BULKY DOCUMENTS

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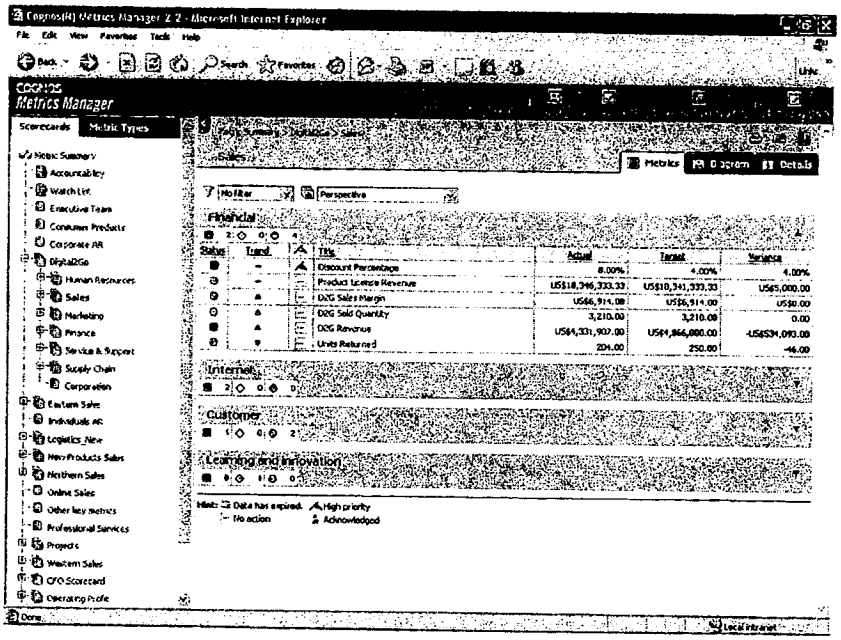
Part 3 of 4

Processed by Curtis Puryear

EXHIBIT 6.11 STRATEGIC DASHBOARD



The screenshot above shows a scorecard interface from a Web-based strategic dashboard that groups metrics into four perspectives: Financial, Internal, Customer, and Learning and Innovation. The left panel contains a list of scorecards by region and department; the left side of the center panel graphically displays performance status, trend, and alerts for each metric, whereas the right side shows actual data, targets, and variance between them. Users can view a strategy map diagram, drill into detailed data, or access reports and other documents, such as PowerPoint presentations or spreadsheets, by clicking on tabs in the upper right.

Source: Courtesy of Cognos Corporation.

strategic objectives and test their assumptions about the effectiveness of those objectives and the metrics that measure performance against them to deliver desired results. Strategic dashboards support an array of communications devices to foster greater collaboration among managers and staff and between departments and divisions.

For example, most strategic dashboards let employees attach written commentaries to individual metrics, providing context to results, outlining next steps, or delivering a forecast for the next period. Some strategic dashboards also let users establish workflows in which scorecards are sent to a series of individuals and

managers for review and approval. These management features transform a strategic dashboard from a performance measurement system to a performance management system.

SUMMARY

Performance dashboards are here to stay. They provide an intuitive way for users to obtain the information they need in a timely fashion to perform their jobs. There are three basic flavors of dashboards: operational, tactical, and strategic. Operational dashboards monitor business processes at the operational level; tactical dashboards chart the progress of departmental initiatives and projects, enabling users to analyze and forecast trends; strategic dashboards align activity with strategy using scorecards and other performance management techniques.

Today, the most popular, but least mature, of the three types is the strategic dashboard. Executives are deploying strategic dashboards as management tools to align the organization better around strategic objectives. Unfortunately, many strategic dashboards today do not yet provide the depth of integrated information and interactive analysis to deliver long-term business value.

CHAPTER 7

Operational Dashboards in Action: Quicken Loans, Inc.

The sales floor at Quicken Loans pulses with energy. More than 500 mortgage experts sit at monitors in a large Web call center on the outskirts of Livonia, Michigan. Every representative is talking on the phone with a customer who has contacted the company via phone, e-mail, or the Web while evaluating mortgage programs and interest rates on their computer screens. More than a dozen managers are ready to assist the members of their mortgage team.

Televisions hang from the ceiling every 20 feet, displaying the results of all this activity in a color-coded dashboard. Every two minutes, the monitors show the top 15 mortgage bankers in one of a dozen performance categories. Mortgage bankers and managers periodically glance at the monitors to check their progress toward achieving individual and team milestones.

Rising 10 feet from the center of the sales floor is command central for the Web call center's operations. Operations managers monitor dashboard displays on a half-dozen computer screens and televisions to track the flow of leads, calls, and systems performance in real time and ensure the smooth flow of operations.

BENEFITS OF OPERATIONAL DASHBOARDS

Quicken Loans

The Web call center at Quicken Loans is ground zero for the nation's largest online lender, which closed $12 billion in retail mortgage loans in 2004. Any outage or slow-down in this core operation can cost Quicken Loans millions of dollars an hour. Thus, it is imperative that everyone involved in the process—from mortgage bankers to managers and executives—stay abreast of what is happening on the sales floor from one moment to the next.

To support this fast-paced environment, Quicken Loans two years ago implemented a series of operational dashboards built on a right-time business intelligence (BI) infrastructure. The new system delivers information about a variety of operational processes to executives, managers, and mortgage bankers as quickly as they need it—usually within seconds or minutes. Like many companies, Quicken Loans uses the term "right time" instead of "real time" to describe the delivery of the right data to the right person at the right time to optimize decision making.

"Prior to the new system, we were measuring the business by hand. We needed to accelerate the delivery of information to keep pace with our fast-moving business," says Eric Lofstrom, manager of BI at Quicken Loans. Previously, the company let users run queries and reports directly against its core operational systems, bogging down operational performance and query response times.

In contrast, the new system delivers nearly instantaneous data about leads, channel productivity, and systems performance to more than half of Quicken Loans' 2,500-person workforce. The new performance dashboard and BI infrastructure has improved business efficiency and effectiveness. It gives mortgage operations and marketing managers data about call volumes, revenues, and channel productivity in seconds or minutes, enabling them to work more proactively with mortgage bankers to meet target goals.

The new system has also reduced the time business analysts spend collecting data by 350 man-hours a month and provides a consistent set of metrics and data that everyone in the company uses. More importantly, the system helps align operations with the company's strategy and culture. "At Quicken Loans, we leverage velocity as a competitive weapon. Our new [operational dashboard] helps us meet the needs of our information-hungry corporate culture," says Lofstrom.

The Right-Time Enterprise

Quicken Loans is not alone in exploiting the value of right-time information to optimize operational processes. Many organizations are embracing the notion of doing business faster by accelerating the delivery of information to workers who need it most.

In fact, the right-time enterprise has seeped into mainstream culture, thanks to IBM, which for several years has touted "On Demand Business"™ in television advertisements. Other high-technology firms are marketing the "Zero Latency Enterprise," "Business Process Management," "Business Activity Monitoring," or "Active Data Warehousing" to describe much the same thing (see Spotlight 7.1). Whatever the name, executives now recognize that to make their organizations more nimble, competitive, and profitable, they need to integrate and optimize business processes using right-time information.

SPOTLIGHT 7.1 RIGHT-TIME MONIKERS

The following terms and concepts refer to applications and systems that capture and deliver right-time information in one form or another.

Zero Latency Enterprise (ZLE). Similar to IBM's "On Demand Business"™, a ZLE integrates diverse computer applications and eliminates delays in the propagation of new data throughout an organization, increasing business efficiency and effectiveness. ZLE was first popularized by Compaq (now part of Hewlett Packard) to showcase its high-availability NonStop computers.

Business Process Management. A method for optimizing business processes using a variety of techniques and technologies, most notably EAI software (see Chapter 2).

Business Activity Monitoring. A right-time system that displays performance metrics from multiple systems in an end-to-end process (see Chapter 6).

Active Data Warehousing. Teradata, a division of NCR, uses this term to describe its unique data warehousing platform, which supports queries from both analytical and operational applications without degrading the performance of either one.

An operational dashboard is merely the window through which workers, managers, and even executives can monitor business processes and take action to avert a problem or capitalize on a fleeting opportunity. Operational dashboards sit on top of a right-time BI infrastructure that merges operational and analytical processing into a seamless whole. This new capability is changing the ways companies do business, making them more agile and competitive.

Although operational dashboards can be constructed in many different ways, there are a few indispensable technologies that deliver personalized, actionable information to the right people at the right time. Some of the more prominent technologies, which were described in Chapter 3, are enterprise application integration (EAI), enterprise information integration (EII), active data warehousing, and operational data stores (ODS).

QUICKEN LOANS' DASHBOARDS

No two operational dashboards look or function the same way, but they all help users monitor and analyze information in right time. Quicken Loans uses three types of operational dashboards to optimize Web call center processes. Each style of operational dashboard is designed for a slightly different purpose and audience and supports different degrees of data latency. Most importantly, however, all the dashboards use the same data, which means that everyone is "working from the same version of the truth," says Lofstrom.

1. **The Dashboard "Ticker."** Provides mortgage bankers and managers with real-time information about leads, revenue, and calling data that is updated almost instantaneously.
2. **Kanban Reports.** Provides information about individual performance and is updated every 10 minutes.
3. **Managerial Dashboard.** Provides mortgage operations and marketing managers with trending data that are updated every 30 minutes or so.

The Dashboard "Ticker"

Quicken Loans encourages its 500+ mortgage bankers to place a vertical dashboard on their screens to help them track performance metrics of interest to them. This vertical dashboard resembles a stock ticker that users can populate with both real-time and right-time data and place anywhere on their screen. The real-time data are updated instantaneously after each transaction or event. The right-time data are updated every 10 to 30 minutes depending on the data. Like a stock ticker, users only view the data; they do not interact with it. There are no additional data for users to drill into.

Each dashboard ticker consists of multiple panels that users can populate with data feeds from one or more sources. For example, in Exhibit 7.1, the dashboard ticker consists of three panels. The top panel consists of personal and group metrics that are updated daily from an online analytical processing (OLAP) cube, whereas the bottom two are updated instantaneously via a real-time data feed. The bottom panel embeds some simple linear regressions that estimate whether a loan consultant is going to meet daily goals based on his or her activity up to that point in time.

Kanban Dashboard

Quicken Loans' managers use Kanban-style dashboards to track the performance of their team and know when to lend assistance or provide additional training. The Kanban dashboard is a color-coded chart consisting of a dozen or so key performance indicators (KPIs) that are updated every 10 minutes. Like the

EXHIBIT 7.1 DASHBOARD TICKER

User ID:	MyUserName	
Team:	MyTeamName	
Name:	MyName	
Date:	3/30/2005	
Data Source 1		**12:30PM**
Today		
Measure 1	1 for	$710,000.00
Measure 2	2 for	$186,000.00
Measure 3	4 for	$558,100.00
Measure 4	3 for	$482,700.00
MTD		
Measure 5	43 for	$6,872,275.00
Measure 6	42 for	$5,864,275.00
Measure 7	44 for	$6,212,775.00
Measure 8	43 for	$7,339,800.00

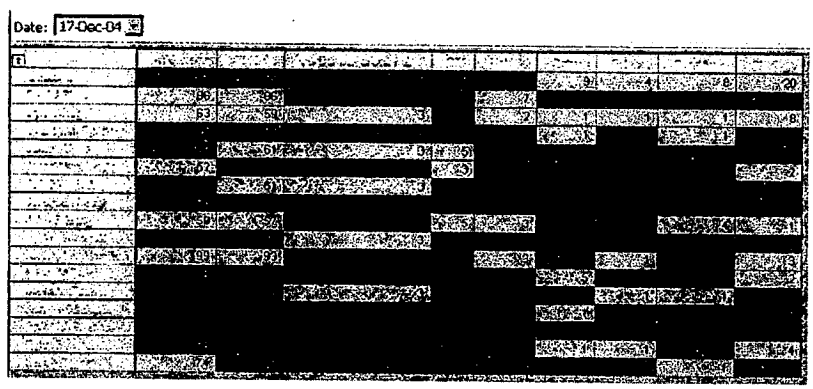
Data Source 2		**12:15PM**
Today		
Measure 1		7
Measure 2		24
Measure 3		23
Measure 4		6
Measure 5		4
Measure 6		2
Measure 7		0
Measure 8		8
Measure 9		5
Measure 10		13

Data Source 3		**7:30AM**
MTD (7 Day Lag)		
Measure 1		40.59 %
Measure 2		14.76 %
Measure 3		14.02 %
Measure 4		12.55 %
Measure 5		6.64 %

This dashboard "ticker" consists of three panels that users can populate with metrics of their choosing. The ticker sits on top of other applications running on their screens and is updated in both real time and right time depending on the metrics chosen. In this case, the top panel is updated every 15 minutes and the bottom two panels are updated instantaneously as events are generated. (The data have been erased intentionally.)

Source:

EXHIBIT 7.2 KANBAN DASHBOARD



This Kanban-style chart tracks the performance of individual loan consultants every 10 minutes and color codes cells red or green so managers and supervisors can quickly identify individuals who need assistance. (Text has been rubbed out intentionally.)

Source: Copyright © 2005 Quicken Loans Inc. Reprinted with Permission.

dashboard ticker, the Kanban reports are flat displays of data designed for monitoring, not interaction. Kanban is the Japanese term for "signal" that is used to describe a just-in-time manufacturing environment in which materials are dynamically replenished.

As seen in Exhibit 7.2, the Kanban dashboard lists mortgage bankers down the vertical axis and KPIs on the horizontal axis. The KPIs are simple counts with thresholds applied so that managers can quickly see which consultants are on track to meet goals and which are not, by the color-coding of the cells. For example, when a supervisor notices that performance for one loan consultant is dipping into the red zone, the supervisor can provide help as needed.

Quicken Loans also displays a version of this Kanban chart on television monitors spread throughout the floor, as described in the opening scene of this chapter. These Kanban dashboards show the top 15 sales people for each metric, rotating one metric at a time every two-and-a-half minutes. These bare-bones Kanban charts create a friendly, competitive atmosphere as mortgage bankers strive to make the "board."

Managerial Dashboard

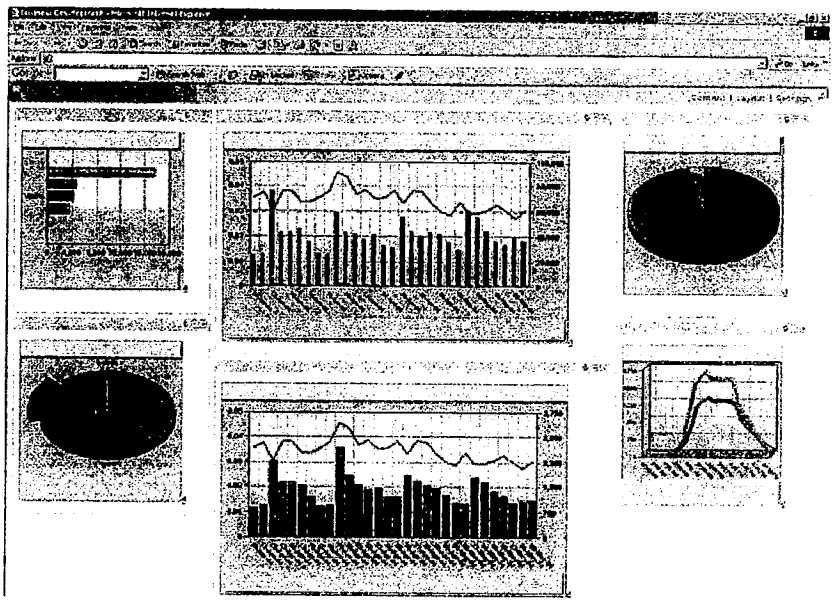
Sales, marketing, and operations managers use a standard dashboard to analyze daily and weekly trends on the sales floor. Typically, Quicken Loans updates these

types of dashboards every 30 minutes or so. "For the most part, these users are satisfied with a 10 to 30 minute latency," says Lofstrom.

Exhibit 7.3 shows a managerial dashboard that lets sales managers track the flow and mix of sales for the day, among other things. Each metric on the screen can be populated with data from different sources (i.e., OLAP cubes, data warehouse, real-time feed) and updated at different intervals (i.e., instantaneously, every 10 minutes or every 30 minutes). Also, unlike the Kanban dashboards, users can personalize what they see in the managerial dashboard. By clicking on the "content" or "layout" link in the upper right-hand corner, users can select the objects they want to view and where to position them on the dashboard.

Because managers use these dashboards to oversee operational processes, Quicken Loans strives to keep the dashboards as simple as possible. It does not want to overwhelm users with a multitude of options and perspectives that would make it harder for them to obtain the information they need to do their

EXHIBIT 7.3 MANAGERIAL DASHBOARD



This dashboard shows how a sales or marketing manager might place a variety of metrics on a screen to monitor activity on the sales floor. (Note: the data have been intentionally changed.)

Source: Copyright © 2005 Quicken Loans Inc. Reprinted with Permission.

jobs in a timely manner. As a result, most of the objects in the managerial dashboard offer little or no interactivity.

Besides the three types of dashboards described above, Quicken Loans provides traditional reporting and analysis tools to 75 business analysts to explore historical trends and issues. These desktop tools run on the same BI architecture as the dashboards. Quicken Loans created 250 OLAP cubes to support business analysts, who can also query the data warehouse and ODS directly, if they desire. These OLAP cubes generally contain much more data than the OLAP cubes that support the dashboards described above.

QUICKEN LOANS' BI ARCHITECTURE

Quicken Loans developed its right-time operational dashboards on the same BI infrastructure as its reporting and analysis applications. Quicken Loans did not have a BI environment when it started, so it had a clean slate upon which to construct a right-time solution to meet user demand. In contrast, most companies have to retrofit an existing BI environment, which can be costly and cumbersome at best, unless they had the foresight to build right-time capabilities into the BI architecture upfront (see Spotlight 7.2).

SPOTLIGHT 7.2 CONTINENTAL THINKS AHEAD

With a little foresight and the right technology, organizations can deliver right-time capabilities without major surgery to their existing BI infrastructure and at little additional cost. This is exactly what Alicia Acebo did while at Continental Airlines, which proved to be an extremely judicious decision.

"We made our data warehouse real time from day one because I knew users would eventually ask for it," says Acebo, who spent much of her career building online reservation systems. Acebo was aided by the fact that Continental already had an event messaging backbone that connected its reservation system to other online systems in real time and that it used an "active data warehousing" platform from Teradata, a division of NCR, that could accept real-time data feeds.

Anticipating future needs, Acebo's team created a real-time interface between the data warehouse and the event-driven messaging system, even though it still planned load data in batch at nights or on weekends for the foreseeable future.

"After the terrorist attacks on September 11, 2001, our management was ready to move from daily to hourly feeds of the data warehouse. Because we built real-time capabilities into our infrastructure from the start, the whole process took us one week." Subsequently, Continental received recognition from the Federal Bureau of Investigation for its role in tracking down terrorists because of the timeliness of information it provided to the agency.

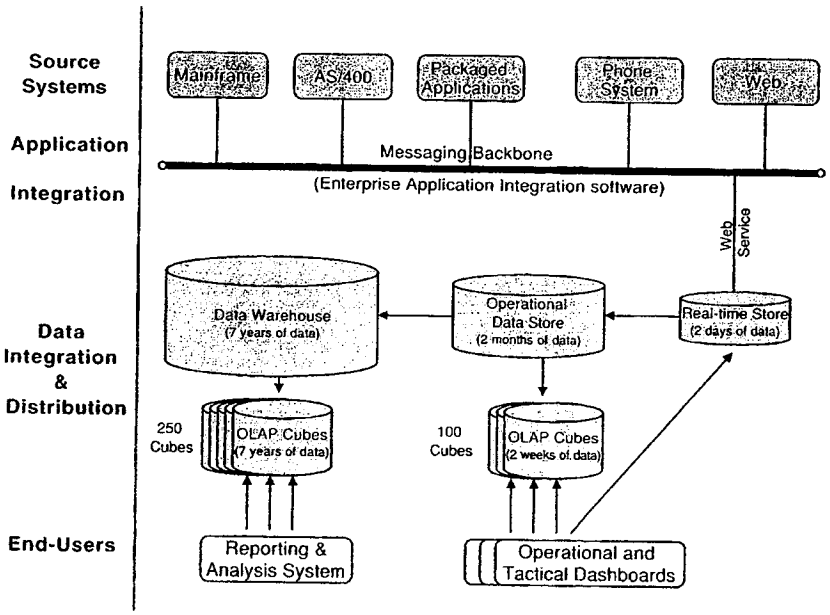
Architectural Components

Exhibit 7.4 shows how Quicken Loans constructed its BI environment. The architecture has four layers: 1) source systems, 2) application integration, 3) data integration and distribution, and 4) end-user access. This is a classic BI architecture except for the fact that Quicken Loans trickle-feeds the data into the environment one transaction at a time instead of loading the data in batch at night or on the weekend.

Application Integration Layer

Quicken Loans uses EAI software to extract data from source systems in real time. It does this by creating a copy of each event or transaction as it occurs in

EXHIBIT 7.4 QUICKEN LOANS' ARCHITECTURE



Quicken Loans' BI architecture consists of four layers. The key, however, is a Web service that pulls data off an event-driven messaging backbone and deposits it into a real-time data store that dashboards query at various intervals to update their screens.

the source system and publishing it to a messaging backbone. Any application on the backbone can then "subscribe" to the event or message, grab it off the backbone, and store it locally.

Quicken Loans created a BI Web service that subscribes to the EAI backbone and captures events as they are published, a process known as trickle feeding. The BI Web service is how Quicken Loans moves all operational data into its BI environment. It also created a *real-time data store* to hold events in memory and make them available to other applications in the BI environment, including the dashboard ticker and Quicken Loans' ODS.

Data Integration and Distribution Layer

Like many companies, Quicken Loans distributes data among multiple types of analytical data stores, each of which serves a different analytical task.

The ODS is a data warehouse that has been slimmed down to deliver small volumes of integrated data to operational applications that require subsecond response times. Quicken Loans' ODS holds only two months of data. Its major role is to load OLAP cubes in near real-time and pass new data to the data warehouse, which stores up to seven years of data and is used primarily for in-depth trend analysis, not operational monitoring or analysis.

Once the data are precalculated in the OLAP cubes, users can "slice and dice" the data by dimension and level. This "speed of thought" analysis makes OLAP very attractive to users who want to explore trends and issues in the data. The traditional drawback of OLAP cubes is that they support only summary level data and take a long time to load and calculate. Consequently, most companies have shied away from OLAP cubes to support low-latency analytical applications, such as the one Quicken Loans built.

However, Quicken Loans engineered a way to refresh its OLAP cubes every 15 minutes. It does this in two ways: 1) it keeps a minimum amount of data in these OLAP cubes, usually no more than a few days worth, and it restricts the number of dimensions to seven; and 2) it keeps current data in a separate partition from day-old data and only refreshes the current data. This approach minimizes the amount of data that needs to be refreshed so that the update happens quickly and does not block users from accessing or viewing the data. This is an innovative use of OLAP cubes and helps power Quicken Loans' right-time environment.

End-User Access Layer

Quicken Loans' dashboards generally query the OLAP cubes for data, although they can pull data from the real-time data store, the ODS, or the data warehouse. For example, dashboard tickers query the real-time data store when users want

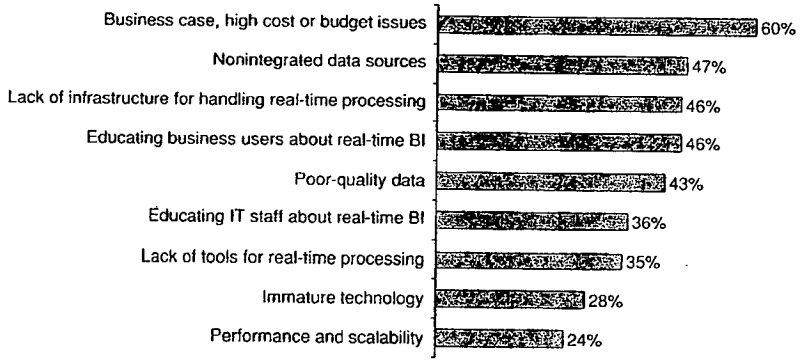
instantaneous updates. Analytical dashboards query the data warehouse when users want to access historical or other data not found in an OLAP cube.

