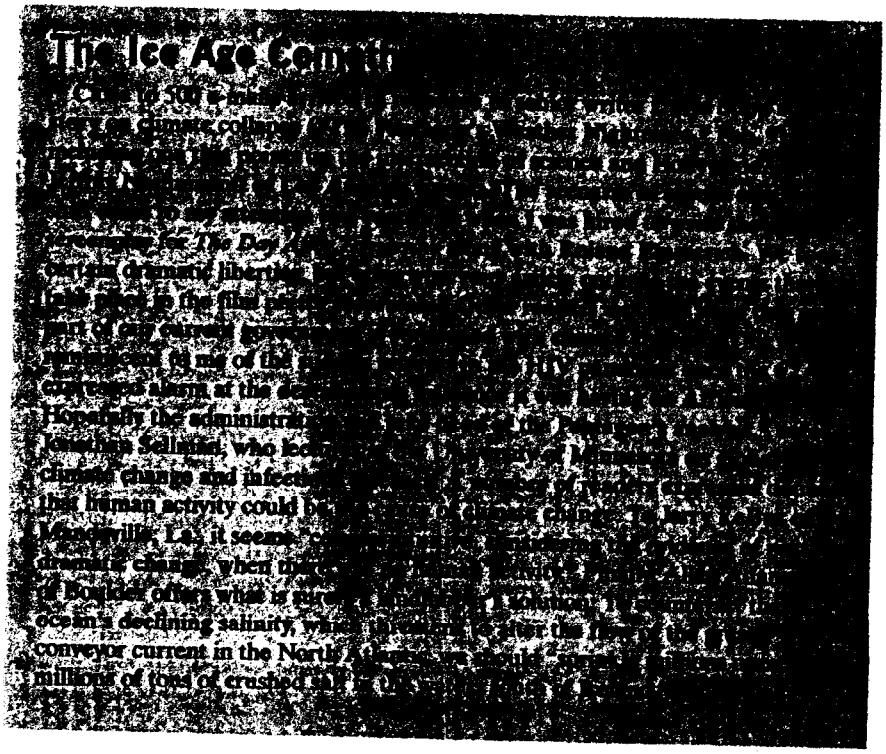
On the other hand, you have achieved at a stroke what others have been trying to do for years. You've made us sit up and ask, What exactly *are* we waiting for?

Jerry Karlin
Tunbridge Wells, England

Bad News for Business

Geoffrey Colvin's prediction of the rough ride ahead for corporate America's public image is sobering and true ("Get Ready: It's Going to Be a Trying Year," Jan. 26). The high-profile media stories of corporate scandal and lawsuits, coupled with public ignorance of the fundamentals of business and economics, have fueled hostility to American enterprise.

A recent survey by the Kaiser Family Foundation and the *Washington Post* asked respondents what profit percentage they thought most American corporations made; the mean answer was 46.7% (the correct answer is 8%). When asked to list reasons why the "economy is not doing better," 46% stated it was because business profits are too high. Meanwhile, a survey by DecisionQuest/MCAA finds that three out of four males distrust U.S. businesses.



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Carry on.

The need to dispel these myths is paramount. The newly formed First Jobs Institute will promote economic literacy and a fair view of corporate America. Through unique venues, it will teach tomorrow's business leaders the value of the free-market economy, that scandals are not representative of corporate America, and that success in business is a path open to everyone. If we do not promote the positives of American enterprise, the scandals of a few will stereotype us all.

Larry Lindsey
Chairman, First Jobs Institute
Washington, D.C.

Larry Lindsey, a Federal Reserve governor from 1991 to 1997, is former director of the National Economic Council.

Populists or Panderers?

In "The Democrats Are Out to Get You" (Feb. 9), FORTUNE seems dismayed that voters are resonating with the Democrats' populist message. Hmm ... let's think about this. We have spent the past three years watching the Bush administration abandon sensible energy and environmental policies because of its cozy relationship with Big Oil. We have seen CEOs at Tyco, Enron, WorldCom, et al. enrich themselves while trashing their firms. We've watched boards rubber-stamp outrageous compensation plans for top executives, even in the face of poor corporate performance. All this while regulatory agencies like the SEC fail to exercise even the minimum of responsible oversight.

In the very same First section there are mentions of Dick Grasso, Martha Stewart, Tyco, Parmalat, and *The Price of Loyalty*'s critique of the Bush administration. Why would it be surprising that the electorate is responding to a populist message?

Janet M. Bailey
Boston

It's the Taste, Stupid

"Atkins World" (Jan. 12) made it clear that food processors understand that a sustainable diet has to satisfy the tastes of the consumer. However, maximum profits are generated by not satisfying the consumer too easily. The food industry learned that low-fat versions of most foods were so unsatisfying that people would double or triple the serving sizes to reach satiation. This was doubly beneficial for the producers of SnackWells, Fat-Free Fig Newtons, etc., as these products command a per-ounce price premium.