In conclusion, a well-constructed BI environment gives companies a lot of flexibility to meet the broad range of users' analytical requirements at low cost while preserving data consistency. Unfortunately, most companies do not follow Quicken Loans' example. They build different applications to handle different analytical tasks, such as real-time monitoring, "slice and dice" analysis, enterprise reporting, and scorecarding. These analytical "silos" are costly and redundant and make it impossible for the company to ensure that everyone uses the same metrics and data. Quicken Loans shows how it is possible to meet all these analytical needs with a single, integrated BI environment.

CHALLENGES

Many challenges are unique to the deployment of operational dashboards. We have already discussed one major challenge, the need to construct analytical systems to capture and display integrated data in right time. A survey by The Data Warehousing Institute (TDWI) reveals other challenges, including making the business case for right-time analysis, integrating data sources, educating business users about latency issues, and poor-quality data, among other things (see Exhibit 7.5).

EXHIBIT 7.5 OBSTACLES TO RIGHT-TIME BI



Data based on responses from 383 data warehousing and business intelligence professionals.

Source: Colin White, "The Real Time Enterprise" (*TDWI Report Series*, The Data Warehousing Institute, 2004).

Increased Costs

Scalability and Availability Requirements

Building a right-time analytical environment from scratch or retrofitting an existing one is not cheap. The primary reason is that users have little tolerance for outages or slow-downs because they depend on these systems to make rapid decisions.

To support right-time requirements, technical teams need to "bullet-proof" the entire information delivery architecture. They need to increase system reliability, availability, and scalability, which adds significantly to hardware, software, and staffing costs.

Specifically, the IT group needs to replace smaller servers with bigger ones to avoid performance slowdowns during peak hours of business activity. They also need to purchase additional servers and software so that if one server crashes, another can automatically pick up its load. As companies purchase additional hardware with greater power and failover capabilities, software license and maintenance costs climb proportionally.

More Staff Required

Right-time systems also stretch technical staff to the limit. It is no longer sufficient to respond to a system problem by the end of a business day. "Because we are publishing new numbers every ten minutes, we have exactly nine minutes to fix a problem before it turns into a crisis," says Quicken Loans' Lofstrom. As a result, Lofstrom has hired additional staff so he can always keep a technical person on call and available to troubleshoot problems within seconds.

Educating Users

Some users often have difficulty adapting to analytical systems that contain right-time information. Many do not like data to change on the screen while they are looking at it, while others do not understand why the transaction they just entered has not shown up on their "real-time" dashboard. Also, many people who manage fast-paced processes often forget to check the time and date of information on their screen before making a decision.

To avoid problems, organizations need to teach workers the difference between "real-time" and "right-time" information. Workers need to know that not all metrics and reports are updated as soon as events occur. Some might be refreshed within seconds, but others might take 15 minutes to refresh or more. They also need to remember that sometimes reports and metrics fail to refresh on schedule.

Time Stamps and Labels

In addition, the technical team needs to post the time and date that a screen or report refreshes with the latest data. Users must then learn to check these "time stamps" before jumping to conclusions. To avoid misinterpretation, some technical teams do not refresh screens dynamically. They let users update a report or screen by pushing a "refresh" button. Some even let users choose the time frame for the data they want to view through a drop-down list box.

Finally, the technical team also needs to write clear and unambiguous titles for all dashboard reports and metrics so workers do not confuse one report with another and make a hasty decision based on faulty assumptions. One financial executive likes to say the reports should be labeled in "Forest Gump" style so anyone can understand what they are about.

Prioritizing Requirements

A related challenge is figuring out how fast users really want data to be updated. If asked, most users say they want the most up-to-date information possible. However, what they want and what they really need are often very different. The only way to filter real from perceived requirements is for the technical team to calculate the costs of delivering information at different latency intervals and let users decide what is worth paying for. Attaching dollars and cents to latency requirements often makes the decision straightforward.

"We work with the business, tell them what it would cost to build a real-time system and let them decide whether it's worth it to them," says a BI manager at a telecommunications firm. "So far, they have not been interested in going down that path."

Reengineering Business Processes

There is no point in putting in a right-time BI infrastructure if companies do not reengineer core business processes and systems to exploit the information. For example, it is no use providing store managers with hourly sales data if they can only change prices or shelf displays once a day. If a company deems it critical to their future success to deliver hourly information to store managers, then it must upgrade store systems so managers can exploit the information.

Ultimately, the purpose of an operational dashboard is to empower users to work more proactively and make faster, smarter decisions. Unfortunately, the human part of the right-time dashboard is often the least reliable component. Many workers do not know how to use computers proficiently, or worse yet, interpret data. In addition, most do not want to change their habitual ways of doing things. Any new information system imposes change on an organization.

Companies that underestimate the time and money it takes to change how workers use information are wasting money.

Data Quality

Data quality can also be a problem with operational dashboards. Data that stream into a dashboard often do not receive the same degree of validation and cross-checking as data in a data warehouse and may contain errors. Also, transactions that show up in an operational dashboard may get adjusted afterwards, changing final results. Besides implementing sufficient checks and controls on real-time data feeds, organizations need to educate users about the accuracy and completeness of right-time data.

On the other hand, some organizations report that right-time operations have actually improved the quality and accuracy of their data. This is true when right-time operations eliminate the need for manual reconciliation processes. For example, Continental Airlines knows if it is missing customer information as soon as it closes the doors on a flight, enabling a flight attendant to make a phone call to fill in missing data. Previously, the airline did not recognize missing information until the middle of the night when no one was around to fill in the gaps.

SUMMARY

Benefits. Operational dashboards are growing in popularity as organizations seek to reap the benefits of moving to a right-time environment. Quicken Loans, for example, built a series of right-time dashboards that deliver information to decision makers at all levels of the company as rapidly as they want it—in seconds, minutes, or hours. As a result, decision makers can now intervene more quickly to address problems that may otherwise cost the company revenues.

Dashboard Types. Quicken Loans has created different styles of dashboards to support different analytical needs. A dashboard ticker enables mortgage bankers to track their performance in real time and other metrics on an hourly or daily basis. A Kanban dashboard provides sales managers with a way to oversee the performance of an entire team of mortgage bankers. Managerial dashboards provide daily and weekly trend and performance information that sales, marketing, and operations managers use to optimize their functional areas.

Architecture. The best way to build a real-time BI environment to support operational dashboards is to trickle-feed data into it via an event-driven messaging backbone supplied by EAI vendors. Showing an innovative streak, Quicken Loans developed a Web Service to capture events from its messaging backbone and store them in a real-time data store that dashboards can query for real-time

data. It also partitioned OLAP cubes so that it could update them every 15 to 30 minutes without bringing them offline.

Challenges. Despite the many benefits that operational dashboards can bring, there are many challenges. These systems increase staffing requirements and systems costs because they require higher levels of scalability and systems availability. Users also need to be trained about the nature of right-time data, its level of accuracy and completeness, and how to interpret and act on the results. The IT staff can help by clearly time stamping and labeling all dashboard screens and metrics.

Finally, executives should recognize the degree to which a right-time analytical system can change the way people and processes work. They need to devise a change management strategy that ensures the adoption of the new systems and processes and positions the company to compete more effectively in an increasingly fast-paced business climate.

CHAPTER 8

Tactical Dashboards in Action: International Truck and Engine Corp.

Early one morning, a plant manager enters his office, plunks down a steaming cup of coffee, and logs on to the company's business intelligence (BI) portal to review the performance of the previous two shifts. Last week, the manager customized the BI portal to display the key metrics, reports, alerts, and links to Web sites that he needs to monitor the plant's progress toward meeting monthly budget and planning goals.

The first thing the manager notices is an alert indicating a higher than normal rate of rejected parts during the previous night's shift. He clicks on the alert and views a table and chart that display the number of rejects by part number and shows that the guilty culprit is a hose clamp, which was rejected at twice its normal rate. The view also contains comments from a line supervisor, saying that the clamps were breaking upon installation and that he shifted to an older batch to keep the line moving.

Worried now about the impact a lack of usable hose clamps could have on productivity and costs, the plant manager clicks on a hyperlink in the table and views a list of hose clamps used on the factory floor, including part numbers, a short description, dimensions, manufacturer, and date of last shipment. He puts in a rush order for new hose clamps from a different supplier and then sends an e-mail to the chief engineer to determine whether the hose clamps were breaking because of a defect or because the supplier shipped the wrong part. Later that day, the chief engineer confirms the manager's hunch that the supplier shipped the wrong part.

Thanks to the BI portal and his quick action, the plant manager averted a slow-down on the assembly line, which could have cost his company hundreds of thousands of dollars, and easily persuaded the supplier both to ship a new batch of hose clamps free of charge and to cover the cost of rush shipments to replace the incorrect parts.

BENEFITS OF TACTICAL DASHBOARDS

Finance Department Overhaul

In 2001, Mark Schwetschenau, senior vice president and controller at the International Truck and Engine Corporation, launched an internal program to transform the company's finance and accounting group from a financial record keeper to a proactive partner with the business. He believed that the finance group should play a more integral role in helping the $9.7 billion manufacturer of trucks, buses, and diesel engines in Warrenville, Illinois meet the growing demands of global competition, new regulations, and emerging markets as well as the company's own aggressive revenue and cost goals.

To meet these challenges and transform the finance group, Schwetschenau set forth a few principles to guide his group's efforts, each of which involved overhauling the way the company creates, delivers, and uses financial information:

- Provide access to financial information at any time
- Focus on analysis rather than data collection
- Deliver proactive rather than reactive analysis
- Use financial data as a predictive tool to guide decisions

Schwetschenau's mandate set in motion a flurry of initiatives, including projects to accelerate the closing of financial books, standardize the company's information infrastructure, and replace antiquated operational systems with new packaged applications. One of the most important projects, however, called for the creation of a Web-based reporting portal—in essence, a tactical dashboard—that puts accurate, actionable information in the hands of financial managers and analysts so they can contribute to the bottom line instead of just count it.

International Truck and Engine's KBI Portal

Today, International Truck and Engine's key business indicator (KBI) portal enables more than 500 financial executives, managers, and analysts to examine more than 130 key performance indicators that are updated daily. The KBI portal enables financial managers to improve operational performance and help avert hundreds of thousands of dollars in expenses and shipping delays.

"Our goal [with the KBI Portal] is to create a competitive advantage by providing access to timely, actionable information while at the same time increasing the quality and availability of that information," says Kathy Niesman, Director of Financial Systems at International Truck and Engine, who sponsored the information-centric initiatives in the financial transformation program.

Although the KBI portal was funded and developed by the finance department, it is not departmental in scope. Because finance and accounting touch every

part of the company, the KBI portal extracts data from more than 32 operational systems spanning the company's five major divisions—trucks, engines, buses, parts, and financing—and stores the data in the company's enterprise data warehouse, which existed prior to the KBI portal initiative. As a result, usage of the KBI portal is rapidly growing and spreading beyond the bounds of the finance group.

"Now that the information is readily available, the KBI portal is bridging the gulf between departments, especially finance and operations," says Jim Rappé, group leader of enterprise data warehousing at International Truck and Engine. "Now, financial folks are interested in viewing operational metrics and operational managers want to see financial data."

In addition, the KBI portal has replaced a hodge-podge of paper-based reports and analytical systems that financial managers in the company's business groups once used to monitor and manage operational performance. Before the KBI portal, each business group would distribute three-ring binders containing operational reports at monthly or quarterly performance reviews. Now, they hook a laptop to a projector and review their group's performance via the KBI portal on the Web.

NEXT-GENERATION BUSINESS INTELLIGENCE

Tactical Dashboards Lead the Way

International Truck and Engine's KBI portal is an excellent example of a tactical dashboard. It represents the efforts of one department to consolidate reporting, join it with timely data for analysis, and deliver it via a Web-based portal.

In Chapter 6 we defined a tactical dashboard as a "reporting portal." However, do not be fooled by the term "tactical"—these dashboards, when designed properly and anchored by an enterprise data warehouse, deliver untold value to the company. Specifically, tactical dashboards deliver the following benefits:

- **Single Version of Truth.** Gives the department a consistent set of data, metrics, and reports that everyone uses and trusts.
- **Consolidated Reporting.** Replaces multiple, redundant reports and applications with a standard reporting system that meets the information needs of all users, from business analysts to front-line workers and executives.
- **Proactive Analysis and Action.** Delivers timely, detailed information that lets users explore a problem or opportunity and take action before it is too late.

In essence, tactical dashboards revolutionize the concept of a "report"—replacing it with a performance management system that parcels out data to users on an as-needed basis (see Spotlight 8.1).

SPOTLIGHT 8.1 WHAT IS A REPORT?

The term "report" has so many meanings today that it requires clarification.

Standard Reports. Traditionally, a report is a highly formatted, static set of data that are generated on a regular basis and distributed to users in paper or (more recently) electronic format. Today, however, standard reports offer little value to knowledge workers—executives, managers, analysts, and front line staff. The data are too little, too late, and too static to do much good.

Over the years, there have been many variations of standard reports. For example, management reports compare organizational performance to budgets or plans each month; financial reports deliver balance sheets and income statements for both internal and external audiences; production reports create large volumes of pixel-perfect invoices or statements on a scheduled basis; operational reports publish results captured by a single operational system.

Interactive Reports. The next generation of "reports" are dynamic, detailed, and interactive. They let users then drill down into detail, switch to an adjacent subject area to explore information from different perspectives, or link to other related reports. Interactive reports dynamically filter the data based on a user's profile so the person only sees the data they're authorized to view. Dynamic reports also let users take snapshots of the data at any level and publish these "live views" to colleagues via email or the Web.

Interactive reports can be generated using traditional report design tools, parameterized reporting techniques, OLAP tools, visualization techniques, or other types of technologies. They are a key component in many performance dashboards. In fact, if given a dashboard or portal interface, interactive reports may be indistinguishable from a tactical dashboard.

"A dashboard is the way most users want to view information," says Ryan Uda, program manager at Cisco Systems, Inc., a provider of networking equipment, software, and services. Uda says his team considered giving users the ability to create their own reports but decided against it. "People have so much going on in their work lives—e-mails, phone calls, meetings—the faster they can access and digest information, the better. A dashboard makes employees more productive because it drastically reduces the number of steps they need to take to get the information they need."

Because of their intuitive design, tactical dashboards spread quickly beyond their departmental confines to other business units and the organization as a whole. This is because managers and analysts find tactical dashboards a quick and intuitive way to measure the progress of their projects and processes on a daily or weekly basis. Tactical dashboards also make it easy for these users to drill down beyond the surface metrics in order to analyze critical issues and forecast trends.

CHARACTERISTICS OF TACTICAL DASHBOARDS

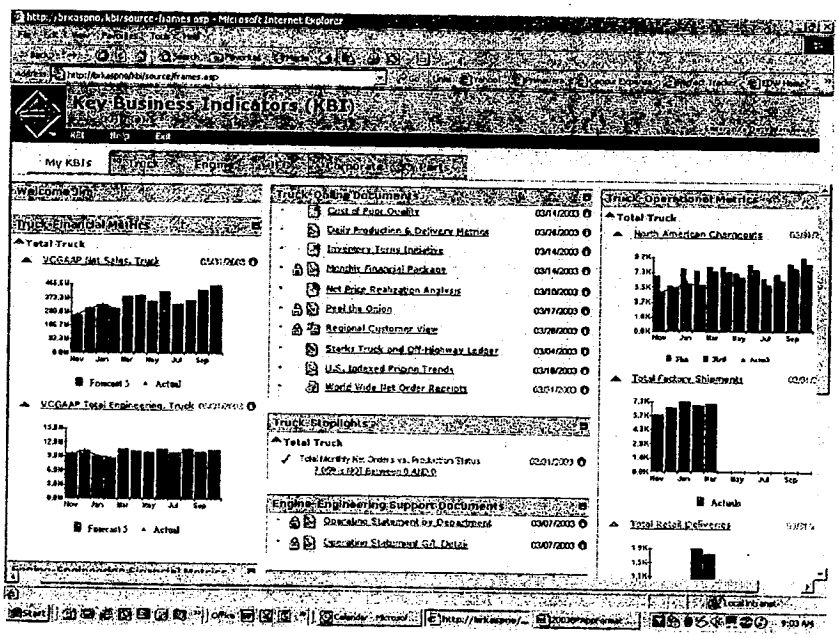
Layered Views

Chapter 1 described how performance dashboards have three layers of information: a graphical summary view, a multidimensional view, and a transactional view. This section shows how International Truck and Engine created these three layers within its KBI portal.

Top-Level View

Exhibit 8.1 shows the home page of International Truck and Engine's tactical dashboard, which was created in-house using Web software. Essentially, it is a Web

EXHIBIT 8.1 HOME PAGE OF A TACTICAL DASHBOARD



International Truck and Engine's tactical dashboard is a Web portal that groups critical metrics within six tabs. Each page shows a few key metrics, documents, and alerts and gives users the ability to drill down into metrics for more detail.

Source: Copyright © 2005 International Truck and Engine Corporation. Reprinted with Permission.

portal that gives the company's financial managers all the information they need to keep tabs on the company's operations, among other things. The KBI portal provides a separate tab for each division in the company, including a MyKBI tab that lets users select metrics and documents from a predefined list they are authorized to see. They can then place the objects in one of three columns on the screen and position them vertically based on their preferences.

The metrics on this home page use bar charts to display data and trends rather than symbols to convey state of the business or process (i.e., good, bad, or normal). This is one major difference between a tactical and a strategic dashboard: tactical dashboards focus more on performance data while strategic dashboards focus more on performance state. However, International Truck and Engine's bar charts do provide a barely visible trend line that compares actual data with plan, but this is not the dominant feature of the charts.

The middle column in the dashboard home page lists reports and documents in a variety of formats (Excel, PDF, Word, and HTML), which gives the tactical dashboard more of a portal feel compared with operational or strategic dashboards. Some of the documents are secured, requiring a password to view them. Below the documents is an alert, titled "Total Truck," showing that truck revenue is not meeting targets. Users can click on the alert and bring up a "report," which is actually a chart and table that helps them begin to figure out how to handle the situation. Whereas most operational dashboards provide alerts, few tactical dashboards do, making International Truck and Engine's site an exception to the rule.

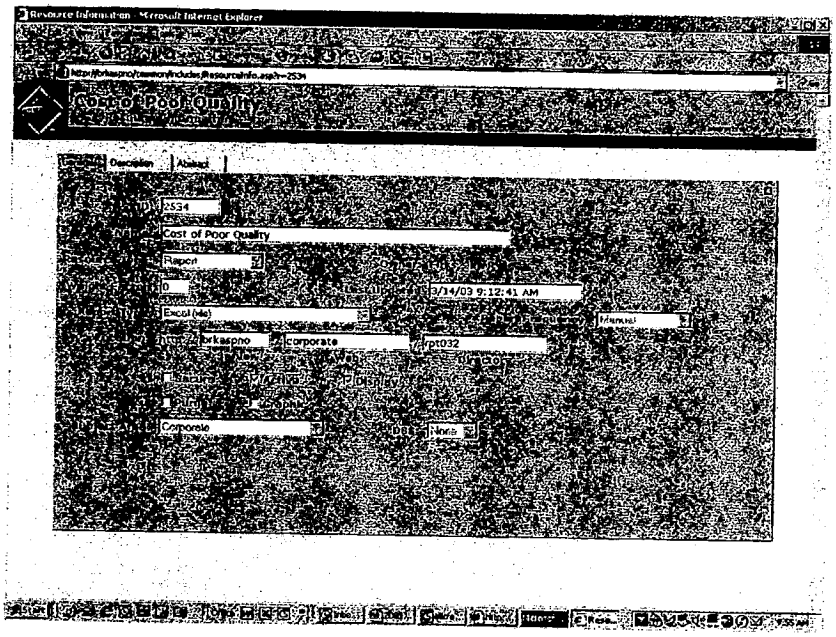
Descriptive Properties

International Truck and Engine does a good job of providing descriptive information about the objects in the KBI portal. These descriptions help users better understand the origins and makeup of a metric or report. Each object on the screen, including documents and alerts, is time-stamped to show when it was last refreshed. By clicking on the blue circle to the right of the time stamp, which has an "i" in it that stands for "information," users can check an object's descriptive properties—what IT professionals call metadata—such as the name of the object or report, the name of the business owner of the object or report, when it was last refreshed, output format, location, text description, and other details (see Exhibit 8.2).

Second Level

To explore an individual metric in more depth, users click on the metric's hyperlinked title to open an online analytical processing (OLAP) tool that lets users "slice and dice" the data dimensionally. The tactical dashboard makes this transi-

EXHIBIT 8.2 DESCRIPTION PAGE



The International Truck and Engine Corporation provides information (or "metadata") about the metrics and objects in the tactical dashboards, as shown above.

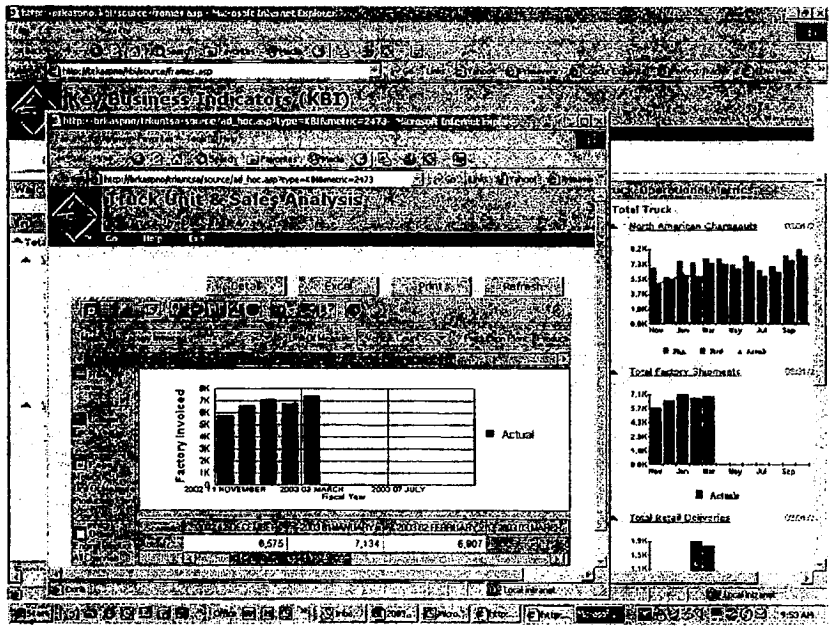
Source: Copyright © 2005 International Truck and Engine Corporation. Reprinted with Permission.

tion from custom portal to commercial OLAP tool seamless to users. They do not need to do anything but click on a hyperlink to switch between the two.

Exhibit 8.3 shows a chart of the number of factory-invoiced vehicles for the past five months. To view factory-invoiced shipments for a specific plant, the user clicks on the "Production Plant" filter above the chart and selects a plant. Also, the manager can change the row and column filters to view the data by a different distribution channel, fiscal year, region, and so on. The manager can also change the metric calculation from count to revenue or margin.

When users find a chart or view they think is meaningful, they can hit the "print" button above the OLAP menu bar to print the view in PDF format. They can also hit the "refresh" button to update the data in the view or click on the "Excel" button to output data to an Excel worksheet for further analysis.

EXHIBIT 8.3 SAMPLE ANALYTICAL SCREEN



Users can drill down from the front page of the dashboard to an analytical screen that lets them change perspectives on the data, a technique known as "slicing and dicing."

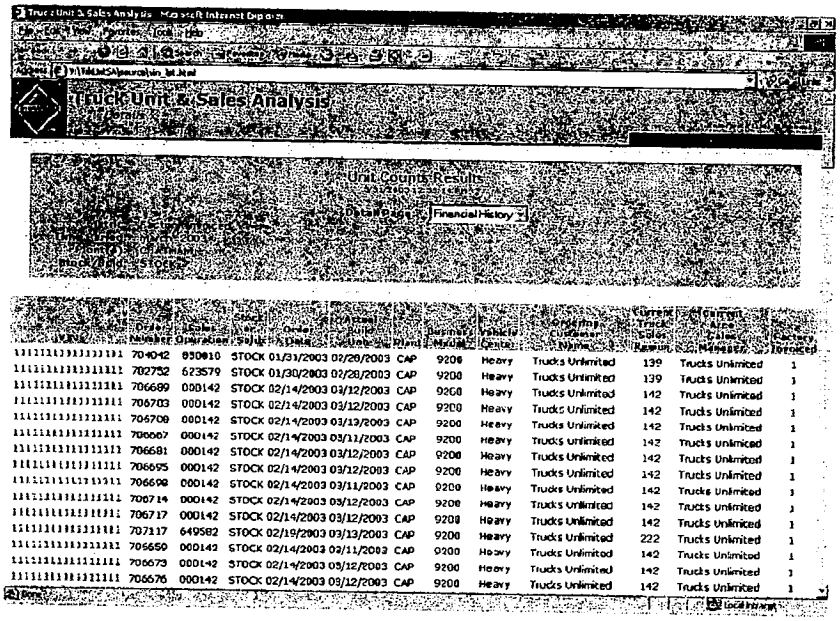
Source: Copyright © 2005 International Truck and Engine Corporation. Reprinted with Permission.

Third Level

Most importantly, if users still have questions about the shipments in a specific plant, they can click the "Detail" button to display individual transactions at a plant for a given time period. Because transaction data are stored in International Truck and Engine's data warehouse, not the OLAP cube that powers the analytical screen, the system redirects the query to the data warehouse and displays the data in tabular format in a separate window (see Exhibit 8.4).

Again, this context shift from an OLAP tool to an SQL database happens transparently to end-users, and the SQL is generated automatically. Users do nothing but wait about five seconds or so for the query to return, which is very fast considering that International Truck and Engine's data warehouse is two terabytes in size. They can then drill further into the data warehouse information by

EXHIBIT 8.4 DRILL THROUGH TO TRANSACTION DATA



The International Truck and Engine Corporation lets users drill from the analytical screen in Exhibit 8.3 to a detailed view of data, shown above. (The data in this chart are scrambled.)

Source: Copyright © 2005 International Truck and Engine Corporation. Reprinted with Permission.

clicking on an individual truck's vehicle identification (VIN) number to bring up the order information and building specifications for that truck.

The challenge for International Truck and Engine is to homogenize the views in each of its three performance dashboard layers. Currently, each layer has a very different look and feel and different ways of manipulating information. If it blends these three layers into a coherent whole, it will make the system easier to use and reduce training requirements.

Guided Analysis

Natural Navigation

Because of their multitiered delivery of data, dashboards naturally guide users from higher level to more detailed views of data. This built-in navigation pro-

vides a basic form of guided analysis that is sufficient for many users. However, some organizations want to provide even more structured navigation to prevent users from getting lost in the data and submitting poorly designed queries that return incorrect results. These organizations want to accelerate "time to analysis" and effective decision making by minimizing the number of clicks users need to make to discover relevant data.

One financial services firm based in Boston uses hyperlinks embedded in the data to guide users. For instance, a profit/loss report might show columns of data for expenses, revenue, and headcount, each of which is hyperlinked. Clicking on expenses pivots the data and presents an expense-appropriate view. From there, users can click on a business unit to view expenses for that unit, and so on. In essence, the hyperlinks help define how users navigate from one screen or view to the next.

"Our dashboard is set up to present very business-specific views of information. The business thinks of expenses in a very specific way and they want to make sure that anyone who looks at that information is seeing it from their perspective so there is no confusion. That's what guided analysis does. It forces a path, yet gives them flexibility so they can change direction as they pass along the way," says the company's director of financial reporting and analysis.

The Limits of a Web Interface

In addition, the Boston financial services firm does not want managers or executives to drill down to infinite layers of detail because they don't want them to get lost in the data. "We don't want to overwhelm users with too many navigation options and dimensions to explore. So, we lead managers to an appropriate place and level of detail but then we expect them to call their business analyst to do additional analysis, if necessary," says the BI director. He added that the company's business analysts use a more sophisticated analytical tool that runs against the same data as the tactical dashboard used by the managers and executives.

Externalized Guidance

Other companies offer guided analysis that is more externalized, a kind of online help desk to assist users in selecting the next report to view. Direct Energy Essential Home Services, for example, takes this approach. Its guided analysis uses decision trees to step users through a series of "yes/no" questions to identify appropriate reports to view based on the content of the data they are viewing. For example, if the ratio of closed to pending sales is low in a sales revenue report, users can use a decision tree to find a "sales pending" report, read its description, and launch the report, if desired (see Exhibit 6.8 in Chapter 6).

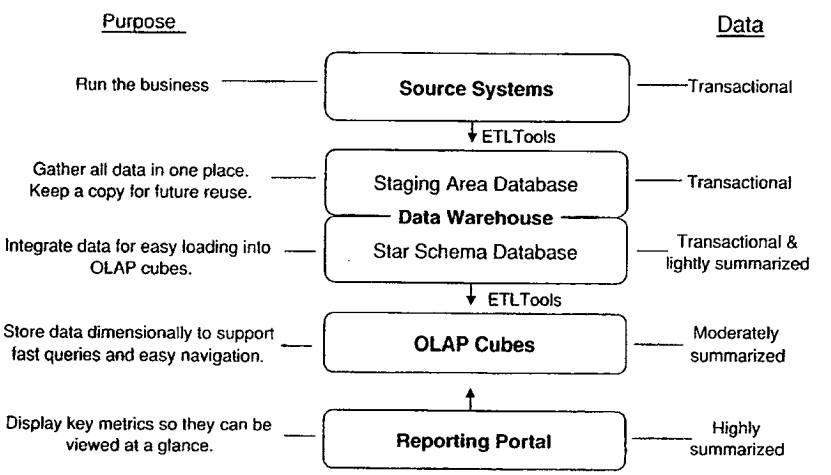
Architecture of a Tactical Dashboard

The architecture that International Truck and Engine uses to support tactical dashboards is similar to Quicken Loans' architecture except that it does not support the "real-time" components, namely, the real-time data store and ODS. International Truck and Engine uses a data warehouse to standardize and integrate information from across the company as well as OLAP cubes and a reporting portal to deliver the information to users in a highly intuitive format that is easy to navigate and exceptionally fast (see Exhibit 8.5).

Back-End Systems

Specifically, International Truck and Engine's BI architecture collects source data and then loads the data in their original format into a relational database, which is the *staging area* for the data warehouse. It then uses a commercial extraction, transformation, and loading (ETL) tool to clean, validate, and integrate the source

EXHIBIT 8.5 INTERNATIONAL TRUCK AND ENGINE'S ARCHITECTURE



The diagram above shows a high-level view of International Truck and Engine's KBI portal architecture, along with the purpose of each layer in the architecture and the type of data that it maintains. This is typical of most BI architectures.

data and load them into another relational database, modeled as a star schema, which speeds query processing (see Chapter 3 for information on star schemas).

Front-End Systems

Once the data are in a star schema format, International Truck and Engine distributes subsets of the data to *OLAP cubes*, which are designed to support specific applications, such as the KBI portal among others. The OLAP cubes contain summary level data, not transaction-level detail, which is kept in the data warehouse. OLAP cubes are optimized to provide fast response times to a series of rapid-fire queries, such as "Let me see revenues by product for the northeast region" followed by "Let me see margins by product SKU in the Boston office." When users hit the bottom of the cube and seek more detailed data, the cube seamlessly queries the data warehouse and displays the data for the user.

The report portal contains the highest level metrics, which are static images of charts culled from the OLAP cubes. When users log in to the KBI portal, the charts and other objects in their views are automatically refreshed to reflect the most recent data and updates.

Levels of Summarization

International Truck and Engine uses a classic BI architecture to aggregate data at different levels of detail and support different types of analysis: the KBI portal home page provides highly summarized data and views of metrics; the OLAP cubes provide lightly summarized data and multidimensional views of the data; and the data warehouse provides transaction-level data for detailed examination.

CHALLENGES

The delivery of effective tactical dashboards presents many challenges; most of them revolve around creating a BI infrastructure that consolidates and integrates data from multiple data sources and standardizes definitions, rules, and metrics.

1. Perceptions

The first problem that companies encounter is convincing executives that they need to build a BI infrastructure to support the kind of analysis they desire. Some think that operational reports or Excel-equipped business analysts are sufficient to meet the organization's information needs. Others have tried data warehousing and been burned by a runaway project that cost too much, took too long, and never delivered value. "Data warehousing is a dirty word in our organization," says one

BI manager. "To get funding, we focus on business benefits that we will deliver and we avoid using that term."

2. Standardizing Terms

A more difficult challenge is standardizing the meaning and rules for shared metrics, such as "gross sale," "net margin," "profit," shared reference data, such as customer, product, or on-time delivery. Many business units are wedded to their view of the world and do not want to change. Sometimes the only way to get different business units to agree on standard definitions and terms is for the CEO to lock them in a room until they reach a consensus.

"Because we had so many sources of customer information, I finally had to stop the press, get some people in the room and ask, 'What is a customer?' It took me about a year to come up with a concise, comprehensive definition that everyone agreed with," says Wanda Black, director of information resource management at a privately held manufacturing firm.

Although it is important to have corporate standards for critical metrics and rules, this does not mean that local groups have to forfeit their way of looking at data. The company can give each business group its own data mart that preserves its view of the world as long as its data come from the enterprise data warehouse and its definitions can be mapped from local definitions to corporate standard.

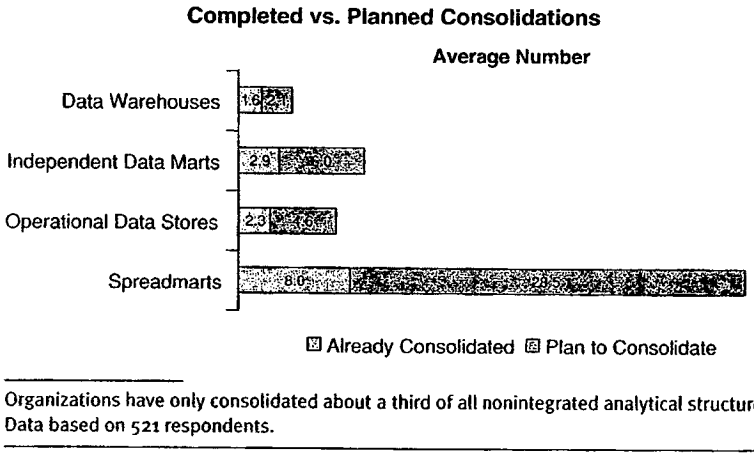
3. Consolidating Analytical Systems

Part of the standardization process usually involves consolidating renegade and redundant analytical systems, which is often a never-ending task. Research shows that companies need to consolidate on average 2.1 data warehouses, 4.5 operational data stores, 6.1 data marts, and 28.5 spreadmarts (see Exhibit 8.6). On average, it takes organizations three years to break even on a project to replace these structures with an enterprise data warehouse. However, the cost savings thereafter range from $2 million to $3 million a year in hardware, software, and staffing charges.

International Truck and Engine has an ongoing project called "Release X" that identifies reporting applications that overlap with its KBI portal and tries to shut them down. So far, International Truck and Engine has shuttered 40 of 66 reporting systems on its "hit list," but it keeps discovering new ones each week. "You have to be eternally vigilant," says International Truck and Engine's Rappé.

Sometimes converting users from other applications is easy. "Often, users don't know the KBI portal exists and they get excited when they see the functionality and level of detail it provides," he says. In other cases, however, users are reluctant to use the KBI portal if it does not contain all the data in their existing application. In those cases, Rappé adds the requested information to a requirements list,

EXHIBIT 8.6 ANALYTICAL CONSOLIDATION PROJECTS



Organizations have only consolidated about a third of all nonintegrated analytical structures. Data based on 521 respondents.

Source: Wayne Eckerson, "In Search of a Single Version of Truth" (*TDWI Report Series*, 2004).

which he includes in a future release. Once the release is issued, he notifies the group that the KBI portal is ready to meet its needs and then works with the group to convert to the new environment.

"Although we've saved money by turning off a number of systems, the benefits are more far reaching than the cost savings," says Rappé. "Once the KBI portal and data warehouse become better known throughout the organization, it causes groups to rethink the need to build an analytical application from scratch, which saves hundreds of thousands of dollars in development costs and licenses."

4. Rapid Development

To meet new and changing user requirements and stay ahead of analytical silos, the team responsible for delivering tactical dashboards must move quickly. They can no longer spend six to nine months developing new views or reports; they must deliver capabilities in days or weeks.

To accelerate development by an order of magnitude, companies must take an entirely new approach to developing analytical applications. This involves rethinking the way it gathers requirements, develops new functionality, and builds reports.

Instead of following a rigid set of steps to create a specification, developers need to work directly with end-users in a more iterative fashion. Developers need to

sit side by side with users and flesh out requirements in prototyping sessions rather than using hand-written specifications. They need to establish technical teams that specialize in building different aspects of the tactical dashboard architecture—the data warehouses, OLAP data marts, dashboard reports, ad hoc reports—so they can work efficiently and effectively with minimal overlap and maximum coordination. They also need to train power users in every department to create reports from standard templates on behalf of their colleagues.

Accelerating development also requires that technical teams centralize business rules for cleaning, integrating, and calculating data on a server instead of in report files that cannot be reused. In the same way, the teams need to standardize report components—charting engines, query engines, layouts, list boxes, user prompts, and so on—so each can be reused in subsequent applications instead of being created from scratch or purchased anew each time. The team then needs to wrap these components in a Web service so that any application can access them and consume their XML output. The use of Web services creates a plug-and-play services-oriented architecture that makes it easy for developers to add, change, or enhance applications instead of trying to foresee every possible user need in advance.

SUMMARY

Departmental and Daily. Tactical dashboards are designed so that managers and analysts can quickly view the information they need to manage a process or measure their progress toward achieving a local objective. Although tactical dashboards may include metrics derived from a company's strategic plan, they are usually focused on optimizing the effectiveness of a department or group. They usually update data on a daily basis, although some tactical dashboards will query source systems to supplement historical data with up-to-the-minute information.

Next-Generation Reports. Tactical dashboards, in essence, represent a new way of delivering reports. Old-style reports are too static and out of date to help users work proactively to drive the business. In contrast, the new generation of reports is interactive and detailed. Such reports let users track a few key metrics at a high level and then drill down to detail or switch to an adjacent subject area. Interactive reports let users take snapshots of the data at any level and publish these "views" to colleagues via e-mail or the Web. When given a dashboard or portal interface, there is little difference between interactive reports and tactical dashboards.

OLAP-Enabled Data Warehousing Architecture. The architecture for a tactical dashboard is a classic data warehousing architecture that extracts and integrates data from multiple source systems and delivers it to a target relational

database. More often than not, companies that deploy tactical dashboards use OLAP servers as data marts to deliver extremely fast performance so users can navigate information at the "speed of thought."

Robust Infrastructure Required. The main challenges in delivering successful tactical dashboards revolve mostly around creating a robust data warehousing infrastructure that supports a consistent view of key business terms and rules, such as "sales," "customer," or "net margin." Standardizing definitions can be political, but it is the first step toward consolidating information so that everyone in the company is working off the same data.

Rapid Development. It is also imperative that technical teams innovate new processes and techniques to accelerate the development of new features and data views to keep up with rapidly changing business questions and initiatives. Without rapid, iterative development techniques that can spit out new reports and views in days and weeks rather than months or years, a tactical dashboard will quickly become irrelevant, and users will search elsewhere to obtain the information they need.

CHAPTER 9

Strategic Dashboards in Action: Hewlett Packard Co.

On a sunny October day in 2004, about a dozen senior vice presidents from Hewlett Packard Co.'s Technology Solutions Group (TSG) discuss how to translate new strategic goals created by HP's Executive Council into tactical measures and initiatives for the group. The main thrust of the new corporate strategy is that increasing customer loyalty is the best way to drive future revenues. The Executive Council settled on this strategy after observing results in Hewlett Packard TSG's strategic dashboard and conducting further analysis that showed a direct correlation among customer satisfaction, customer loyalty, and revenue growth.

Proud of their contribution to the new corporate strategy, the Hewlett Packard TSG executive team discusses options to increase customer satisfaction and loyalty and measure the results better in their Balanced Scorecard, known as the Hewlett Packard Performance Measurement and Management System (PMMS). First, they come up with new initiatives to bolster customer satisfaction, such as overhauling automated telephone attendant programs, establishing a new account management model for top customers, and measuring customer satisfaction throughout the duration of a consulting engagement.

To measure customer loyalty better, as well as the impact of these new initiatives, the team decides to replace its current loyalty metric, which is based on blind surveys of customers conducted by a third-party market research firm, with an index that measures a variety of operational events known to affect customer satisfaction. To drive home the importance of the new strategy, initiatives, and measures, the team then decides to link the new loyalty metric and several operational metrics that drive it to Hewlett Packard TSG's incentive compensation plan.

Shortly after the meeting, all senior vice presidents communicate the new strategy, initiatives, and measures to their managers in each division and region of the group. Two weeks later, the new customer loyalty index appears on every Balanced Scorecard in Hewlett Packard TSG throughout the world. Just one quarter later, the Hewlett Packard TSG executive team sees a noticeable uptick in customer loyalty scores worldwide, and they soon expect to see a corresponding increase in revenues.

BENEFITS OF STRATEGIC DASHBOARDS

Hewlett Packard "Scores" Big

The above scenario is a far cry from the way Hewlett Packard TSG executives and managers ran the division before it implemented a strategic dashboard using a Balanced Scorecard methodology. Hewlett Packard TSG consists of Hewlett Packard's consulting, technology services, and software business units on a global basis.

The "Before" Scenario

Before 2001, the $12 billion division of Hewlett Packard had no means of consistently measuring regional and unit performance against company objectives and holding individuals accountable for the results. It also had dozens of reporting systems with overlapping or contradictory metrics that made it impossible for users to find performance data quickly and cost significant sums of money to maintain.

"The Balanced Scorecard is one of the most effective means of reinforcing Hewlett Packard TSG's vision and business strategy and translating it into information that people can act on," says Martin Summerhayes, a program director at Hewlett Packard TSG who spearheaded the project, which has generated a three-year $26.1 million return on investment and vastly improved individual and group performance and accountability. "It's true that what gets measured, gets done. And we reinforce this by basing compensation in part on Balanced Scorecard results."

Single Version of Truth

Hewlett Packard TSG's strategic dashboard (the PMMS) provides a single place where executives, managers, and supervisors at all levels within Hewlett Packard TSG can check the status of their group's performance against strategic objectives and examine detailed reports about exception conditions. The solution offers a single, easy-to-use Web interface that puts critical data one click away

from all users, enabling them to make better and faster decisions. PMMS now displays 100 metrics that provide a single view of the business for 8,700 Hewlett Packard TSG employees throughout the world.

Cascading Scorecards

The strategic dashboard is more than just an "executive scorecard," although that is how it was first deployed in 2001 in the Europe, Middle East, and Africa (EMEA) region. Since then, Hewlett Packard TSG has rolled out the strategic dashboard to each of the division's four worldwide operating regions at multiple levels within the organization, sometimes down to individual field offices where a supervisor may manage a dozen engineers. Each scorecard in this hierarchy is linked to the one above it so performance metrics roll up from the bottom to the top of the organization. The performance information is widely publicized so users and groups can compare their performance with that of others at their level and below.

More Than a Pretty Face

PMMS is also more than just a scorecard of summarized performance results. It also provides analysis and reporting layers common to all performance dashboards, enabling users to explore performance results and examine detailed reports, if they desire. As a result, PMMS now meets the information needs of 80 to 90 percent of the division's employees and has significantly improved worker productivity and accountability.

"Managers and supervisors no longer waste time creating custom reports using ad hoc business intelligence (BI) tools, and they can't 'spin' the numbers to make their performance look better than it is. And because everyone across all business units and regions can see the results, people are more motivated to do well," Summerhayes says.

Tangible Benefits

In 2004, Hewlett Packard TSG's strategic dashboard generated $20.5 million in cost savings on $1 million total expenditures. Specifically, Hewlett Packard TSG saved $10.6 million by increasing worker productivity, primarily by reducing the time several thousand Hewlett Packard TSG employees spend looking for reports and information each month; it reduced training costs by $1.3 million because it no longer had to spend $5,000 per user to train a worker in the use of ad hoc BI tools; and it reduced reporting costs by $8.6 million by shutting down dozens of reporting systems that overlapped with PMMS.

Although these gains have made Hewlett Packard TSG more efficient internally, the strategic dashboard has also helped the company make strides toward achieving its strategic objectives. For example, since the introduction of PMMS, Hewlett Packard TSG has raised its customer satisfaction scores three to five percentage points in its four major divisions. It has also reduced the number of missed service-level commitments—a key metric at Hewlett Packard TSG—by an order of magnitude.

BALANCED SCORECARDS

Top-Down Deployment

Hewlett Packard TSG's strategic dashboard uses the Balanced Scorecard methodology. Although there are many methodologies that organizations can use to create strategic dashboards, the Balanced Scorecard is by far the most popular today.

As discussed in Chapter 6, the primary goal of a strategic dashboard is to align individual and group activities to a company's vision and strategy. Unlike operational or tactical dashboards, strategic dashboards are generally implemented in a top-down fashion, starting with top executives and working their way down to the lowest levels of the organization. However, strategic dashboards sometimes originate within divisions or regions and then expand to the enterprise, which is what occurred at Hewlett Packard TSG.

Monthly Updates

In addition, strategic dashboards are generally updated monthly, reflecting the strategic nature of the metrics and data they deliver. This was initially true for Hewlett Packard TSG's strategic dashboard, but as it cascaded scorecards throughout the regions and down multiple levels in the organization (i.e., region, subregion, country, district, and office), it added many operational metrics that are updated daily or weekly.

Methodology

The Balanced Scorecard methodology has gained great favor among corporate executives in the past 10 years. As originally conceived by Robert S. Kaplan, professor at Harvard Business School, and David P. Norton, president of the Balanced Scorecard Collaborative (BSC), Balanced Scorecards provide executives with a more "balanced" set of metrics beyond financial measures to evaluate intangible assets more accurately, predict future performance better, and balance short- and long-term business objectives.

In its most elemental form, the Balanced Scorecard is a performance measurement system that calls for balancing measures: financial and nonfinancial,

external and internal, short-term and long-term, historical and future, and quantitative and qualitative across multiple facets of the business.[1] A classic Balanced Scorecard groups objectives and metrics into four major perspectives: financial, customer, learning and growth, and internal processes (see Spotlight 9.1).

SPOTLIGHT 9.1 BALANCED SCORECARD METRICS

A Balanced Scorecard, as defined by Robert S. Kaplan and David P. Norton, groups objectives, measures, targets, and initiatives into four perspectives: financial, customer, learning and growth, and internal processes. However, some organizations create their own perspectives that align more closely with the way they run their business.

Financial Perspective. The Financial perspective contains measures that indicate whether a strategy is achieving bottom-line results. Financial metrics are classic lagging indicators. The more common ones are:

- Profitability
- Revenue growth
- Economic value added

Customer Perspective. The Customer perspective defines the organization's target customers and the value proposition it offers them, whether it is efficiency (low price, high quality), innovation, or exquisite service. Most customer metrics are lagging indicators of performance, as follows:

- Customer satisfaction
- Customer loyalty
- Market share, "share of wallet"

Internal Process Perspective. Delivering value to customers involves mastering numerous internal processes, including product development, production, manufacturing, delivery, and service. Organizations may need to create brand new processes to meet goals outlined in the Customer perspective. Common metrics are:

- Patents pending, ratio of new products to total products
- Inventory turnover, stockouts
- Zero defects, on-time deliveries

Learning and Growth Perspective. This perspective measures the internal resources needed to drive the other three perspectives. These include employee skills and information technology. Typical metrics are:

- Employee satisfaction, turnover rate, absenteeism
- Training hours, leadership development programs
- Number of cross-trained employees, average years of service

Most executives quickly discover that the Balanced Scorecard methodology is more than a performance measurement system; it is also a strategic management system that they can use to execute strategy and manage organizational performance. Kaplan and Norton now describe the Balanced Scorecard as a tool to create a "strategy-focused organization"—in which strategy becomes the driving force of organizational activity and communication. The Balanced Scorecard focuses the energy of an organization into achieving strategic goals and objectives that are represented by key performance indicators (KPIs) customized to every group in the company.