The Atkins diet is entirely compatible with this program, with the difference that high-margin low-fat foods are replaced with high-margin low-carb foods.

It's unfortunate that food science must be diverted from producing satisfying taste and nutrition in favor of high-margin foods with highly skewed nutrient balances.

Jon Fleig
Rochester, N.Y.

Corrections

In "Never Heard of Acxiom?" (Feb. 23), we incorrectly reported that the FBI and the Secret Service stumbled upon a group of hackers in Florida who had broken into the company's servers. In fact, the electronic break-in was discovered during a self-audit by Acxiom following a tip-off from authorities about another intrusion. Acxiom reported the second incident to government investigators. And in "Can China Keep the Lights On?" (Feb. 23), we wrote that Warren Buffett had purchased a 13% stake in PetroChina for $500 million. We should have said that he had purchased 13% of the publicly trade shares, which is equivalent to a 1.3% stake in the company. FORTUNE regrets the errors. ■

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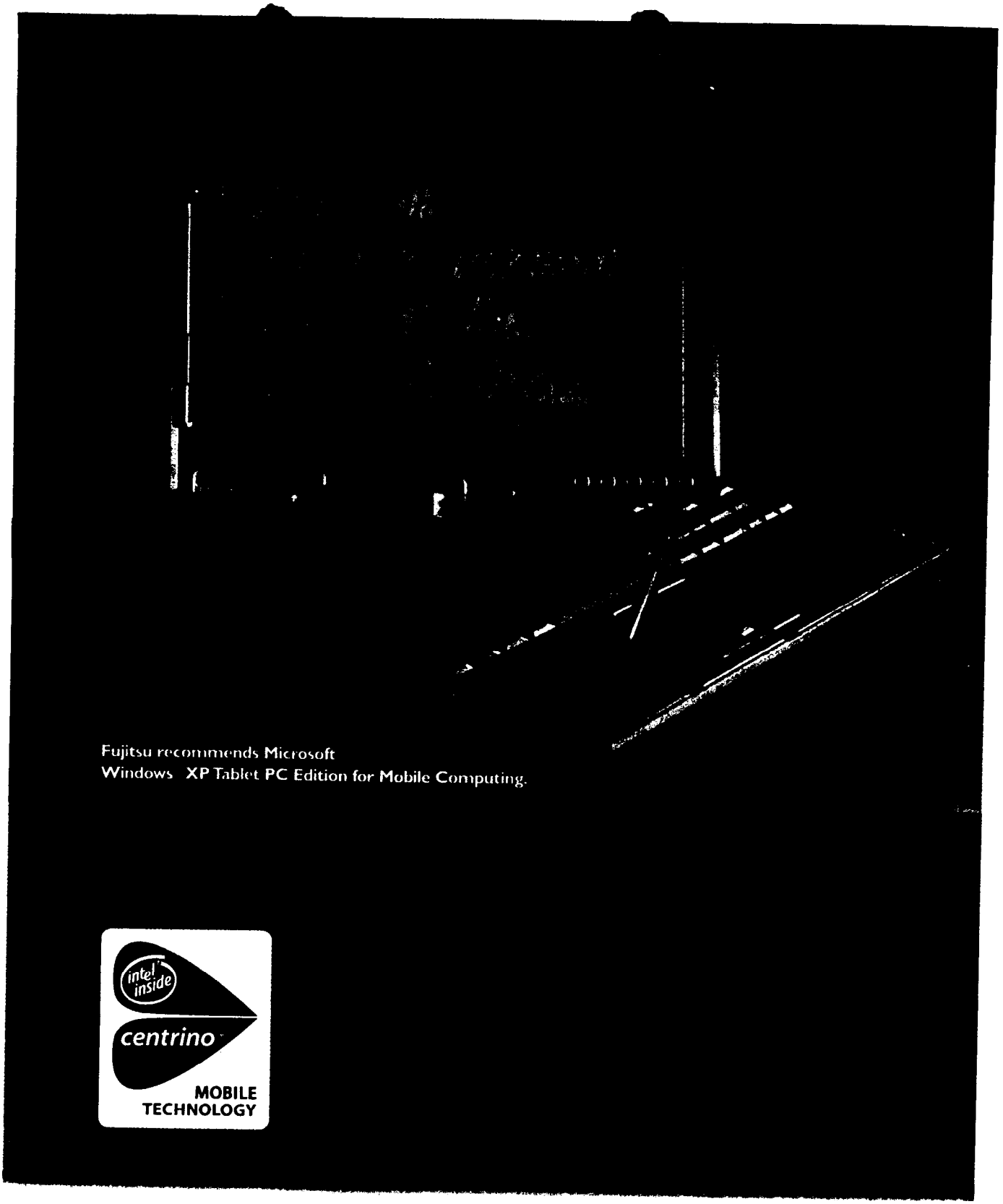

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