According to the BSC, there are five principles that distinguish strategy-focused organizations. The BSC is a professional services firm that promotes and enhances the Balanced Scorecard and assists companies in becoming strategy-focused organizations. The five principles, which are described on the BSC web site (www.bscol.com), are as follows:[2]

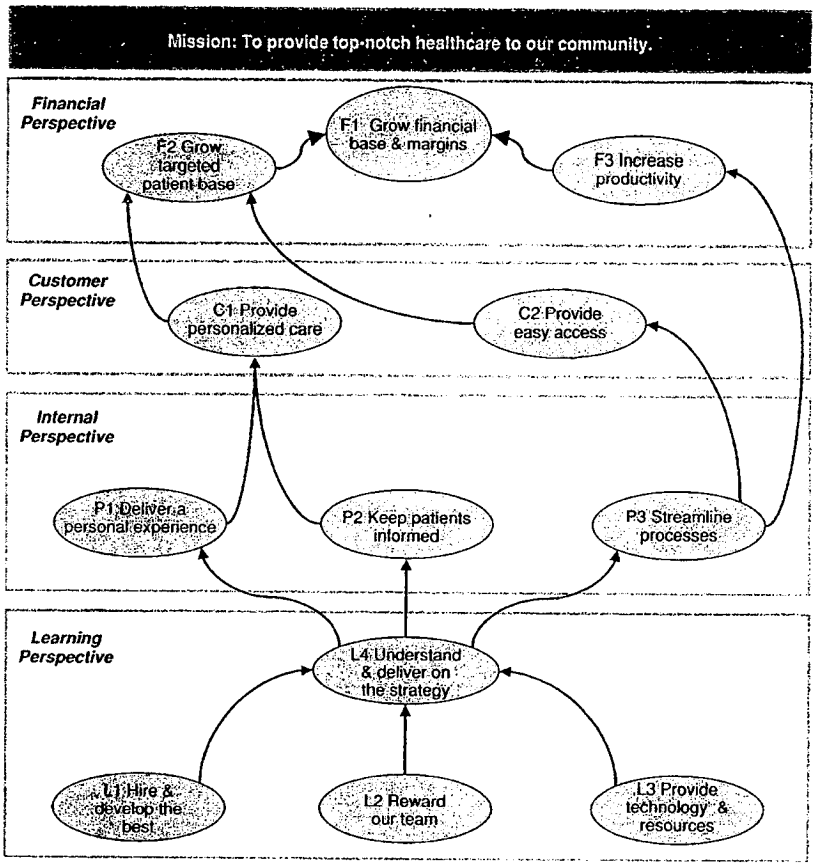
1. **Translate the strategy into operational terms.** A Balanced Scorecard is not a list of measures, it is a description of an organization's strategy. One hallmark of a strategic dashboard—unlike most operational and tactical dashboards—is that you can discern the company's strategy by examining the objectives and metrics in it. Organizations define objectives and metrics using a strategy map, which has become an integral part of the Balanced Scorecard methodology (see Exhibit 9.1).

   A strategy map defines and depicts a series of cause-effect linkages among objectives in the four perspectives. These linkages define executive assumptions about resources and processes that drive customer value and financial results. The strategy map makes it easy for executives to see whether something is missing from their strategy and to test their assumptions once the scorecard is populated with data.

2. **Align the organization to the strategy.** The next step is to align the rest of the organization to the strategy defined in the corporate scorecard. This is usually done in a top-down manner, starting with the executive office of the company, a division, or a functional group (i.e., finance or sales). Once completed, the corporate scorecard becomes a template and reference point for managers at the next level to create their own scorecards. These lower level scorecards contain objectives and metrics that influence the objectives and measures in the scorecard one level above. This process continues down through successive levels of the organization until all groups and individuals are aligned through a cascading network of interlocking scorecards.

3. **Motivate the organization by making the strategy everyone's job.** In a knowledge economy, executives must educate everyone in the company about the strategy so they know what it is and how to execute it. This is done in three ways. First, organizations need to establish a formal mar-

EXHIBIT 9.1 A STRATEGY MAP



A sample strategy map for a healthcare organization.

Source: Reprinted with permission from "Align the IT Resource with Organization Strategy," keynote presentation by Robert S. Kaplan, TDWI BI Strategies Summit, May 2004.

keting and communications plan for the initiative, using every opportunity to communicate the purpose and benefits of a Balanced Scorecard to each constituency in the company.

Second, organizations must empower users to create their own scorecards and define the objectives and measures that they deem will have the greatest impact on overall strategy. Instead of telling workers what to do, executives and managers must seek their input because workers often know

the best ways to get things done in the trenches. Last, companies should tie compensation incentives to scorecard metrics to get the attention of workers. However, executives should proceed cautiously on this score until there is general consensus around the validity and accuracy of metrics and objectives in the scorecards.

4. **Learn and adapt to make the strategy a continual process.** Organizations need to embed the Balanced Scorecard into the fabric of the organization. The first place to start is to use the strategy to drive the annual budgeting and planning process instead of the other way around. Executives should reference the Balanced Scorecard when prioritizing initiatives and allocating financial and staff resources for the coming year. There are now many techniques to accomplish this, including continuous budgeting and rolling quarterly plans.

   Second, the executive team should use the Balanced Scorecard as the agenda for the monthly performance meetings and as a central place for business unit and department heads to record comments about performance results. Inevitably during these meetings, executives and managers will discuss the assumptions behind the Balanced Scorecard—whether the objectives and metrics accurately capture the company's strategy and correlate with financial results. These discussions help managers better understand the nature of their business, the strengths and weaknesses of their strategy, and what levers to pull under what conditions to influence performance.

5. **Mobilize change through executive leadership.** The Balanced Scorecard alone will not instigate the changes required to ensure that an organization achieves its strategy. Strategy by definition describes a destination that the organization strives to reach but has not yet. Besides a Balanced Scorecard, executives need to craft a compelling vision of the future state of the organization toward which everyone is heading. They also need to assemble a leadership team that knows how to execute knowledge-based strategies and that values the timely delivery of information. Finally, they need to make bold changes in the way the company is organized. Often, this means abolishing functional silos and restructuring the company around strategic themes or value-chain processes that align with its core value proposition to customers.

DEPLOYING STRATEGIC DASHBOARDS

Preparing the Organization

The BSC has published dozens of case studies of organizations that followed the five principles above to transform themselves into "Strategy-Focused Organizations." A common characteristic of these organizations is that they see major

business value improvements within two years of deploying a strategic dashboard and additional benefits as the footprint of the system increases inside the organization. This is exactly what happened with Hewlett Packard TSG.

The project team that deployed the initial strategic dashboard in Hewlett Packard TSG's EMEA region has been turned into a program office that makes the system available to other groups in Hewlett Packard TSG at their request. To date, the team has rolled out new versions of the strategic dashboard in each of the division's four regions using the same application platform and BI infrastructure that it developed for EMEA. The team is now helping the regions drive the strategic dashboard to lower levels of their organization and expects to do the same for the rest of Hewlett Packard in the future.

Prior to rolling out the strategic dashboard worldwide, the program team gathered senior executives together to hash out guiding principles for the global initiative (see Spotlight 9.2). The aim was to ensure that each regional group implemented the strategic dashboard in a uniform fashion with predictable results. More importantly, the program team wanted each group to use identical metrics for key value drivers linked to the division's overall strategy so executives could compare performance across regions and groups. Standardizing these metrics proved to be a considerable challenge; it required executives to harmonize dozens of measures into a few standard ones that could be used worldwide.

SPOTLIGHT 9.2 GUIDING PRINCIPLES AT HEWLETT PACKARD TSG

Prior to rolling out its strategic dashboard, senior executives at Hewlett Packard TSG hashed out 12 principles to guide the global rollout of the strategic dashboard. They are:

- **Evangelize the initiative.** Senior executives should add to their list of roles and responsibilities the requirement to be a positive advocate for the initiative.
- **Make it pervasive.** Drive use of the strategic dashboard to all levels of the organization, not just senior leadership.
- **Manage it centrally.** Develop and maintain the strategic dashboard as a centralized system, using a worldwide program team to manage and maintain the system, supplemented by regional and business unit teams to assist in regional deployments.
- **Link metrics to factors needed for success.** Devise metrics that reflect the key strategies that each group needs to focus on during the next three years.
- **Define high-quality metrics.** All metrics should be measurable, significant, consistent, and agreed to by all.
- **Have a balanced approach to measurement.** Do not just measure financials, but also customer satisfaction and loyalty, employee satisfaction, and other business needs.

SPOTLIGHT 9.2 *(CONTINUED)*

- **Metrics should consist of past, present, and future indicators.** Leading indicators signal future performance whereas lagging indicators report past performance.
- **Less is more.** Aim to have less than 20 metrics per scorecard.
- **Review and revise regularly.** Conduct regular reviews to make sure that scorecards and metrics are being used and kept in sync with corporate standards and strategy.
- **Share metrics across the organization.** Scorecards should contain both "shared" measures that exist in every scorecard and "local" measures that are unique to each organization.
- **Use as a basis for recognition and reward.** Once firmly established, the strategic dashboard should be a factor in bonus payments and other incentive programs.
- **Kill two processes for every new one.** Reports developed for the strategic dashboard should replace two or more existing reports or reporting systems.

These guiding principles helped the project team work quickly and effectively with other groups that wanted to use the strategic dashboard. The principles showed that top management stood behind the initiative and gave it considerable momentum throughout the division. They also provided a lever to push executives and managers to adopt new approaches for measuring and managing performance with which they may not be entirely comfortable.

Designing the Dashboard

Like other performance dashboards, strategic dashboards deliver data at multiple levels of granularity, starting with graphical indicators at the top level and detailed reports at the bottom level. Hewlett Packard TSG's strategic dashboard consists of two distinct Web-based applications to create this multitiered effect: Libra, which displays the top-level scorecard views and second-level time-series tables and charts, and Muse, a reporting system that delivers both interactive and standard reports.

Libra Scorecards

Libra scorecards display performance state and trends using colored arrows. The scorecards can be either "balanced" or "unbalanced." Balanced scorecards contain metrics in the four perspectives defined by Kaplan and Norton. The "balanced" scorecards are used primarily by higher level executives who need a more com-

prehensive view of organizational performance. The "unbalanced scorecards" generally consist of metrics in two perspectives only and are used by managers and supervisors who oversee lower-level business processes. Hewlett Packard TSG's strategic dashboard currently contains hundreds of scorecards used by different groups and individuals throughout the division.

Muse Reports

Muse contains a list of standard reports in a hierarchy of folders available to users over the Web. Muse did not start as a full-fledged reporting system, although it is turning into one. Muse currently stores data in OLAP cubes, like Libra. Initially, Muse only extracted data for metrics in Libra when performance was below target for a given period. Today, Hewlett Packard TSG is expanding Muse to contain much lower levels of operational data and support daily operational reporting. Muse's reporting scope will undoubtedly continue to expand as more groups and users within Hewlett Packard start relying on PMMS as their primary reporting and analysis tool. It is moving towards becoming a full-fledged data warehousing environment.

Libra and Muse run independently of each other but are seamlessly integrated, allowing users to drill down seamlessly from the graphical summary view to operational details. Executives often can view Libra data without accessing Muse, whereas lower level managers often access Muse reports directly, bypassing Libra. Let us look at sample screenshots from Hewlett Packard TSG's strategic dashboard to get a better feel for how the performance management system works.

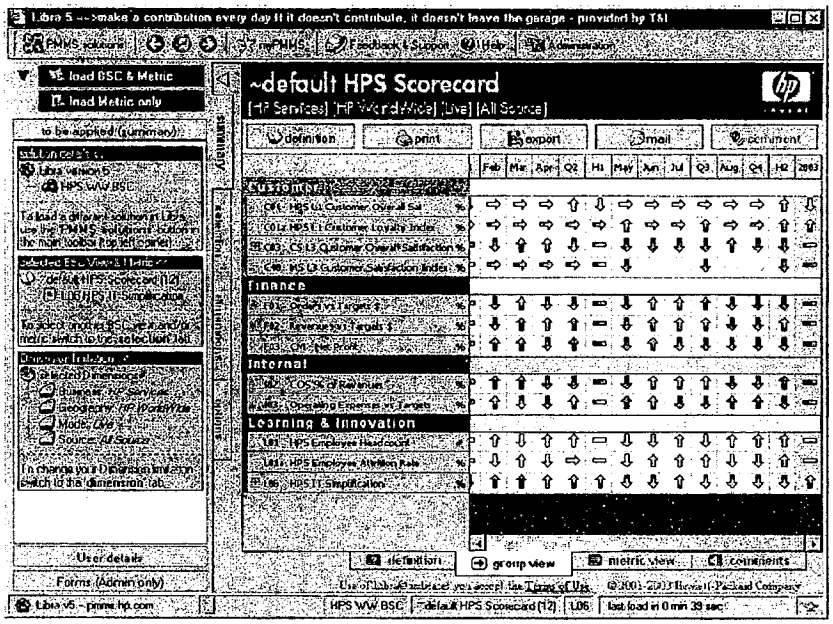
Top-Level Scorecard View

Exhibit 9.2 shows the top-level scorecard view of Hewlett Packard TSG's strategic dashboard. The scorecard divides the metrics into the four classic Balanced Scorecard perspectives: customer, finance, internal, and learning and innovation. Each perspective has between two and four metrics, allowing executives to view the status of all key areas in one glance (and staying within the company's 20-metric limit per scorecard). However, some metrics have sub-metrics, indicated by the "+" sign to the left of the metric title.

Arrows

Hewlett Packard TSG uses colored arrows to indicate monthly performance status for each metric. The color of the arrow indicates whether performance is above or below a predefined target. These targets are established by senior managers or executives on the basis of budgetary goals, external benchmarks, or fore-

EXHIBIT 9.2 TOP-LEVEL VIEW OF A BALANCED SCORECARD



The front page of HP Services strategic dashboard conforms to a classic Balanced Scorecard approach with metrics grouped into four perspectives. (Data do not reflect actual performance.)

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casts based on past performance. Managers set baseline targets and aspirational (i.e., "stretch") targets. Most goals are defined within the administrative menu of the scorecard application. Some budgetary goals are loaded into the scorecard directly from the planning or budgeting application, which are primarily Excel spreadsheets.

A red-colored arrow indicates that performance is below the baseline target, a green-colored arrow indicates that performance is above target but below the aspirational goal, and a blue arrow means that performance exceeds the aspirational goals. (Dashes indicate that no comparison data are available, and white arrows indicate that executives have not yet defined a target for the metric.) "We have no yellow arrows because you are either performing as expected or not. But

we encourage exceptional performance and high motivation, which is why we use blue arrows," says Summerhayes.

The direction of the arrows indicates performance trends. For instance, a sideways arrow pointing to the right indicates that performance has remained relatively unchanged for the past month or quarter depending on the measurement frequency. An arrow pointing up or down indicates that performance has increased or declined by a predefined percentage. Each metric uses a different percentage to calculate positive or negative trends. To see numbers instead of arrows, users can make their cursors hover over an arrow or change the scorecard's settings to display only numbers or numbers and arrows.

The combination of arrows and colors delivers a lot of information at a glance. For instance, a green arrow pointing down means performance is above target but trending in the wrong direction, which might prompt managers to explore this metric in more detail. Conversely, an upward trending red arrow may show that work done last month to correct a problem is already paying off although performance is still not up to snuff.

Other Features

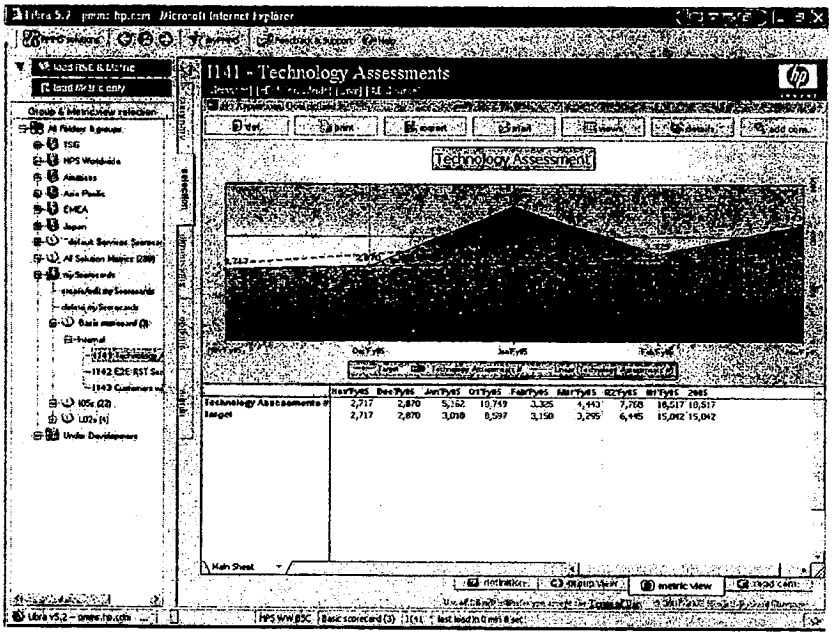
The scorecard view lets users click on the "definition" tab above the main panel to view the properties of a metric, such as who owns it, where the data came from, when it was refreshed, how it was calculated, and so on. In the same way, users can also print the screen, export it (to Microsoft Excel, HTML, JPEG, or PowerPoint), e-mail it to a colleague, or add a comment to a metric. In addition, users can create a customized version of the scorecard (MyPMMS), provide feedback to developers, or get online help.

Second-Level, Multidimensional View

To analyze and explore data behind the arrows, users click on the name of the metric and the system loads data for it, usually as a chart or table that shows monthly performance data compared with both target and aspirational goals. In Exhibit 9.3, a manager has "drilled into" a metric called "IT Simplification" and pulled up the past 12 months of performance data. A quick glance at the chart shows that the group had a major setback in November, then improved gradually during the next two months, and achieved its goals thereafter.

To change views of the data, users click the "View" button on the menu bar or the "selection" and "dimensions" tabs on the left-hand side. Here, users can view the data by geography, time, or business unit. Unbalanced scorecards, which display metrics for only one or two of the business perspectives, support additional dimensions, such as customer, partners, products, and channel.

EXHIBIT 9.3 SECOND-LEVEL VIEW OF PERFORMANCE METRICS



Hewlett Packard TSG's strategic dashboard lets users drill down from an iconic graphical view of key metrics to interactive charts and tables. (The data do not reflect actual performance.)

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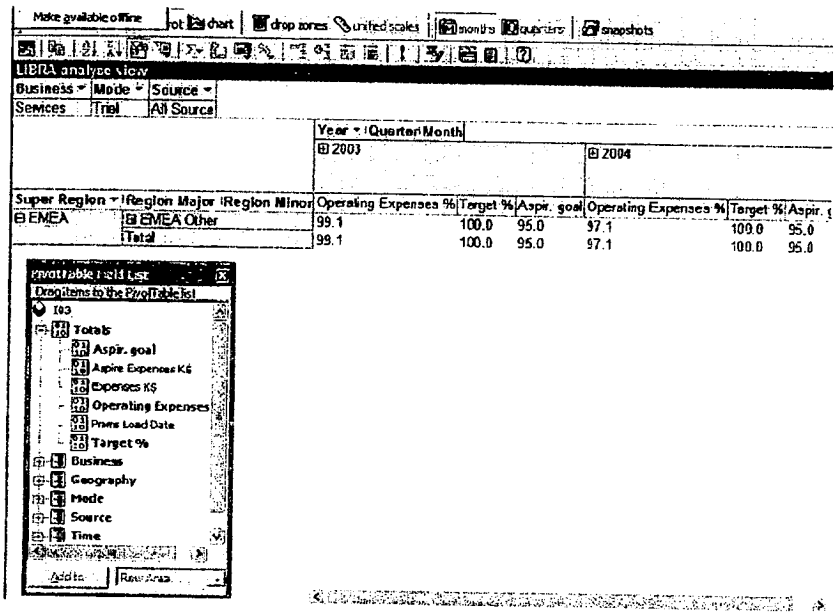
Third-Level Detailed View

Spreadsheet View

To drill into more depth, users can click the "Detail" button on the top menu bar, which either displays the data in a spreadsheet or connects the user to the Muse reporting system. The spreadsheet view loads data into pivot tables or pivot graphs that let users swap rows and columns, change chart types, filter and sort the data, or insert new columns. In short, the spreadsheet view lets them "slice and dice" in a familiar spreadsheet context. Users can also export data to their desktops as Excel files or JPEG charts (see Exhibit 9.4).

EXHIBIT 9.4 PIVOT TABLE VIEW



By clicking on the detail button, users interact with data in a pivot table or pivot chart (i.e. spreadsheet) within a Web browser. Users can export these data and view them on their desktop for offline analysis. Data do not reflect actual results.

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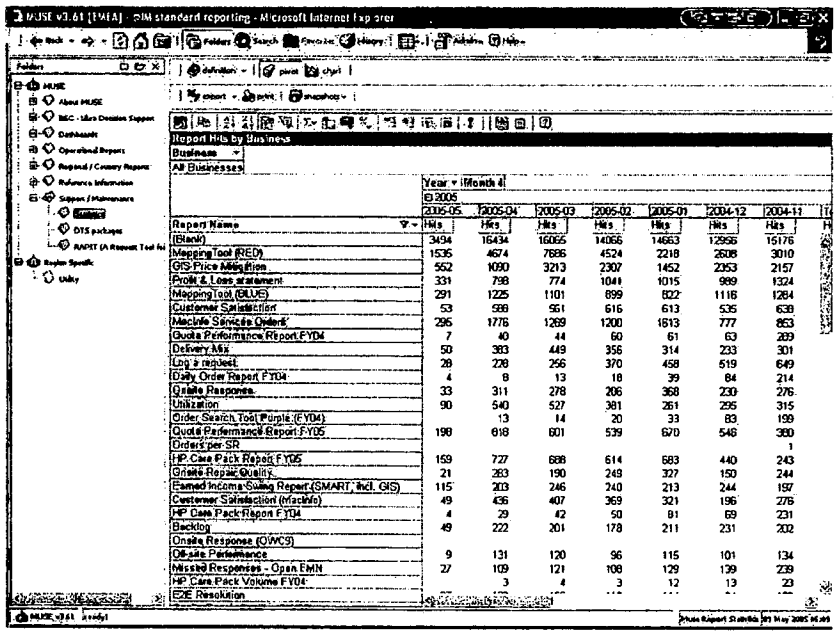
Muse Reports

The link to the Muse reporting system allows users to go the Muse home page or directly to a report related to the data they were viewing. Although this is a context shift for users—from Libra to Muse—the switch is made transparently to them. The system automatically passes query parameters to Muse, which brings up the appropriate report among the hundreds it maintains (see Exhibit 9.5).

Although Libra and Muse OLAP servers are located in different data centers, users never know they have switched between two different systems. Like International Truck and Engine, Hewlett Packard TSG's challenge is to blend the look and feel and functionality of all three layers into a more homogenous whole to make the system easier to use and reduce training.

EXHIBIT 9.5 A MUSE REPORT



Hewlett Packard TSG's strategic dashboard provides users with transparent access to detailed reports, such as the one above, which also uses online, interactive pivot tables to display detailed data stored in OLAP cubes. (Data do not represent actual results.)

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Muse is a "one-stop shop" for reports and files, sparing users from having to spend hours looking for the right report. The data come from the same sources as Libra, thus ensuring that everyone is working from the same set of data, preserving a "single version of the truth."

Like Libra, Muse uses online analytical (OLAP) cubes, which enables users to "slice and dice" by multiple dimensions and drill down to detail. However, Muse stores more detailed data in the cubes and lets users drill through the "bottom" of a cube to more detailed data stored in a back-end relational database. In addition, Muse reports may display the data in many different formats—HTML, Excel, Brio, Business Objects, and so on. Developers publish reports (i.e. OLAP views) and other files to folders arranged in a hierarchical fashion, like Microsoft Explorer.

Architecture

Custom Coding

The PMMS team created the strategic dashboard by writing custom code using Microsoft .NET and leveraging Microsoft Office Web Components already installed on user desktops. Both Libra and Muse servers use Microsoft SQL Server for collecting and staging data, Microsoft Analysis Server to store data in OLAP cubes, and Hewlett Packard TSG's corporate portal to display graphical indicators.

The team decided to custom-build the strategic dashboard because at the time there were no commercially available tools that Hewlett Packard TSG felt were mature enough to deliver the functionality it needed. Also, by leveraging two in-house developers and existing equipment, the team spent just $370,000 to build and maintain the strategic dashboard during the first 12 months. In 2005, Hewlett Packard TSG expects to spend about $670,000 total, down from $1 million last year, reflecting greater economies of scale and fewer requests for new scorecards.

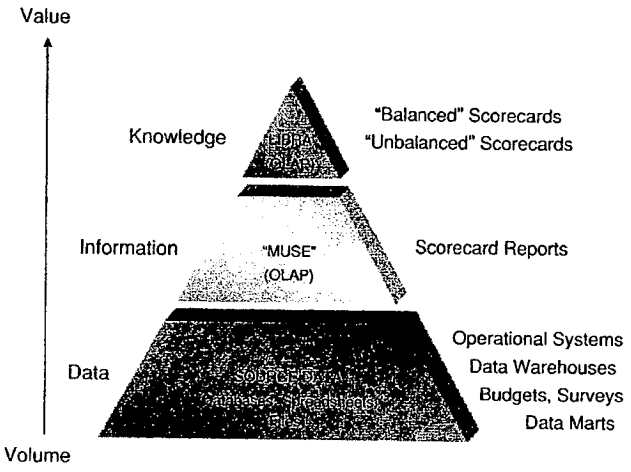
Data Infrastructure

The BI infrastructure is conceptually designed as a three-tier pyramid (see Exhibit 9.6). The top layer consists of highly aggregated data that delivers "knowledge." This layer populates balanced and unbalanced scorecards and views of individual metrics. The data in this layer are stored in a dozen or so Microsoft OLAP cubes, which are updated monthly. The Libra system holds a mere 100 megabytes of data and is maintained in a Hewlett Packard TSG data center in Atlanta, Georgia.

The middle layer consists of lightly aggregated data that deliver "information" in the form of Muse reports and files. Like Libra, the data are stored in OLAP cubes, which are updated at different intervals, from daily to monthly, depending on the nature of the reports they support. Muse consists of about 2,500 cubes that hold 200 gigabytes of data. Hewlett Packard TSG distributes the OLAP cubes across four regional data centers to keep the data closer to source systems and the primary users.

The bottom of the pyramid consists of the data from 40 different sources that feed the strategic dashboard, including data warehouses and operational systems. Most data are held for three years. What is unique about this approach is that it only captures data about exception conditions, not data for each metric at all times. For example, Muse only captures *missed* service-level commitments instead of all commitments. This substantially reduces the amount of data the strategic dashboard needs to load and store on a regular basis, improving performance, eliminating bottlenecks, and minimizing the team's dependence on IT teams for data.

EXHIBIT 9.6 BI INFRASTRUCTURE AT HEWLETT PACKARD TSG



The BI infrastructure supporting Hewlett Packard TSG's strategic dashboard consists of two different systems, one that delivers a scorecard view of metrics (Libra) and one that delivers standard reports for scorecard metrics (Muse).

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As PMMS become Hewlett Packard TSG's primary means of distributing information to employees, its BI infrastructure will expand to house more data across more subject areas at more levels of detail. In essence, PMMS is an enterprise data warehouse in the making.

SUMMARY

Purpose. Strategic dashboards align actions with strategy. A strategic dashboard embodies an organization's strategy and presents it to users in a dashboard format so they can quickly view where they need to make adjustments to achieve the strategy and meet group or individual goals. Most organizations that deploy strategic dashboards use the Balanced Scorecard approach, which helps organizations develop and execute strategy by defining a balanced set of objectives and metrics across all facets of the business.

Principles. The Balanced Scorecard Collaborative, founded by Kaplan and Norton to promote and enrich the Balanced Scorecard methodology, defines five

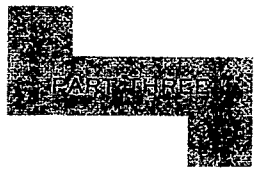
major principles for becoming a strategy-focused organization. These are: 1) translate the strategy into operational terms, 2) align the organization with the strategy, 3) motivate the organization by making the strategy everyone's job, 4) learn and adapt to make the strategy a continual process, and 5) mobilize change through executive leadership.

Hewlett Packard TSG represents a classic example of how an organization can implement a strategic dashboard quickly and reap tremendous benefits. Initially supporting a single region within Hewlett Packard TSG, the strategic dashboard now supports every region and unit in the group. The strategic dashboard consists of two distinct systems that are integrated transparently to users: Libra, which provides scorecard and top-level views of data, and Muse, which provides interactive reports containing detailed data about the performance metrics.

Hewlett Packard TSG built the performance management system in-house because at the time there were no commercially available tools that met their needs. Over time, PMMS will expand its BI infrastructure to support larger volumes of detailed data and become the single source of consistent information for the organization.

NOTES

1. Daniel Meade, "The Art and Science of Measurement: The Nature of Indicators on the Balanced Scorecard," BetterManagement.com.
2. Reprinted with permission by Robert S. Kaplan.



Critical Success Factors: Tips from the Trenches

CHAPTER 10

How to Launch the Project

Launching a performance dashboard project is often the easy part—only if you are a senior executive with a vision for empowering the organization with information to achieve short- and long-term objectives. But, if you are lower in the organization and have little influence on strategic initiatives and budgets, what do you do? How can you translate your vision into tangible reality?

This chapter will discuss strategies that individuals have used to launch performance dashboard projects. The first set of strategies revolves around selling the project. Success here requires persistence, excellent communications skills, and political savvy. The key challenges are finding a visionary executive, building support among key senior executives, and securing funding.

The next set of strategies revolves around managing the project. This requires excellent organizational and team-building skills and an ability to keep a project on track. Key challenges are creating an energetic, competent team, managing expectations, and evangelizing the solution to front-line staff.

SELLING THE PROJECT

Find a Sponsor

Chapter 4 showed that there is a direct correlation between an active, committed sponsor and the success of a business intelligence (BI) project, such as a performance dashboard. Thus, the first task in implementing a performance dashboard is to find an energetic, committed business sponsor and sell him or her on the value of the project. The best sponsors exhibit numerous characteristics that can make or break a project (see Spotlight 10.1).

SPOTLIGHT 10.1 CHARACTERISTICS OF A GOOD SPONSOR

Is there a litmus test for good sponsors? Although sponsors come in all sizes and shapes, the best sponsors exhibit the following characteristics:

1. **Respected.** The sponsor should be well known in the company and have a solid track record for making positive contributions over the years. The sponsor's opinion should carry significant clout on the executive steering committee.
2. **Knowledgeable.** The sponsor should understand the company inside and out, having served in numerous capacities over many years. The person should also know how technology can be applied to improve the company's competitive position in the marketplace.
3. **Well Connected.** The sponsor should have many allies and few, if any, foes. The sponsor should know the key players whose support is required for the project to succeed. Avoid sponsors with an archenemy who will try to sabotage a project.
4. **Established.** The best sponsors are well established in their positions and will not abandon the project in midstream. Avoid recruiting young executives eager to climb the corporate ladder or veterans a year or two from retirement. "Losing a sponsor midstream was the worst thing that happened to us," laments one manager of business performance.
5. **Committed.** The sponsor needs to commit his or her most precious commodity to the project: time. Avoid sponsors who have a vision but are too busy to evangelize the project, attend meetings, make decisions, and allocate resources. They also must be willing and able to commit other people's time to the project, especially business analysts who can interpret data and business requirements for the technical team.
6. **A Good Communicator.** A good sponsor knows how to communicate the project's rationale effectively to every constituency in the company and how to galvanize enthusiasm for the project on a sustained basis.
7. **A Good Role Model.** A good sponsor backs up words with actions and uses the performance dashboard to manage the business, either directly or indirectly.

Although few executives possess all seven characteristics, strive to find executives who exhibit most of them, or who do not have any glaring weaknesses.

Wait for a Visionary Executive

There are several techniques for finding a business sponsor. The first is to scout the executive ranks for someone who has a vision of how information technology can improve the organization. Often, these executives are easy to spot: they are new to the company or business unit and have experience leveraging information technology in a previous position. These types of executives often find you before you find them.

This was the case at Hewlett Packard Technology Solutions Group (TSG) when a new vice president of customer service in the European division "drove some new thinking" into the program, according to Martin Summerhayes, program director at Hewlett Packard TSG. The executive asked Summerhayes to spearhead a new measurement framework, which quickly turned into a strategic dashboard using a Balanced Scorecard approach. (See Chapter 9 for a profile of Hewlett Packard TSG.)

Sometimes executives just need to hear the right presentation in the right context to turn formative ideas into a concrete vision and plan. For example, the CIO of a large wireless telecommunications firm attended a workshop delivered by Robert Kaplan, professor at Harvard Business School and co-creator of the Balanced Scorecard methodology. The CIO was so impressed that he recruited the company's CFO to attend the next workshop session, and both of them then sold the concept to the rest of the executive team.

Find a Sponsor with "Information Pain"

When a sponsor does not come looking for you, the next best option is to look for an executive of a business unit that is suffering from lack of timely or accurate information. Sometimes the executives running these groups are willing to sponsor a performance dashboard project if they are convinced it will alleviate their "information pain." Once you have identified the right executive, then you need to sell him or her on the idea.

Selling to Sponsors

Cost-Benefit Analysis

The first task in selling a project is to make a business case that shows the costs and benefits. Unfortunately, this is not always easy because the biggest benefits of a performance dashboard are intangible and difficult to quantify: quicker access to information, better decisions, and more effective plans. Nevertheless, it is imperative to quantify the benefits in dollars and cents. The project team at the International Truck and Engine Corporation, for example, estimated that a performance dashboard would save the company the equivalent of ten full-time staff positions.

"Since we couldn't realistically estimate revenue or costs from giving users access to more timely data, we justified it on the number of hours analysts would save each month collecting and formatting financial data. We knew the tangible and intangible returns would be substantially higher, which has proven to be true, but we couldn't estimate the full value upfront," says Jim Rappé, manager of enterprise data warehousing at International Truck and Engine.

Benchmarks

Besides presenting a cost-benefit analysis, another way to bolster the case is to present what the competition is doing. Executives are eager to know how their business compares with their direct competitors or with the industry as a whole. Showing how a direct competitor uses a performance dashboard to advantage can have a major influence on whether executives commit to the project. Secondarily, industry benchmarks might reveal that your company needs to increase its investment in BI to keep up with the competition. Many industry groups, associations, or major consultancies publish such benchmarking data. If no such data exist, commission a research firm to conduct a custom study.

Prototypes

A picture is worth a thousand words. Showing a prototype of the performance dashboard is a quick way to demonstrate the benefits. With a prototype in hand, be ready to show it to anyone at any time. For example, one ambitious project manager spent months wheeling a computer across a corporate campus before he found a sponsor willing to commit to the project. (This was before the advent of Web applications!) Prototypes also generate a great deal of immediate feedback, which can help refine the application and project to meet users' needs. One word of caution: make sure potential sponsors realize that the prototype is not a finished application and requires additional time, money, and staff before it can be transformed into a production application.

Build It and They Will Come?

Some individuals take matters into their own hands: they build a performance dashboard first and then look for a business sponsor to promulgate it throughout the enterprise. Although most experts discourage using this "build it and they will come" approach, some teams have used it with success, given the right circumstances.

For example, the information management team in the finance department of a large, decentralized company built a tactical dashboard that provides a single, consistent source of financial information across all business units. Historically, the team built separate analytical applications to meet the needs of each business unit. However, the team realized that it could meet everyone's needs more efficiently and effectively by creating a Web-based tactical dashboard. The team believed there was pent-up demand for a centralized solution because financial analysts were spending too much time collecting and formatting data and too little time analyzing it, undermining the overall productivity and effectiveness of the corporate finance group.

"Since our company is so decentralized, the CFO was initially skeptical that we could consolidate disparate reporting systems and get everyone using the same financial data. But given the pressure to reduce expenses and runaway spreadsheets, we figured that if we developed the system that it might take off," says the BI director at the company.

So far, the strategy has worked. The tactical dashboard now supports more than 600 users who submit two million queries a month on average, representing more than half the financial analysts in corporate finance and one-third of relevant business users in the rest of the company. To boost user adoption to 100 percent, the team is now "selling" the application to the CFO and a finance transformation team that is developing recommendations about how to increase the value that the finance group delivers to other business units. "We believe the CFO will eventually endorse the application as a corporate standard," says the manager.

Wait for a Catalyst

Sometimes the best cost-benefit analysis, prototype, or strategic rationale are not enough to gain executive commitment. In that case, you have to wait for an external catalyst to reshape the business landscape and change the way executives perceive the value of the project. The most common catalysts are mergers and acquisitions, deregulation, and economic downturns.

For example, TELUS, the second largest telecommunications company in Canada, with revenues in excess of $7 billion, struggled for several years to put together a Balanced Scorecard for its operations group. A team assigned to the project collected reams of paper and documentation and defined several measures but never succeeded in launching the project. That changed in 2001 after a new executive team kicked off an operational efficiency program to get the company back on a solid financial footing after it was buffeted by industry deregulation, several subsequent mergers, and the economic downturn that started in 2000. The new program became the catalyst the performance dashboard project needed.

"The company had always pursued efficiency improvement, but now there was no choice! Executives needed to reduce the operating costs significantly without lowering customer service levels. The only way to do that was to implement the performance management system," says Kevin Lam, manager of business performance at TELUS.

It also helped that TELUS brought in managers from non-regulated enterprises who were more receptive to using performance dashboards and BI systems. The scorecard team presented a business case to one of these executives, saying the system would deliver a balanced set of measures that would be consistent at all levels of the company. They estimated the new system would increase the productivity of the operational workforce by five percent and save the com-

pany millions of dollars. Within short order, the executive became a key sponsor, says Lam (see Spotlight 12.1 in Chapter 12).

Selling to Mid-Level Managers

Many technical projects garner top management support but never gain traction because the project team fails to gather the support of mid-level managers. As mentioned in Chapter 4, these managers control departmental budgets and funds, and their actions and words convey to their staff whether or not to take executive mandates seriously. Mid-level managers may also feel threatened by a performance dashboard that displays their group's performance to the entire company in an unvarnished fashion.

The best way to gain the support of mid-level managers is to leverage an executive sponsor to open doors to departmental managers and staff. It is critical to become a persistent, visible, and vocal advocate of the project at this level of the organization, according to Jim Rappé at International Truck and Engine. "I'll go to the vice president or director and get 50 minutes at their staff meetings to provide background on the KBI portal, explain what's in it for them, and demonstrate the application. I also spend a lot of time talking one-on-one with people to market and sell the project," he says.

Selling Staff

It is also critical to gain the support of the front-line staff whose performance the system will most likely monitor. In many organizations, the staff is understandably jaded and cynical. Many believe, rightly or wrongly, that management will not give them enough resources to meet the goals and objectives in the performance dashboard or enough freedom to optimize performance using strategies and tactics that aren't officially sanctioned.

"Our initial performance management system was built at a time when the prevailing thinking was that you use it to go and beat up the [workers]," says a senior vice president at a services company who asked not to be named. "Quickly, workers questioned the validity of this metric or that data and you begin debating the accuracy of the data, and it's a downward spiral from there."

Another senior director who wished to remain anonymous says, "We had strong support from the top, but I don't think we've done enough to get the folks at the level below them to become really invested in this. There is a lot of skepticism with front-line employees. Many don't believe the numbers that [departments] report and vigorously comment [on] why some directors get performance bonuses [based on those numbers]."

Both managers said it was important to include staff in the process of developing metrics and targets to get their buy-in. It is important to tell the staff in advance about the project and give them the opportunity to provide feedback

both during the design and development stages as well as after the application is deployed through online feedback links or formalized review sessions.

SECURE FUNDING

Although every performance dashboard requires funding, there seems to be little correlation between money and success. In fact, it appears that new projects fare better if they operate on a shoestring budget, while projects that enjoy hefty initial budgets tend to run into problems.

Bootstrapping a New Dashboard

Many new projects get the buy-in of executives who do not necessarily control the purse strings at an operational level. This is what happened at Hewlett Packard TSG: the executive sponsor assumed that funding would come out of a regional budget. "Thus, I started with no dedicated budget, no full-time staff, and no hardware or software," says Summerhayes.

To get by until he could secure formal funding, Summerhayes "stole" two part-time developers from other projects and "found" some hardware they could use to build the system. In seven weeks, this makeshift team delivered the first version of the scorecard, which contained nine metrics and supported 800 users. Summerhayes was then able to divert money from other projects and hired 11 developers and two project leads. Within 18 months, the new system contained 120 metrics and supported 5,500 Hewlett Packard TSG users worldwide.

Direct Energy Essential Home Services also bootstrapped its performance dashboard. Even though the dashboard project was high priority, it was not given any money, largely because the company was preoccupied with reorganizing itself to thrive in a nonregulated environment. Executives expected the IT department to allocate the time of some staff to work on the project, which it did; in a few months, it delivered a bare-bones application that proved useful in the field. "Now that the business climate has stabilized, we plan to invest more, perhaps purchase a commercial dashboard solution," says John Lochrie, senior vice president at Direct Energy.

The advantage that bootstrapped projects have is that they are driven by small teams of business and technical people who are highly motivated and charged with a mission to move quickly to meet demand. They know the only way to sustain the project is to deliver quick wins to the business and create momentum. In contrast, larger teams with bigger budgets often take on bigger projects with bigger expectations that are challenging to meet. With more staff to coordinate, more users to satisfy, and more requirements to meet, they often experience problems.

In 2003 the District of Columbia decided to automate the way it handles agency performance data as part of a multimillion dollar campaign to modernize all administrative services. In early 2004, it purchased an integrated business

performance management solution (i.e., budgeting, planning, and dashboarding) and began developing more than 1,200 scorecards for 56 agencies covering 19,000 employees that was scheduled to go "live" in November, 2004 (see Spotlight 10.2 and Exhibit 10.1).

SPOTLIGHT 10.2 STRATEGIC DASHBOARDS IN A GOVERNMENT AGENCY

Although many companies have introduced strategic dashboards, few have implemented them on the same scale as the District of Columbia. In 2004, the District began rolling out more than 1,200 scorecards to 56 agencies. The scorecards contain metrics and initiatives defined in each agency's performance-based budget that emanate from each agency's strategic plan objectives set by the Mayor of the District. The District of Columbia is working hard not to buckle under the scope of the project although it has had to postpone the delivery of the full system until 2006.

The scorecards largely automate an existing manual performance management process. Previously, each month agencies sent Microsoft Word-based reports with their comments to the city administrator's office, where analysts would review the reports, validate the data, and send questions or comments back. At the year's end, the city administrator's office would consolidate the data in a Microsoft Access database. The new system automatically collects and displays performance results and commentary in a Web-based dashboard available to directors and administrators in each agency and the Mayor's office.

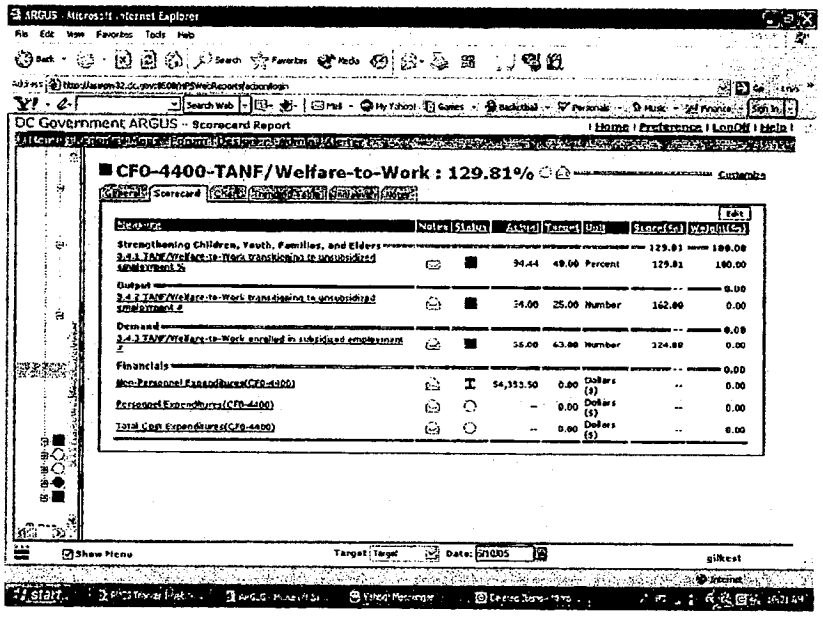
The scorecard solution will help the city government to become more efficient in delivering high-quality services. It will expand the breadth of information collected about agency programs and activities while improving the quality and consistency of performance-related data. This will enable analysts in the Mayor's office to perform deeper analysis of agency performance and spend less time collecting, verifying, and massaging the data. It will also enable agency heads and program and activity managers to see exactly where they stand against their performance and budgetary targets at any time and better forecast demand for their services by viewing performance trends online over multiple years. The District publishes performance data from its scorecards in budget and performance reports that it sends to the U.S. Congress for review.

"Our discussion with the agencies will be much richer because more people will be entering the data and reflecting on our comments," says Doug Smith, director of Strategic Planning and Performance Management in the District's Office of the City Administrator, "and as we get more data into the system, we will press agencies harder in their budget submissions to more accurately forecast demand and the dollars they need to meet that demand and maintain service quality."

Despite its early success, the District still has work ahead. It needs to build grass roots support for the system among workers in the agencies and train users both to upload data using the new system and to meet data delivery deadlines. So far, the District has purchased licenses for 1,000 users, limiting usage of the scorecards to managers, analysts, and agency employees assigned to perform data entry for the system.

Because of the large scope of the project and other unexpected problems, the District has postponed the time when it plans to have all agencies on line with the system until 2006. "We bit off a little more than we can chew, but we are making progress," says Doug Smith, director of Strategic Planning and Performance Management in the Office of the City Administrator.

EXHIBIT 10.1 A STRATEGIC DASHBOARD IN THE DISTRICT OF COLUMBIA



Like many organizations, the District of Columbia does not use the four perspectives of a classic balanced scorecard. Instead, it has customized its scorecards to reflect each agency's strategic goals and objectives contained in its performance-based budget. This screenshot shows a scorecard for a single strategic objective ("Improve welfare-to-work ratios") within the Department of Employment Services. The software lets users switch from stoplight views to tables or charts using the tabs below the scorecard title. Another tab shows the performance of initiatives associated with each objective and commentary about monthly performance results. (Numbers are based on test data.)

Source: Courtesy of the District of Columbia.

Funding Established Projects

Although new projects seem to thrive in a bootstrap environment, established projects require stable funding. BI managers often complain that funding for their projects is always at risk because executives and strategies shift quickly. This requires them to spend a great deal of time selling the project just to survive instead of delivering new functionality to meet user requirements.

Funding for established BI projects is usually split between the IT department and business units. The IT department pays for maintenance of the existing environment, and business units pay for extensions to it, usually new applications that require the extraction of new sets of data from operational systems. Sourcing and integrating new data into an existing environment usually takes at least three months to define user requirements, design the reports, and test the application. If the data are already in the BI environment, deploying new analytical applications can take anywhere from two hours to two days to two weeks.

WHERE TO START?

One of the most common questions that people ask about performance dashboard projects is where to start. The best place to start is where there is an energetic, committed sponsor. However, a sponsor is not enough to guarantee the success of a project. It is also important to evaluate the group the sponsor represents to determine how receptive it is as a whole to using a performance dashboard. The readiness assessment checklist in Chapter 4 is a good way to compare and contrast several groups in an organization to find the best place in an organization to launch a project (see Exhibit 4.11 for a sample worksheet to evaluate multiple groups).

Enterprise Scope Takes Years

Even when a CEO initiates a performance dashboard project, it does not become an enterprise application overnight. Top-down-driven projects need several years to percolate throughout an organization. For example, a wireless telecommunications company spent nine months creating a corporate scorecard for the executive team and another nine months developing custom scorecards for each member of the executive committee. Meanwhile, the company is also creating the technical and application infrastructure for the strategic dashboard so it can roll out scorecards to all groups in the organization.

Shared Services?

There is considerable disagreement about whether performance dashboards—Balanced Scorecards in particular—can be effectively initiated in a shared service

function, such as finance, IT, or human resources, which provides support services to all the product and service groups in the company.

"The biggest mistake I've seen is to assign a [strategic dashboard] project to someone from finance, human resources, or information technology where the primary focus is on one of these areas," says Summerhayes. He says finance groups focus too much on financial measures, human resource groups focus too much on workforce issues, and IT departments spend too much time and money building the correct architecture and infrastructure. "A scorecard project should be business led to help balance all of these constituent parties, but you need to include all of these from the start," says Summerhayes.

Multiple Touchpoints

However, others believe that a shared service function is an ideal place to start a performance dashboard project. "A finance-led initiative touches almost every area of the business. We see order entry, the supply chain, and operations across all divisions in the company," says Rappé. Each time International Truck and Engine populates its data warehouse with a new subject area, almost every division in the company can leverage the data. Thus, the finance group's tactical dashboard has quickly become a substantial enterprise resource.

On the whole, it does not matter where you start a performance dashboard initiative as long as you have a committed sponsor, a receptive organization, and a proper understanding of how to deliver business value with the tools.

CREATE A STRONG TEAM

Once a performance dashboard project gets approved and funded, the next step is to create a capable team to define the metrics, create the dashboard, evangelize the solution, and train the users.

Project Champions

The team is led by a project champion or business driver who either pitched the idea to the business sponsor or was asked by the sponsor to spearhead the project. The project champion must possess a versatile mix of skills. According to John Monczewski, senior manager of reporting at Booz Allen Hamilton, project leads must have strong knowledge of the business and performance management concepts and excellent communications skills. They must be enthusiastic and relentless promoters, excellent team builders, consummate salespeople and politicians, and superb managers of time, resources, and projects. "They must truly be the champions of the project," he says.

Executive Steering Committee

The first thing the team should do is create an executive steering committee to oversee the project. The executive steering committee consists of the business sponsor, the project champion, and representatives from every group or business unit that ultimately will use or support the performance dashboard. The purpose of this group is to drive consensus on the definition and meaning of critical metrics, prioritize major enhancements, and sustain funding. Committee members should have clout in their own organizations so they can effectively evangelize the value and importance of the project back home.

Politically, it is wise to invite executives who might have reservations about the project to sit on the steering committee. This gives you more opportunity to sell them on the value of the project and helps you proactively develop workarounds to aspects the executives might find objectionable. You can also keep them better apprised of project developments that affect their area as well as intercept inaccurate rumors or hearsay that might adversely color their opinion of the project. Even if they decline to join the group, they will be flattered by the invitation. You can usually get them to agree to be on the committee mailing list to receive meeting summaries and updates.

Project Managers

Iterative Development

The team needs experienced project managers to establish a project plan, coordinate resources, manage scope and requirements, and keep the project on track and in budget. Much has been written about how to manage technical projects, and that information will not be repeated here. However, because performance dashboards are best developed in an iterative fashion, project managers should make sure they allow plenty of time for business users to provide feedback to the development team on designs and deliverables.

Marketing Plan

The project plan should also include a marketing plan that is critical to selling the project to lower levels of the organization and stimulating usage and adoption once the team rolls out the solution. The marketing plan should define target customer segments inside the company that need to use or support the performance dashboard. For each segment, the marketing plan defines what messages to communicate, how frequently, and through what media or channels, as well as who will deliver the message. It may be wise to consult a marketing manager in your own company to help you set up the plan, which can make or break your project.

Project Dashboard

The project team should also apply performance management principles to manage its own project. That is, the team should define a mission statement, goals, objectives, and values to guide the project and then create a performance dashboard to measure their project every step of the way! The team's experience in building its own performance dashboard is a quick and clever way to train the team on performance dashboard concepts, best practices, and pitfalls.

The "KPI Team"

To define metrics, some organizations prefer to form a key performance indicator (KPI) team, whereas others hire business analysts to interview managers and subject matter experts. Consensus-driven organizations generally prefer to use KPI teams, which are comprised of two to seven business experts from various parts of the company. KPI team members are subject matter experts who are authorized to make decisions on behalf of their group. Ideally, they work full time on the project until it is complete, which could be several months or more depending on scope. The best KPI teams use an external facilitator to ensure that the team creates a balanced set of metrics that accurately portray and predict performance.

Business Analysts

Other organizations use business analysts or other methods to gather requirements and define metrics. For example, Hewlett Packard's Summerhayes hired two seasoned business analysts to conduct metric interviews. Both analysts have more than 15 years of business experience inside Hewlett Packard and are experienced managers who can "talk the talk."

The analysts first interview the group's top executive who wants to introduce the strategic dashboard to their organization and then follow up with subject matter experts who can explain the nuances of the business processes the scorecard will measure. When two or more executives use conflicting metrics, Summerhayes gets them together to hammer out the differences. Once the metrics are defined, the TSG project team hammers out a contract in which the group promises to provide data to the program team on a scheduled basis and meet quarterly to assess the progress of the initiative, usage trends, and what metrics (if any) need to be revised to meet strategic objectives and user requirements.

Likewise, TELUS's Lam recruited business analysts from the operations group to help collect requirements, standardize metrics, and develop sample screens. "We used our analysts to build a close working relationship with our development team," he says.

Using Surveys to Gather Requirements

International Truck and Engine Corporation took a different approach. Prior to conducting one-on-one interviews, the dashboard team sent a survey of open-ended questions to 27 financial managers across all divisions in the company. About two-thirds of the managers responded, and their comments generated 133 KPIs, many of which were common across multiple divisions. Business analysts then followed up the survey with one-on-one meetings to get a firm grasp on the business context in which managers were using the metrics.

"Our survey was a great way to help financial managers brainstorm all the KPIs they might need. If we had done 30-minute one-on-one interviews, we may not have gotten all the KPIs that we did. The survey gave them time to think about the issues, reference their existing reports, and provide thoughtful replies. We think this approach generated higher quality information than individual interviews," says Rappé.

The Technical Team

Besides a project champion and business analysts, the performance dashboard team contains technical specialists who translate metrics into a working application. If the technical team uses a commercial tool, it is best to include one or more vendor consultants on the team on a long-term basis. The best technical team members interact continuously with business users and other members of the team. Often, they accompany business analysts on interviews and feel comfortable calling subject matter experts to get clarification.

Small Teams

Good technical teams have few members. This enables the team to work quickly and efficiently meet user requirements and deadlines. "We keep ETL developers, report developers, and Web developers in the same room so they work collaboratively, which is ultimately more efficient than an assembly line approach where one group hands off work to another," says Kevin Lam, former manager of business performance at TELUS.

Longevity

The longer a technical team stays together, the more efficient it becomes. Technical team members learn each other's strengths and weaknesses and develop pride in their collective accomplishments. "I find developers with lots of drive and enthusiasm and give them plenty of freedom to experiment, which makes them excited to come to work every day. Also they can be very creative in developing solutions, where the business can only outline the issue," says Summerhayes.

SUMMARY

Launching a performance dashboard project is exciting when there is a visionary executive who understands the value the solution can provide and is eager to devote time and resources to make it happen. However, finding such sponsors is not always easy. Sometimes it is impossible to get a sponsor until the business landscape shifts or a new executive comes on board with a vision for using a performance dashboard to drive the organization in the right direction.

Selling the Project. Once you find a potential sponsor, you need to make a business case that describes the intangible benefits and quantifies the tangible ones. It is also helpful to develop a prototype to show what the performance dashboard might look like or find benchmark data that compare your organization with industry norms or its top competitors. In a worst-case scenario, it may be necessary to develop the application, at least for a smaller group, and seek a corporate sponsor after the fact to deploy it over the whole enterprise.

It is also imperative to sell the project to middle management and staff. First, this requires the sponsor to evangelize the solution and open doors for further meetings at the departmental level. Follow up meetings with one-on-one discussions and make sure you seek the feedback of managers and staff at all phases of the project, from design to development to post-deployment.

Secure Funding. Many teams bootstrap performance dashboards without initial funding. However, this does not give executives and managers license to choke the flow of money to these projects. Fast-growing or established projects require regular infusions of cash or else they lose momentum and die. Established projects need sustained funding to continue expanding into other parts of the organization. Usually, the IT department covers maintenance costs, whereas business units pay for extensions to the platform.

Where to Start? There is no right or wrong place in the organization to start a performance management project, whether it is an operational, tactical, or strategic dashboard. Each can be deployed initially to a single group or department and expanded to the rest of the enterprise over time. However, the best performance dashboards grow incrementally and iteratively one department or subject area at a time.

Create a Strong Team. A performance dashboard team consists of individuals with both business and technical expertise. The team establishes a tight rapport with the business and moves quickly to meet their requirements. An executive steering committee guides and evangelizes the project and drives consensus on metric definitions. Project managers incorporate iterative development techniques, develop comprehensive marketing plans, and use performance dashboards to measure their own progress and success.

CHAPTER 11

How to Create Effective Metrics

TOOLS OF CHANGE

One of the most common questions people ask about performance dashboards is "How do we define effective metrics?"

The answer is important because the metrics govern how employees do their jobs. The adage "What gets measured, gets done" is true. Metrics focus employees' attention on the tasks and processes that executives deem most critical to the success of the business. Metrics are like levers that executives can pull to move the organization in new and different directions. In fact, among all the tools available to executives to change the organization and move it in a new direction, performance measures are perhaps the most powerful.

Subsequently, executives need to treat metrics with respect. As powerful agents of change, metrics can drive unparalleled improvements or plunge the organization into chaos and confusion. If the metrics do not accurately translate the company's strategy and goals into concrete actions on a daily basis, the organization will flounder. Employees will work at cross-purposes, impeding each other's progress and leaving everyone tired and frustrated with little to show for their efforts. In short, the company will be efficient but ineffective.

Suboptimized Processes

A trucking company, for example, that measures performance by the percentage of on-time shipments may drive hauling costs skyward because the metric does nothing to discourage dispatchers from sending out half-empty trucks to meet their schedules. To keep costs in line, the company needs to add a second metric that measures the percentage of unused cargo capacity in outgoing trucks, and it needs to revise the first metric so it emphasizes meeting customer expectations for fast, reliable shipments rather than just on-time deliveries. This combination

of metrics gives dispatchers leeway to contact customers and renegotiate shipping schedules if they know the customer may be flexible.

Another classic example is a call center that pays bonuses to customer service representatives based on how many customers they talk to per hour versus how many customer problems they solve. Representatives paid by the number of clients they talk to per hour are not likely to take the time to understand a customer's problem or provide a satisfactory response, especially when complex problems are involved. To address this problem, some call centers create a special team to handle complex calls; such calls are then measured by how effective the representatives are at problem solving, not how many calls they handle per hour.

Many organizations take a close look at the performance metrics when designing strategic dashboards. This is because the Balanced Scorecard methodology encourages organizations to create metrics that are leading indicators of performance rather than lagging indicators (i.e., financial metrics). However, the two examples given above demonstrate the importance of creating effective metrics in operational and tactical environments as well. Creating effective metrics is critical to the success of any performance dashboard.

The Art of Creating Metrics

Crafting sound metrics is more an art than a science. Although a metrics or KPI team may spend months collecting requirements, standardizing definitions and rules, prioritizing metrics, and soliciting feedback—in short, following all the rules for solid metric development—it still may not succeed. In fact, there is a danger that metrics teams will shoot for perfection and fall prey to "analysis paralysis." In reality, KPI teams can only get 80 percent of the way to an effective set of metrics; the last 20 percent comes from deploying the metrics, seeing how they impact behavior and performance, and then adjusting them accordingly.

"Only when you put the metrics out there, do you really understand what behaviors you are driving," says John Lochrie, senior vice president of Direct Energy Essential Home Services.

UNDERSTANDING METRICS

Types of Metrics

Key Performance Indicators

Metrics used in performance dashboards are typically called key performance indicators (KPIs) because they measure how well the organization or individual performs an operational, tactical, or strategic activity that is critical for the current and future success of the organization. There are two major types of KPIs: leading and lagging indicators. Leading indicators measure activities that have a

significant effect on future performance, whereas lagging indicators, such as most financial metrics, measure the output of past activity.

Leading Indicators

Leading indicators are powerful measures to include in a performance dashboard, but are sometimes difficult to define. They measure key drivers of business value and are harbingers of future outcomes. To do this, leading indicators either measure activity either in its current state (i.e., number of sales meetings today) or in a future state (i.e., number of sales meetings scheduled for the next two weeks), the latter being more powerful because it gives individuals and their managers more time to influence the outcome (see Spotlight 11.1).

SPOTLIGHT 11.1 SAMPLE LEADING INDICATORS

It is easy to define lagging indicators, but it takes imagination and persistence to identify leading indicators. One must follow the trail backward from results measured by a lagging indicator to a first-mover driver. Because each lagging indicator or outcome has numerous drivers, the key to defining effective leading indicators is to find the one or two drivers that have the greatest effect on the results desired by executives. Here are a few examples of leading indicators and the outcomes (or lagging metrics) they influence.

Leading Indicators or Value Drivers		Lagging Indicators or Outcomes
Number of clients that sales people meet face to face each week	→	Sales revenue
Complex repairs completed successfully during the first call or visit	→	Customer satisfaction
Number of signed, positive employee suggestions each week; ratio of positive to negative comments	→	Employee satisfaction
Number of parts for which orders exceed forecasts within 30 days of scheduled delivery	→	Per unit manufacturing costs
Number of days with lowest prices for comparable products	→	Market share
Number of customers who are delinquent paying their first bill	→	Customer churn
Number of loyalty rewards cashed in each month	→	Customer loyalty

For example, Quicken Loans identified two KPIs that correlate with the ability of mortgage consultants to meet daily sales quotas: the amount of time they spend on the phone with customers and the number of clients they speak with each day. Quicken Loans now displays these two "current-state" KPIs prominently on its operational dashboards. More importantly, however, it created a third KPI based on the previous two that projects every 15 minutes whether mortgage consultants are on track to meet their daily quotas. This "future-state" metric, which is based on a simple statistical regression algorithm using data from the current state metrics, enables sales managers to identify which mortgage consultants they should assist during the next hour or so.

Brainstorming Leading Indicators

Most people are so well trained at measuring outcomes instead of drivers that it takes them a while to shift their mental focus and become adept at creating effective KPIs. Consultant Paul Niven suggests using facilitated brainstorming sessions to break mental logjams. Whenever a user suggests a metric, the meeting facilitator should say, "Good, what drives the performance of that measure?" The individual or group then brainstorms new metrics, and the facilitator repeats the question. Before long the group has performed a root-cause analysis of the initial metric and generated one or more effective leading indicators.[1]

Diagnostic Measures

Some measures do not necessarily fit neatly into a leading or lagging indicator category, but they are still important to capture. In most cases, these metrics signal the health of various operational initiatives or processes and are good candidates for a departmental or workgroup dashboard. Niven calls these types of KPIs "diagnostic" metrics. Some examples might be net margins on key product lines, profitability of the top 10 percent of channels, or days of sales outstanding.

KPI CHARACTERISTICS

Actionable KPIs

Besides predicting future performance, KPIs have numerous other characteristics (see Spotlight 11.2). Perhaps the most important attribute of a KPI is that it is actionable. That is, if a metric trends downward, users should know what corrective actions to take to improve performance. There is no purpose in measuring activity if users cannot change the outcome.

SPOTLIGHT 11.2 TWELVE CHARACTERISTICS OF EFFECTIVE KPIS

1. **Aligned.** KPIs are always aligned with corporate strategy and objectives.
2. **Owned.** Every KPI is "owned" by an individual or group on the business side who is accountable for its outcome.
3. **Predictive.** KPIs measure drivers of business value. Thus, they are "leading" indicators of performance desired by the organization.
4. **Actionable.** KPIs are populated with timely, actionable data so users can intervene to improve performance before it is too late.
5. **Few in number.** KPIs should focus users on a few high-value tasks, not scatter their attention and energy on too many things.
6. **Easy to understand.** KPIs should be straightforward and easy to understand, not based on complex indexes that users do not know how to influence directly.
7. **Balanced and linked.** KPIs should balance and reinforce each other, not undermine each other and suboptimize processes.
8. **Trigger changes.** The act of measuring a KPI should trigger a chain reaction of positive changes in the organization, especially when it is monitored by the CEO.
9. **Standardized.** KPIs are based on standard definitions, rules, and calculations so they can be integrated across dashboards throughout the organization.
10. **Context driven.** KPIs put performance in context by applying targets and thresholds to performance so users can gauge their progress over time.
11. **Reinforced with incentives.** Organizations can magnify the impact of KPIs by attaching compensation or incentives to them. However, they should do this cautiously, applying incentives only to well-understood and stable KPIs.
12. **Relevant.** KPIs gradually lose their impact over time, so they must be periodically reviewed and refreshed.

Accountability

An actionable KPI implies that an individual or group exists that "owns" the KPI, is held accountable for its results, and knows what to do when performance declines. Without accountability, measures are meaningless. Thus, it is critical to assign a single business owner to each KPI and make it part of his or her job description and performance review. It is also important to train users to interpret the KPIs and how to respond. Often, this training is best done "on the job" by having veterans transfer their knowledge to newcomers.

Some companies attach incentives to metrics, which always underscores the importance of the metric in the minds of individuals. However, just publishing performance scores among peer groups is enough to get most people's competitive juices flowing. It is best to assign accountability to an individual or small group rather than a large group, in which the sense of ownership and accountability for the metric become diffused.

Empowered

Companies also need to empower individuals to act on the information in a performance dashboard. This seems obvious, but many organizations that deploy performance dashboards hamstring workers by circumscribing the actions they can take to meet goals. Companies with hierarchical cultures often have difficulty here, especially when dealing with front-line workers whose actions they have historically scripted. Performance dashboards require companies to replace scripts with guidelines that give users more leeway to make the right decisions.

Timely

Actionable KPIs require right-time data. The KPI must be updated frequently enough so the responsible individual or group can intervene to improve performance before it is too late. Operational dashboards usually do this by default, but many tactical and strategic dashboards do not. Many of these latter systems contain only lagging indicators of performance and are only updated weekly or monthly. These types of performance management systems are merely electronic versions of monthly operational review meetings, not powerful tools of organizational change.

Some people argue that executives do not need actionable information because they primarily make strategic decisions for which monthly updates are good enough. However, the most powerful change agent in an organization is a top executive armed with an actionable KPI.

David Parmenter, the CEO of Waymark Solutions, a performance management consultancy in New Zealand, recounts the story of Lord King, chairman of British Airways, who reportedly turned around the ailing airline in the 1980s using a single KPI: the timely arrival and departure of airplanes.[2]

"[Lord King] was notified, wherever he was in the world, when a British Airways plane was delayed over a certain time, say two hours. The British Airways airport manager at the relevant airport knew that if a plane was delayed beyond this threshold, he or she would receive a personal call from the Chairman. It was not long before British Airways planes had a reputation for leaving on time," says Parmenter.

Trigger Points

The British Airways story illustrates another characteristic of KPIs. They trigger a chain reaction of process improvements throughout the organization. Effective KPIs sit at the nexus of multiple interrelated processes that drive the organization. When activated, these KPIs create a ripple effect throughout the organization and produce stunning gains in performance.

For instance, late planes affect many core metrics and processes at airlines. Costs increase because airlines have to accommodate passengers who miss connecting flights; customer satisfaction declines because customers dislike missing flights; worker morale slips because they have to deal with unruly customers; and supplier relationships are strained because missed flights disrupt service schedules and lowers quality.

When an executive focuses on a single, powerful KPI, it creates a ripple effect throughout the organization and substantially changes the way an organization carries out its core operations. Managers and staff figure out ways to change business processes and behaviors so they do not receive a career-limiting memo from the CEO.

Easy to Understand

In addition, KPIs must be understandable. Employees must know what is being measured, how it is being calculated, and, more importantly, what they should do (and should not do) to affect the KPI positively. Complex KPIs that consist of indexes, ratios, or multiple calculations are difficult to understand and, more importantly, not clearly actionable.

However, even with straightforward KPIs, many users struggle to understand what the KPIs really mean and how to respond appropriately. It is critical to train individuals whose performance is being tracked and follow up with regular reviews to ensure they understand what the KPIs mean and know the appropriate actions to take. This level of supervision also helps spot individuals who may be cheating the system by exploiting unforeseen loopholes.

"We hold forums where we show field technicians how our repeat call metric works and how it might impact them. We then have the best technicians meet with others to discuss strategy and techniques that they use to positively influence the metric," says Ripley Maddock, director of customer management at Direct Energy Essential Home Services.

It is also important to train people on the targets applied to metrics. For instance, is a high score good or bad? If the metric is customer loyalty, a high score is good, but if the metric is customer churn, a high score is bad. Sometimes a metric can have dual polarity, that is, a high score is good until a certain point and then it turns bad. For instance, a telemarketer who makes 20 calls per hour may be doing excep-

tionally well, but one who makes 30 calls per hour is cycling through clients too rapidly and possibly failing to establish good rapport with callers.

Accurate

It is difficult to create KPIs that accurately measure an activity. Sometimes, unforeseen variables influence measures. For example, a company may see a jump in worker productivity, but the increase is due more to an uptick in inflation than internal performance improvements. This is because the company calculates worker productivity by dividing revenues by the total number of workers it employs. Thus, a rise in the inflation rate artificially boosts revenues—the numerator in the metric—and increases the worker productivity score even though workers did not become more efficient during this period.

Also, it is easy to create metrics that do not accurately measure the intended objective. For example, many organizations struggle to find a metric to measure employee satisfaction or dissatisfaction. Some use surveys, but some employees do not answer the questions honestly. Others use absenteeism as a sign of dissatisfaction but these numbers are skewed significantly by employees who miss work to attend a funeral, care for a sick family member, or stay home when daycare is unavailable. Some experts suggest that a better metric, although not a perfect one, might be the number of sick days since unhappy employees often take more sick days than satisfied employees.

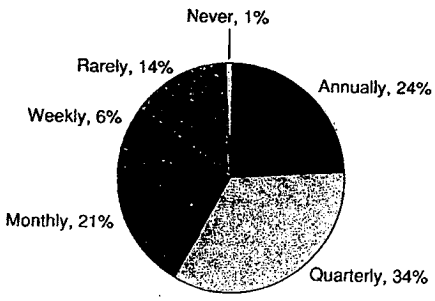
Relevant

A KPI has a natural life cycle. When first introduced, the KPI energizes the workforce and performance improves. Over time, the KPI loses its impact and must be refreshed, revised, or discarded. Thus, it is imperative that organizations continually review KPI usage.

"We usually see a tremendous upswing in performance when we first implement a scorecard application," says Martin Summerhayes, a program manager at Hewlett Packard Technology Solutions Group (TSG), "but after a while, we often see performance trail off again. In the end you can't control people, so you have to continually reeducate them on the importance of the processes that the metrics are measuring or you have to change the processes."

Performance dashboard teams should track KPI usage automatically, using system logs that capture the number of users and queries for each metric in the system. The team should then present this information to the performance dashboard steering committee, which needs to decide what to do about underused metrics. For example, Hewlett Packard TSG holds quarterly meetings to review KPI usage, which it tracks at a detailed level. "If a metric isn't being accessed, we go back to the owners and see whether they still want it. If not, we remove the metric," Summerhayes says.

EXHIBIT 11.1 HOW OFTEN DO YOU MODIFY KPIS?

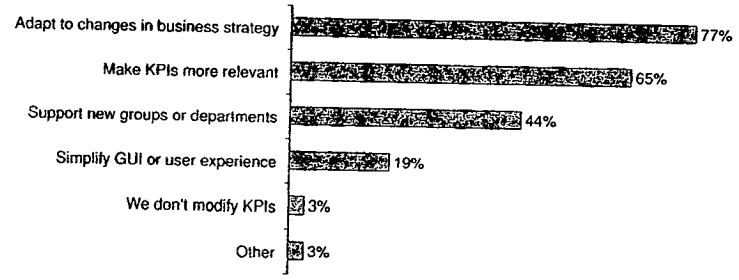


Most companies modify KPIs annually or quarterly. Based on 360 respondents.

Source: Wayne Eckerson, "Best Practices in Business Performance Management: Business and Technical Strategies" (*TDWI Report Series*, 2003).

Research from The Data Warehousing Institute (TDWI) shows that most organizations modify KPIs on a quarterly or annual basis. Only 15 percent of organizations "rarely" or "never" modify KPIs. The most common reason for modifying KPIs is to adapt to changes in business strategy (77 percent) followed by the need to make KPIs "more relevant" (see Exhibits 11.1 and 11.2).

EXHIBIT 11.2 WHY DO YOU MODIFY KPIS?



Most companies modify KPIs to adapt to changes in business strategy or make KPIs more relevant. Based on 360 respondents who could select more than one choice.

Source: Wayne Eckerson, "Best Practices in Business Performance Management: Business and Technical Strategies" (*TDWI Report Series*, 2003).

CREATING METRICS

Gathering Requirements

Most performance dashboard teams use interviews and surveys to gather requirements as a way to determine the right KPIs to create. Interviews are usually done by business analysts who ask open-ended questions to top executives about the business strategy, objectives, goals, and expectations for the project, among other things. The analysts then gather additional detail by interviewing mid-level managers and subject matter experts who can fill in the details of specific processes, identify data sources, and discuss the metrics used in current reports, what those metrics mean, and how they are calculated.

Requirements Forms

To guide business analysts during interviews, most project teams create a template or requirements form to capture requirements in a standardized way. This ensures that analysts ask a consistent set of questions and gather a comprehensive set of information that is easily synthesized and standardized.

Hewlett Packard TSG, for example, uses two forms to define new metrics for its strategic dashboard, one to gather business requirements and one to define technical specifications. The business requirements form or template asks for a general description of the metric, how it aligns with corporate strategy, the name of the metric, its owner, its target and stretch goals, and how the metric is calculated, among other things (see Exhibit 11.3).

The technical specification document provides technical details for each proposed metric. For example, it asks for data sources and formats, extraction logic, scorecard layouts, target specifications, analytical layouts (including columns, rows, data types, formats, and formulas), chart views, and security requirements. Most importantly, the form asks for the business and technical owners of the metrics so project team members can follow up with additional questions, if needed.

Understand Metric Usage

Although the above data about proposed metrics is important, most project teams find it is critical to understand the context within which the business plans to use the metrics. This usually involves follow-up interviews or creating use-case scenarios that document the processes and ways in which people use the metrics.

For example, International Truck and Engine Corporation conducted follow-up interviews with several managers, who shared that they usually ask a business

EXHIBIT 11.3 BUSINESS REQUIREMENTS FORM

	PMMS LIBRA Metric Request Form **Submitted By:** _____ **Date:** _____
Business or Function	*What business or function do you request a metric for:*
Region/Country Scope	*What is the geographical scope of the metric:*
Metric Perspective	*What balance scorecard perspective does the metric fit in? Customer, Financial, Internal, Learning:*
Metric Title	*Give a brief name to the metric (less than 20 characters)*
Metric Description	*Describe the metric in business terms*
Business Justification & Strategic Importance	*Define if the metric is a strategic metric or an operational excellence measure and justify it. How does the metric measure progress towards strategy execution?*
Metric Business Owner, Subject Matter Expert, Business IM Owner	*Define the owners of the metric either from the business or the function that will be measured on the results (can be name or job title). Also, who collects, reviews, approves and reports the data?*
Metric Goals	*Specify both the target and stretch goals for the metric (indicate over what time period) Also, how is the goal selected and who approves the goal?* **Target :** **Stretch:** **Goals setting process and approval from:**
Definition, Calculation, and Criteria	*How is the metric calculated? What criteria is used? Identify any differences between WW or Sub-Region definitions.*
Data Source and Availability	*What is the data source for the actual results and how is it collected? When is the data available? (i.e., which workday, every six months, annually, etc.)*
Supporting Reports	*What detailed reports are available to support the metric results?*
Related Metrics	*List of upstream metrics (influenced by this metric)?. List of downstream metrics (have influence on this metric)?*
Additional Information	*Input additional information related to the metric.*
Status	*Status of the metric request from the PMMS WW Program Office team (approved, pending additional info), targeted implementation date, etc.*

Sample form used by Hewlett Packard TSG to capture requirements for a strategic dashboard.

analyst to create a detailed report for them when they notice a downward trend in a metric. The team quickly realized it could provide significant value to the managers and free up analysts' time if it provided detailed data and reports alongside the metrics.

Validating Metrics

Elusive Nuances

The problem with many metrics is that they are difficult to understand or implement. Sometimes the metric does not accurately capture the nuances of a business process, making it difficult for the project team to figure out what data to capture and how to calculate it.

For example, executives at Direct Energy requested a "repeat call" metric to track the efficiency of field service technicians, but it took the project team considerable time to clarify the meaning of the metric. For example, field service technicians primarily repair home energy equipment, but they can also sell it. So, is a repeat call a bad thing if the technician also brings literature about replacement systems or makes a sale? Or, what if a homeowner only lets a technician make minor repairs to an aging system to save money, but then calls shortly afterwards because the home's furnace broke down again?

Most business processes contain innumerable nuances that must be understood and built into the metric if it is to have any validity, especially if the metric is used as a basis for compensation. The worst-case scenario is when employees discover these nuances after the metrics have been deployed, which stirs up a hornet's nest of trouble and wreaks havoc on both the performance management system and compensation policies.

Missing or Corrupted Data

Sometimes, the data to support a metric simply do not exist, or they are in poor condition and difficult to integrate. The most well-defined KPIs are irrelevant if there are no data to support them. Executives who want to create a strategic dashboard frequently assume the data warehouse or some other system contains all the data necessary to support their metrics. To get a handle on data issues early in the process, executives need to appoint a systems analyst to scout data sources for potential KPIs so executives can decide whether to revise a proposed KPI or create a new system or process to capture the data they want.

Data that are in poor condition and chock full of missing or invalid values, duplicate records, or inconsistent data types might take weeks or months to clean up, if at all. Here, executives need to decide whether the metric is important enough to warrant a major data reconditioning project or should be dropped or replaced by another. Another common problem is that the data required to pop-

ulate a metric are spread across multiple systems that capture and format data differently. Even if the distributed data are in good condition, which they usually are not, the project team must expend significant effort to integrate the data in a consistent fashion.

"Data integration is critically important but it is often overlooked, especially by the business side of the house," says Patrick Morrissey, manager of performance management at Business Objects. "Business people often don't know there is a problem until the technical team reports back that it can't deliver all the relevant KPIs. The larger the organization, the bigger the data integration challenge."

Establish a New Process

In some cases, it is fairly simple to create a new process to capture high-quality data for a KPI. For example, executives who want to track the number of clients that each salesperson meets face to face each week can have the sales department fill out a time sheet of appointments and submit it to the performance dashboard team each week. Similarly, executives who want to track customer satisfaction can commission market research firms to conduct blind surveys and submit the results for inclusion in the strategic dashboard.

However, not all KPIs can be populated with manual data. Sometimes executives may need to commission the creation of a new operational system. For example, executives who want to track daily grocery sales at the SKU level might need to build a multimillion dollar transaction system to obtain the data. Executives need to weigh the value of the KPI and the processes it measures against the cost of building the new system.

Project Delays

Experts say that most strategic dashboards are missing 20 to 30 percent of the data they need when starting out but that this should not delay or postpone the project. The organization can still benefit from the other metrics while it builds systems to capture the remaining data. However, these problems underscore the importance of having technical people on the project team to ascertain the true costs of delivering the required data to populate KPIs.

Standardizing Metrics

Standardizing Terms Is Key to Integration

A big challenge in creating KPIs is getting people to agree on the definitions of terms, such as sales, profits, or customer. As mentioned earlier in this book, standardizing terms is critical if organizations are going to distribute performance dashboards to different groups at multiple levels of the organization and roll up

the results. Without standards, the organization risks spinning off multiple, inconsistent performance dashboards whose information cannot be easily reconciled.

Scope Increases the Challenge

The challenge in standardizing terms increases with the scope of the project and the number of distinct groups the performance dashboard supports. The more groups and people, the more divergence there will be in the definitions of terms, rules, and calculation that compose a metric. Sometimes the only way to resolve these differences is for top executives to get together and hash out a standard with which they all can live.

"We have two distinct businesses, commercial and government, and the measurements each uses are very different, which makes it very challenging to develop corporate-wide standards," says John Monczewski, senior manager of reporting at Booz Allen Hamilton. "We've had strong backing from our CEO to make this work and we've made a lot of progress. But even with that, it takes a lot of time. Our partners have decided to postpone trying to resolve some issues until a later time."

Hewlett Packard TSG faced a similar situation. "We wanted a worldwide metric for cost reduction and we discovered that the operation and finance people had 32 ways to measure cost reduction. Some of these were duplicates, others measured different facets of costs. The project team arranged a meeting between two top financial executives and they agreed to standardize on six metrics for cost reduction," says Summerhayes.

Prioritizing Metrics

Less Is More

One thing many people ask about KPIs is: "How many should we have?" The short answer is: "As few as reasonably possible." There is a natural tendency among organizations to keep adding metrics and never delete any. As a result, they lose their power to grab the attention of employees and focus their behavior on key value-added activities. "There is always a temptation to add more metrics as time goes on," says Direct Energy Essential Home Services' Maddock. "When people have too many metrics to track, the message gets blurred."

Guidelines for Metrics per User

Some experts say that organizations should limit the number of KPIs to between three and seven metrics per user, because most people have difficulty concentrating on more than seven things at a time. However, the optimal number of metrics depends more on a person's role and level in the company than on an arbitrary number.

As a rule of thumb, workers managing operational processes should track fewer metrics, probably less than a handful because they have less time to respond to issues, whereas executives responsible for setting strategic direction should view many more metrics, perhaps a dozen or more. To reduce the visual confusion of displaying a lot of metrics on the screen at once, designers should group metrics in folders or tabs or nest related metrics under a lead metric.

Guidelines for Metrics per Dashboard

From an organizational perspective, a performance dashboard may have dozens of metrics or more. The total number of metrics depends on the size of the organization, the scope of the project, and the complexity of the organization's business model. Large organizations with complex processes may require hundreds of metrics to measure performance accurately.

Hewlett Packard TSG's Summerhayes, for example, says that it often takes multiple metrics to measure key processes from end to end. For example, a repair call resolution metric might require five sub-metrics to capture performance accurately at each stage in the repair process, from taking an order and scheduling the repair to validating the repair and receiving customer payment. One metric may not shed enough insight to help managers know what part of an end-to-end process is experiencing problems.

If in doubt about how many KPIs to create, err on the high side. What does not get measured, does not get done, and what does not get done can hurt the organization. The key to selecting metrics judiciously is to validate that they are aligned with strategic objectives and distribute them to performance dashboards at the appropriate level in the organization. Not all metrics need to appear on the top-level scorecard; most, in fact, should be delegated to lower-level ones.

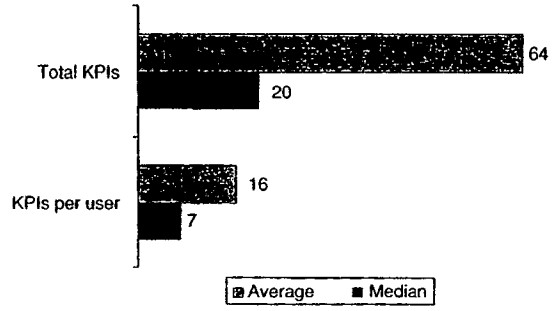
According to research from TDWI, most organizations adhere to the "less is more" rule regarding KPIs. Organizations deploy a median of 20 KPIs in the entire Performance Dashboard and a median of seven KPIs per user (see Exhibit 11.4).

Another common question that people ask is how often they should refresh metrics with new data. The primary factor is the role of the user of the metric and the frequency with which they need to make decisions. If the person is an executive with primarily strategic decision-making responsibilities, then monthly or quarterly updates are probably fine. Of course, if the executive wants to monitor critical operational processes, as many do, then the updates should happen in right time.

Balancing Metrics

The most important characteristic of a KPI is that it leads to positive outcomes. This is easier said than done. A KPI alone will not change behavior or improve

EXHIBIT 11.4 AVERAGE AND MEDIAN KPIS



Organizations that have deployed Performance Dashboards average 64 total KPIs (16 median) and 20 per user (7 median). The median numbers reflect the larger number of organizations. Based on 360 respondents.

Source: Wayne Eckerson, "Best Practices in Business Performance Management: Business and Technical Strategies" (*TDWI Report Series*, 2003).

performance. It is merely a tool to communicate what workers need to do to help the company achieve its strategic objectives and, in the process, improve their position in the company.

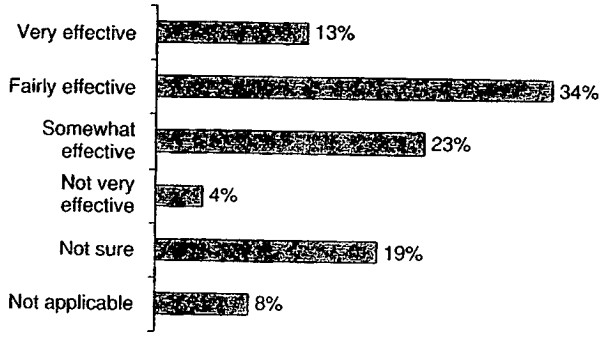
"Measures without meetings are useless," says Maddock. "Unless managers hold regular sit-down meetings with their staff to review performance, nothing will change. Managers need to ask, 'What are you doing about this number? How will we avoid this happening next time?'"

Organizations as a whole appear to be struggling to find KPIs that impact employee performance, according to research from TDWI. Only 13 percent said their KPIs are "very effective" at changing employee performance; 34 percent said they were "fairly effective." Meanwhile, 23 percent said their KPIs were only "somewhat effective," and 19 percent were not sure (see Exhibit 11.5).

Finding Loopholes

One problem is that users often try to circumvent established KPIs out of laziness or personal gain. "Users always look for loopholes in your metrics," says Direct Energy's Maddock. At Hewlett Packard's TSG, to prevent users from "fudging" customer satisfaction numbers, the company hires a market research firm to audit customer surveys.

EXHIBIT 11.5 HOW EFFECTIVELY DO KPIS CHANGE EMPLOYEE PERFORMANCE?



A third of respondents say that KPIs are "fairly effective" at changing employee performance. Based on 360 respondents.

Source: Wayne Eckerson, "Best Practices in Business Performance Management: Business and Technical Strategies" (*TDWI Report Series*, 2003).

Sub-Optimization

In other cases, KPIs may unintentionally undermine each other. For instance, a logistics group that is trying to streamline inventory costs may decide to reduce inventory, which makes it difficult for a retail store to prevent stockouts of fast-moving items—a key performance measure for them. "We've seen our staff take unexpected action to boost a metric that turned out to undermine other measures," Maddock says.

Strategy Maps

One way to avoid having metrics undermine each other and sub-optimize processes is to create strategy maps that show cause-and-effect linkages among objectives and the metrics that represent them. Strategy maps can help executives clarify their assumptions about what drives the business and debug the objectives and metrics that comprise the strategy. If a positive improvement in one metric doesn't lead to an expected bump in a related one, then this is a sign that executives need to examine their assumptions behind the linkages. It may cause the team to revise the metrics or create a new one that sits between the previous two and links to both.

Putting Performance in Context

By definition, KPIs provide context. They show users or groups what is an acceptable level of performance. KPIs embed organizational expectations in the form of targets and thresholds.

Targets and Thresholds

Targets define a desired state at a particular point in time. For example, a target might be a 10 percent growth in net profits by year end. Ideally, targets are set by executives and managers with input from subordinates. Targets can come from many sources: annual budgets, strategic plans, forecasts, industry benchmarks, competitors, or comparisons with a previous point in time, such as last year, last month, or last week. Thresholds, on the other hand, provide an upper and lower range of acceptable performance for each target in a given time period. Thresholds generally operate on a graduated rolling basis; that is, the thresholds gradually increase each period, usually monthly, until the desired end-state or target is reached.

Target Scope

Organizations may want to establish several types of targets for various KPIs. Most KPIs will have an *annual target* that is decomposed into weekly or monthly targets and thresholds. In addition, some KPIs may have a three- to five-year goal that serves as a *stretch target*. This type of target may be applied to operational processes that are critical to the strategy or that need substantial improvement. Executives set stretch targets either by getting input from workers and managers in the trenches, hiring consultants to assess the efficiency and potential of existing processes, or referring to industry benchmarks that define "best in class" performance.

The final type of target is a *visionary target*. This target reinforces a company's vision statement of where it wants to be in five to ten years. The visionary target should galvanize employees and create a sense of unity and purpose that causes the organization to perform at a much higher level. Executives usually set visionary targets in response to competitive threats. For example, President John F. Kennedy's 1961 call to "land a man on the moon and return him safely to Earth" before the end of the 1960s was a response to the Soviet Union's success in putting the first man into orbit.

Creating Realistic Targets

Setting realistic targets is not easy. Targets should not be so challenging that they discourage workers, nor should they be too easy, which creates complacency.

Also, managers should be aware of ways that workers may try to circumvent targets or "game the system." Often setting targets is a matter of trial and error. However, it is best to get as close to realistic targets as possible at the outset to avoid problems.

The best way to create targets is to interview executives and managers in an attempt to understand their goals and objectives for the areas they manage. They may often use last year's targets or goals as a basis for creating targets for the upcoming year. Other sources of targets may be industry benchmarks or customers and suppliers, which may already have standards by which they measure your organization. For instance, a manufacturing company may expect a supplier to deliver 95 percent of shipments on time and in full with proper bar codes or RFID labels.

It is important not to set targets in a vacuum. Although it is tempting for executives and managers to set targets based on their own knowledge of the business, such unilateral goal setting does not engender goodwill among the people who are responsible for achieving the goals. It is critical that executives gather input from employees to understand what targets are reasonable and gain their buy-in to the project. Ultimately, employees are doing the work and should feel that the goals are reasonable.

Technical Considerations

Technically, it is not easy to apply targets and thresholds to metrics. Developers need to create a rules engine that lets users define targets and thresholds for each KPI using a simple Boolean engine (i.e., "if, then, else" rules). The rules need to be applied on a periodic basis to data stored by a repository managed directly by the performance dashboard or a related data mart or data warehouse. This can happen on an event-driven basis (e.g., when the database is updated) or at regular intervals (e.g., every ten seconds, ten minutes, or ten days).

Alerts

The system should also let developers and end-users define rules about when and how users should be notified if parameters are exceeded for a given metric (i.e., alerts) as well as when and how to initiate automated actions based on those alerts (i.e., agents). Visual alerts should be accompanied by text that explains the problem, a report that users can click to see actual data, and a URL to initiate additional action, such as to refresh a report or display contact information for someone to call. The rules engine should accept events from third-party systems as well.

SUMMARY

Agents of Change. KPIs are powerful agents of organizational change. Creating effective KPIs is challenging; it is more of an art than a science. It is easy to create poor metrics that cause performance to decline, business processes to be suboptimal, and users and executives to be frustrated. To avoid these problems, organizations should understand the characteristics exhibited by effective metrics.

Leading versus Lagging. The two primary types of KPIs are leading and lagging indicators. Lagging indicators measure past activity, whereas leading indicators measure drivers of future performance. Performance dashboards should contain a healthy dose of leading indicators to optimize future outcomes.

KPI Characteristics. Effective KPIs exhibit many other characteristics. They are actionable, empowering users to intervene in a process. Actionable KPIs, by definition, must be updated frequently enough so that empowered users can take action in a timely manner. Also, KPIs must be few in number, easy to understand, and have an owner who is accountable for the outcomes. KPIs also put performance in context by applying targets and thresholds to performance. The targets may be based on the annual budget or plan, three- to five-year strategic plans, or a top executive's long-term vision for the company. Targets are typically applied using thresholds that define low and high levels of acceptable performance.

Far-Reaching Impact. Effective KPIs trigger positive change. They sit at the nexis of many core processes. When the organization focuses on a KPI, it creates a ripple effect of positive changes throughout the organization, especially when the CEO actively monitors and manages that KPI. Effective KPIs are also based on corporate standards so they can be integrated across performance dashboards, if needed. Standard definitions and rules for calculating metrics enable companies to aggregate data from lower to higher level views in the performance dashboard.

Reality Check. It is important to select KPIs that can be populated with data that do not undermine each other or create a loophole that lets users cheat the system. One way to vet KPIs is to create a strategy map that defines cause-and-effect linkages among objectives in the performance dashboard. Because KPIs lose their impact over time, organizations must continually reevaluate and refresh them. This involves monitoring system usage and getting feedback from members of the performance dashboard steering committee.

NOTES

1. Paul Niven, *Balanced Scorecard Step by Step: Maximizing Performance and Maintaining Results* (John Wiley & Sons, 2002), p. 116.
2. David Parmenter, "The New Thinking on KPIs: Why You May Be Working with the Wrong Measures," BetterManagement.com.

CHAPTER 12

How to Design Effective Dashboard Screens

This chapter focuses on how to design the "look and feel" of a performance dashboard so that it is easy to use and visually appealing. The visual interface—what users can see and do on the screens—can make or break a performance dashboard.

Workers do not have to use a performance dashboard; it is not a requirement for doing their jobs. They will use it if it makes them more productive and effective, but they will shun it if it is not intuitive and consumes too much time and effort for the value it delivers. They will go elsewhere to obtain the information they need or get by on intuition and gut feel.

Creating dashboard screens is challenging, and few people have the background in visual design techniques required to do a good job. Most rely on their own visual instincts, get feedback from users, and go from there. Unfortunately, this usually produces a visual interface that is cluttered and complex, forcing users to work too hard to discern the pertinent facts they need to know. Surprisingly, few organizations hire visual design experts to lend advice, and few have usability labs that observe workers using a piece of software and recommend enhancements to the visual design.

Nevertheless, designing dashboard screens and functionality is rewarding. It is the fun part of building performance dashboards, the grand finale when users finally see the fruits of the initiative and get excited about using the new system.

GENERAL GUIDELINES FOR MANAGING THE DESIGN PROCESS

Focus on Data and Process First

It is a fact that the quickest way for a magazine to boost sales is to put a picture of a pretty woman on the cover. In the same way, it's no exaggeration to say that a pretty "face" sells a performance dashboard. A surefire way to get executives excited about a dashboard project is to show them a mockup of a dashboard screen with their metrics wrapped in fancy graphics. However, selling a dashboard screen and delivering a performance management system are two different things. A project team should be wary of raising users' expectations too early in the process.

"It's often too easy to create a fancy-looking dashboard and get executive support. But if you don't have real data to put into it, it's really just smoke and mirrors. It's important that you do the necessary work to get to the point where the glitz is functioning properly. That includes defining metrics and targets as well as getting systems data. If we had gone in with glitz and glamour before building the infrastructure, we would have set unrealistic expectations and wouldn't be as far along as we are now," says Kevin Lam, performance manager at TELUS (see Spotlight 12.1 and Exhibit 12.1).

SPOTLIGHT 12.1 USING STRATEGIC DASHBOARDS AT THE DEPARTMENTAL LEVEL

In 2001, TELUS, a leading Canadian telecommunications company, implemented a strategic dashboard in its operations group that has enabled the company to increase the productivity of workers significantly, including field technicians, engineers, customer service representatives, dispatchers, and their supervisors and managers. Specifically, the Web-based scorecard helped increase workers' productive hours by 9 percent and reduce the time to complete a job by 16 percent, saving approximately $1 million to $2 million a month.

"The scorecard was one of the primary catalysts driving these productivity gains," says Kevin Lam, manager of business performance at TELUS. "It's given us line-of-sight visibility into our daily performance from our vice presidents all the way to individual technicians. Without the measurements and structure in place, we would have limited visibility on where we stand or how or what to improve."

TELUS kicked off the dashboard project in 2001 in response to a company-wide initiative to cut costs and improve operational efficiencies. The initiative was designed to reduce overhead and make the firm more competitive after a series of mergers, followed by the economic downturn in 2000 that hit the telecommunications industry particularly hard.

TELUS's goal was to reduce operating costs without long-term negative impact to government-regulated customer service levels. "We had tinkered with Balanced Scorecards as a way to measure and manage worker productivity, but now we had no choice. We had to be more efficient or lose market share," says Lam.

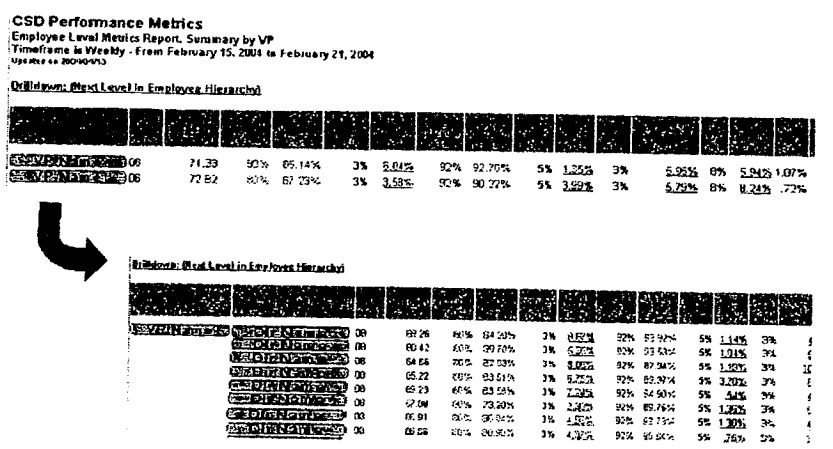
SPOTLIGHT 12.1 *(CONTINUED)*

Today, the firm provides "actionable scorecards" to 300 managers with visibility to over 2,000 front-line team members. Every scorecard displays the same metrics and targets, but the values differ based on a user's position in the firm. The information rolls up several levels from technician all the way to the executive vice president. This way users can see how their performance contributes to the overall productivity of the business unit, says Lam.

The system also lets users drill into and slice the information any way they want. They can view the information by level, metric, time period, or interval (i.e., daily, weekly, monthly). If required, they can even drill into transaction data, such as a trouble ticket, to find specific information about an incident. The information values are color coded so users can see how their performance compares with predefined targets.

The system replaced a hodgepodge of manually crafted Excel reports that never delivered consistent information in a timely or detailed fashion. "We could never have achieved significant productivity gains without changing the way we deliver and use information," says Lam.

EXHIBIT 12.1 A STRATEGIC DASHBOARD FOR THE OPERATIONS GROUP AT TELUS



The Performance Dashboard at TELUS Corp. is geared to an operations department. Everyone in the department, from vice presidents down to field technicians, receives the same display with the same metrics, but each view contains different values based on the person's role and level in the company. The system aggregates data from the lowest levels of the organization to the top levels. The view above is designed for vice presidents. By clicking on their name, vice presidents can drill down to see results for the directors that report to them, and so on down the line. (Data do not reflect actual results.)

Source: Courtesy of TELUS Corp.

When gathering requirements for a performance dashboard project, it is critical to focus on what information users need and how they plan to use it rather than how they want to view it. Focusing on screen layouts too early in the process restricts your ability to design an optimal visual interface; it is best to show a screen mockup at the end of the process once developers have a solid understanding of the information that users need to manage the business processes and projects for which they are responsible.

Know Your Users

It is one thing to build a robust performance dashboard with all the bells and whistles, and it is another to expect your workers to use it. As we discussed in Chapter 3, it is important to segment users by their technical and analytical capabilities and preferences. Just because one segment of users finds the screens easy to use does not mean that all segments will.

Executive Requirements

For example, to ensure that senior executives at Hewlett Packard Technology Solutions Group (TSG) would adopt its strategic dashboard, the project team trained executive administrators to use the tool and investigated how executives prefer to receive quantitative information. They discovered that some executives prefer to receive reports via e-mail, while others like to print out the views, and others prefer offline electronic versions that they can examine while traveling. "We tell executives, don't worry about accessing the tool, we'll train your assistants to get you the information," says Martin Summerhayes of Hewlett Packard TSG.

Power User Requirements

Although executives may need extra hand holding, power users need additional leeway. Power users are usually not satisfied with functionality geared to average users, who primarily want to monitor data, not analyze it. Although well-designed dashboards let users drill from high-level views to detailed transactions, the pathways are fairly structured and circumscribed. To satisfy power users who want unlimited freedom to explore, it is often necessary to let them access data and information directly using whatever tools they want. For example, power users at Quicken Loans use desktop OLAP tools to access the data warehouse and multidimensional cubes, whereas power users at Hewlett Packard TSG prefer query and reporting tools.

Make It Simple

Ironically, although fancy graphics and charts help sell performance dashboards, the "glitz" gets in the way once workers begin using the system. Designers even-

tually strip out items from screens to reduce their "busyness" and complexity. What is left may not look overly appealing, but it is quick and easy to use.

"Simple is best. We did a project we thought was spectacular, but users thought it was too complex. We created stoplights, up and down arrows, but it was too fancy. Some guys are new to this stuff so we had to make it foolproof," says TELUS's Lam.

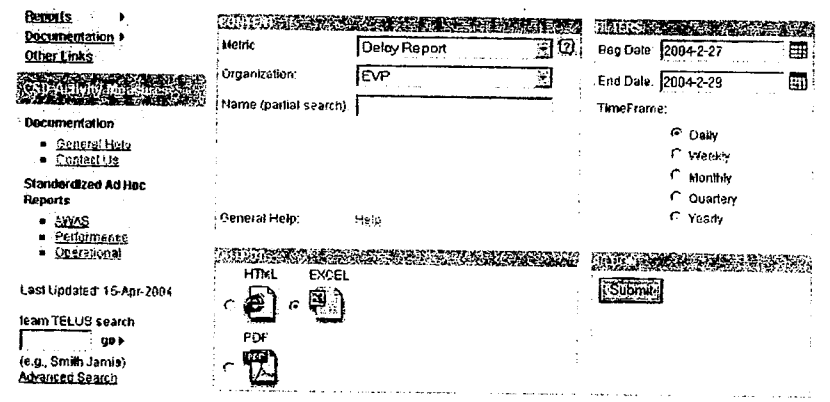
Because TELUS's dashboard was designed for the company's operations department, Lam's team took out all graphics and charts and displayed only numbers, which were color coded, to make the performance dashboard look more like an operational report. Also, to prevent workers from getting lost in drill-down paths, every screen has the same layout and column names, and information never disappears, it is only added. Lam calls this "line of sight drill through." For example, when executives drill from a VP level to a Director level, they see rows of director-level performance data nested underneath the rows of VP-level data. This way, they always know where they are in the organizational hierarchy.

Lam's team also simplified the way users request ad hoc reports. They created an uncluttered screen that steps users through four prompts: 1) users select the metric and organization using drop-down list boxes or a keyword search, 2) users type in a date range or use a calendar function, 3) users select the output format (i.e., Excel, HTML, or PDF), and 4) users click on the "submit" button (see Exhibit 12.2).

Optimize Each Application

As described in Chapter 1, a performance dashboard is three applications in one: a monitoring application that conveys critical information quickly, an analytical

EXHIBIT 12.2 SIMPLIFIED REQUEST SCREENS



Source: Courtesy of TELUS Corp.

application that allows users to navigate and analyze large volumes of information, and a management tool that improves communication among executives, managers, and staff. When designing dashboard screens, it is important to know which of these three applications you are working on. Each application uses a different visual paradigm and requires different functionality.

Here are some guidelines for designing the "look" (i.e., screens) and "feel" (i.e., functionality) for each application in a performance dashboard. This book has addressed many of these items already, but here is a condensed and consolidated version.

Monitoring Application

- **Keep it selective.** Display only critical metrics that users need to achieve their objectives. Do not overwhelm users with too many things to monitor at one time.
- **Keep score.** The metrics should visually express *performance state* (e.g., superior, good, or bad), *performance direction* (e.g., trending up, down, or steady), and/or *performance progress* (e.g., gap between performance and targets). Operational dashboards will also display actual data or text.
- **Keep it sparse.** Do not clutter the screen with unnecessary or overly fancy graphics. Graphics should convey only the relevant information with a minimum amount of ink.
- **Highlight exceptions.** Use colors or symbols only to express out-of-bounds conditions or performance states.
- **Alert users.** Proactively notify users of out-of-bounds conditions via the Web, e-mail, or other high-impact channels.
- **Customize it.** Dynamically generate screens that are generically geared to every individual's role and responsibilities.
- **Personalize it.** Allow users to personalize the customized screens by selecting the objects they want to view from a predefined list.
- **View properties with one click.** Let users click on a metric to view its properties, such as how it was derived, who owns it, when it was last updated, and so on.
- **View information with one click.** Let users click on a metric name or symbol to view the information underneath in table or chart format.
- **Provide "right-time" information.** Although this is more of an infrastructure issue, it is critical to a monitoring application. Design elements must be populated with "right-time" information so users can proactively manage and optimize processes.

Analysis Application

- **Make it interactive.** Make sure users can switch views and contexts, access reports, and drill from high to low levels of detail using simple point-and-click techniques.
- **Make it structured.** Do not allow users to get lost in the information or have to drill up and back down when switching dimensions or formats (i.e., table to chart). Create easy-to-use prompts and predefined drill paths that structure how users navigate the information.
- **Make it guided.** Guide novice users through the process of analyzing and acting on performance information or finding relevant reports using wizards, context-sensitive recommendations, or online help.
- **Make it detailed.** Provide seamless and dynamic access to transaction data stored in a data warehouse or operational system.
- **Support multiple channels of delivery.** Allow users to access the dashboard system via alternative interfaces, including e-mail, wireless devices, or desktop applications.
- **Support disconnected usage.** Allow users to disconnect from the network and take the dashboard system and data with them for further analysis.
- **Support advanced analytics.** Let users perform "what-if" analyses, create and test scenarios, build forecasts, or create simple statistical models in the system or via third-party applications (e.g., Excel, data mining tools, or advanced visualization techniques).

Management Application

- **Publish it broadly.** Provide open access to the results throughout the company, especially among peers so they can compare their performances.
- **Exchange it widely.** Exchange performance information with other groups that have other dashboard systems to improve coordination and cross-pollination of ideas.
- **Compare to plan.** Use targets and goals from the budget, strategic plan, forecasts, or benchmarks so workers can gauge their progress and improve the accuracy of their forecasts.
- **Attach commentary.** Allow users to attach comments to dashboard views and respond to those comments. These threaded discussions provide an audit trail of ideas, decisions, and actions, which is useful for regulatory purposes as well as for new managers who want to learn how to manage specific processes.
- **Make it collaborative.** Let users set up a workflow that sends published dashboard views to a list of users for review and approval.

- **Make it timely.** Update the information frequently enough so users can take action to fix problems or capitalize on opportunities before it is too late.
- **Build in recommendations.** Build in recommendations for actions users should take based on the context of the information in the dashboard system.

Hire or Train Visual Designers

To optimize the design of the performance dashboard, it is important to get somebody on the team who has visual design expertise. Although few teams can afford to hire someone full or part time, they may be able to hire a consultant to provide assistance. Ideally, the consultant can educate the team about basic design principles and provide feedback on initial designs. It is also helpful for someone on the team to read articles and books on the topic or take a course on visual design before starting the process.

Usability Labs

In the best of all worlds, your company has a usability lab that can observe workers using the dashboard system in a laboratory setting. These labs use cameras to record hand and eye movements and interviews to determine the intuitiveness of an application and where users most get hung up in the visual interface. Usability labs usually provide good suggestions to improve even the most sound designs.

"We used [our company's] usability lab twice. We went initially to get advice about how to design the interface and get the dashboard up and running. Then, we went a few months ago after our dashboard went live to have it tested with real users. Some of the advice we got involved making small cosmetic changes, for instance that we should move some icons around and clean up the layout. But other advice gave us a better understanding of how the system behaves from the perspective of business users and where they find it confusing. We learned that people had difficulty drilling down into our data using parameterized drop-down lists. So now we're trying to address these issues in subsequent upgrades," says an IT director at a financial services company.

Use Prototypes

Once you have gathered all the information requirements and defined the metrics and targets, you are ready to design the look and feel of the dashboard system. The best way to get the process going is to deliver users a strawman proposal based on solid design principles. Then, let users tweak the layout and design as required but do not let them overhaul your design completely (unless it is really poor!). Also, do not start with a blank screen or let users create the strawman on their own. They have fixed ways of viewing information, usually limited by what they've grown accustomed to seeing and doing over the years.

However, sometimes, there is no way around user biases. In one company, executives insisted that the opening scorecard screen look exactly like the paper scorecard they had created during the strategy mapping process. Although this made sense in many ways—the company had published posters of the initial scorecard and hung them in the hallways throughout the organization—it forced the team to create a custom solution, which both the business users and technical team did not want to do.

SPECIFIC GUIDELINES FOR CREATING THE VISUAL INTERFACE

The first section of this chapter provided general guidelines for approaching the design process. The following section provides specific recommendations on how to create an effective visual interface for the performance dashboard.

First Impressions

First impressions make a big difference, today more than ever. In our busy, fast-paced lives, if something does not catch our eye immediately and draw us inward, we ignore it and move to something else. For this reason, it is imperative to spend considerable time and effort designing the initial screen of a performance dashboard. This initial view conveys the breadth, depth, and usability of the entire performance dashboard. If it does not resonate with users or portray the right information, they may not use it, or only use it begrudgingly.

Painterly Touches

A good dashboard designer is like an expert painter who conveys an image or evokes an emotion with a single stroke of the brush. The art of visual design is working sparsely, making sure that every element and figure on the screen is there for a purpose. Visual designers are ruthless in stripping out colors, shapes, images, or decorations that distract users or do not convey vital information.

Although few of us have training as artists or visual designers, there are a number of things we can do to enhance the visual appeal and usability of the dashboard and scorecard screens we create. The following are guidelines and techniques for creating screens that jump out and grab users, not require them to squint at and study the screen to discern relevant facts.

Much of the advice in this section comes from Stephen Few, principal of Perceptual Edge, a consulting firm that specializes in information analysis and presentation, and a faculty member of The Data Warehousing Institute. Few has written an excellent book entitled *Show Me the Numbers* (Analytics Press, 2004) and several articles in *Intelligent Enterprise, DM Review,* and the *Business Intelligence Journal* that are worth reading. He is also currently working on a book

titled *Information Dashboard Design: Beyond Gauges, Meters, and Traffic Lights* scheduled for publication by the end of 2005. Few says he is a dedicated follower of Edward Tufte, whose 1983 book, *The Visual Display of Quantitative Information*, laid the conceptual foundation for how to display information clearly and cogently.

1. Display Information on a Single Screen

The first and toughest goal of a dashboard designer is to squeeze the information onto a single screen. Users should not have to scroll down or open another screen to view critical information. All relevant information should be instantaneously viewable.

> The fundamental challenge of dashboard design is to display all the required information on a single screen, clearly and without distraction, in a manner that can be assimilated quickly. If this objective is hard to meet in practice, it is because dashboards often require a dense display of information. You must pack a lot of information into a very limited space, and the entire display must fit on a single screen, without clutter. This is a tall order that requires a specific set of design principles.[1]

2. Minimize the Number of Metrics and Objects on the Screen

To put all vital performance information on a single screen, the designer must have a clear understanding of the information users need to monitor, its importance to them, and the order in which they want to see it. This helps designers determine the priority of information and its placement on the screen.

How Many Is Too Many?

Some experts say that dashboard screens should only have between three and seven metrics to have the greatest visual impact. However, few people want to restrict the number of metrics arbitrarily and risk excluding those that meet bona fide business requirements. To accommodate both principles, many designers nest lower priority metrics under higher priority ones.

Portal-Based Dashboards

Another way to prioritize metrics is to let users do it themselves using a dashboard's personalization capabilities. This lets users pick metrics that they want to see from a pre-approved list.

Some organizations also let users add other objects, such as documents, alerts, and Web links, turning the dashboard screen into a makeshift portal. Conversely, many organizations let users create personalized views of the corporate portal. One of the most popular elements to customize a corporate portal with is a KPI

chart. So, here the difference between dashboard and a portal begins to blur. In any case, a personalized dashboard motivates workers to visit the application more frequently because it contains information and objects they deem important. The downside is that users always add too many objects to the screen, creating clutter and minimizing its visual impact.

3. Keep Graphical Icons Sparse

Graphical Elements

The only way to pack a lot of information onto a single screen is to abbreviate or summarize it. This is usually done by representing metrics as graphical elements. This keeps designers from having to put actual data onto the dashboard screen, which takes up valuable real estate and crowds the view.

However, most organizations get carried away when using graphical elements, spurred on by vendors who populate their dashboard solutions with eye-popping graphics that do a good job of catching attention but a poor job of communicating pertinent information quickly. Part of the problem is that most vendors try to simulate an automobile dashboard on a computer screen instead of focusing on the fundamental principles governing the visual display of information.

"Caught up in the race to out-gizmo one another, few vendors have taken the time to gain more than a superficial understanding of effective dashboard design. Without this knowledge as a foundation, these dashboards are destined for the trash heap," says Few.

Few has very specific recommendations for using graphical elements, or graphs, for short. As a general rule of thumb, every designer should ask: "Do the graphs provide the clearest, most meaningful presentation of the data in the least amount of space?" He adds that graphs should:

- Fit any size space
- Be appropriate for the task
- Display measurement, context, and state

Gauges, Thermometers, and Stoplights

Few dislikes radial gauges because they waste a lot of space due to their circular shape. "You can't put a lot of radial gauges side by side," he says. In this regard, Few prefers thermometers, which are linear and fit in a compact space. However, he says that most thermometers are overly decorative. "They are generally designed to look so much like the real thing that space is wasted on meaningless realism."

Less is More

He objects to stoplights for much the same reason, saying there is no reason to display three lights when one will suffice. "Don't waste visual content with an entire stoplight, just show a single icon (for example, a circle) next to a metric," he says. Going one step further, Few recommends not showing a symbol or icon at all unless it is important to do so, such as when performance falls below target. Users subconsciously recognize that the absence of an object carries meaning, like "no news is good news." In this example, users understand that a metric without a circle next to it reflects acceptable performance and there is no need to examine the data or take further action.

4. Display Context in Abbreviated Form

The main purpose of dashboard graphics is to display performance in context so users can quickly ascertain what is going on.

There are three aspects to context: 1) the *performance state*, which indicates whether performance is good or bad according to predefined thresholds; 2) the *performance trend*, which indicates whether performance has improved, declined, or held steady during the prior period; and 3) the *performance variance*, which shows how performance compares with the target for that period (see Exhibit 12.3 for a dashboard screen that displays all three contexts).

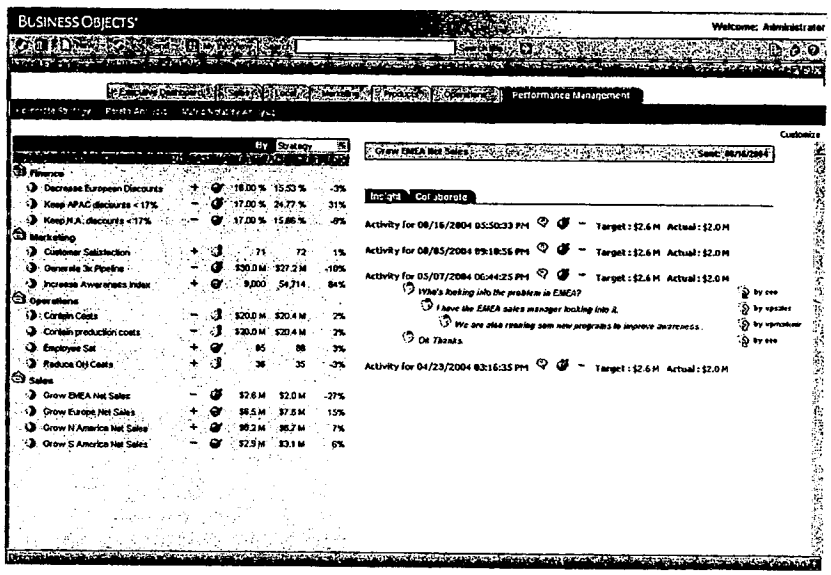
Performance State

The depiction of performance state is usually done by applying colors to a graph, symbol, or the metric itself (i.e., the text label). Performance states correspond to thresholds set by managers to identify ranges of performance. For example, a sales organization might have four performance states based on four ranges or thresholds of performance against a single target and associate colors or symbols with each state:

1. "Urgent" indicates that sales fell 10 percent or more below target (red)
2. "Caution indicates that sales were 10 percent or less below target (yellow)
3. "Normal" indicates that sales were up to 10 percent above target (green)
4. "Superior" indicates that sales were 10 percent or higher above target (blue)

An initial dashboard screen for an executive might display performance state by putting a color-coded circle next to the name of each metric, and that is it. A second-level screen might display performance state using color-coded numbers in a table or by showing a trend line in a chart whose background is painted according to threshold ranges.

EXHIBIT 12.3 DISPLAYING PERFORMANCE STATES



This Balanced Scorecard screen displays metric name, performance trends, status, target, actual, and variance from target from left to right in the left-hand column. The dashboard uses a colored symbol to indicate trend and both a colored circle and an icon to represent status to accommodate color-blind people. The right-hand panel embeds a threaded discussion on metrics where performance is below target.

Source: Courtesy of Business Objects S.A.

When using more than three performance states, it's wise to embed a key in the dashboard screen that translates the encoding. However, a key also forces users to work harder than they want. They have to study the screen to decipher its contents instead of being able to glance at it quickly and ascertain performance.

Performance Trend

A performance trend indicates the direction of performance data for a prior period. The trend indicates whether performance is moving up, down, or holding steady. Each "trend state" also needs to be calibrated with a threshold or rule that defines what is "up," "down," or "steady." The best way to show performance trends visually is with a symbol, such as an arrow or plus (+) and minus (–) signs.

An arrow supports a wide range of trends because it can be pointed in any direction. Plus and minus signs support only two trends, up and down. However, the absence of a plus/minus sign could also indicate "steady."

Hewlett Packard TSG displays both performance state and trend on its scorecard. It encodes block arrows with four different colors (i.e., red, green, blue, and white) to indicate performance status and points them in three different directions (i.e., up, down, and sideways) to convey performance trends (see Exhibit 9.2 in Chapter 9). This use of color-coded arrows is effective because it shows both state and trend using one symbol. However, since this does not work for color-blind people, users can configure the system to display data values instead of arrows or display data values only when they hover their cursor over the arrows.

Performance Variance

Performance variance compares actual performance with a target and calculates a variance. The target and variance can be displayed textually as numbers in columns or graphically on a line chart using two lines (i.e., one for targets or thresholds and one for data values) or a bar chart by plotting a target line across the bars. Performance variance can also be displayed using a simple graph, such as a thermometer or bullet graph (see below.)

Many companies like to apply multiple targets to a single metric. For instance, an organization may want to compare this month's net sales against the annual budget and results from the same period last year. Few recommends applying no more than two targets per metric to avoid creating overly complex graphical elements.

5. Use Color Intensities not Hues

Color has four characteristics that are helpful to know when one is designing dashboards:

- **Hue.** The color, such as red, white, or blue.
- **Lightness.** The shade of the hue, ranging from light to dark.
- **Saturation.** The amount of hue applied to a given area, ranging from little (pale) to total saturation.
- **Intensity.** Refers to both lightness and saturation, because each can be manipulated to increase or decrease the perceived intensity of a hue.

Few believes it is more effective to use a single hue with multiple intensities rather than multiple hues to depict performance states. It does not matter which hue is used—red, black, or blue—as long as it does not change. One reason to

use different intensities instead of different hues or colors is to give the dashboard screen a consistent look and feel. Another reason is to increase the contrast between things that really need highlighting, such as an urgent, out-of-bounds condition, and those that do not. For example, an alert encoded as a red circle immediately catches a viewer's attention when the rest of the screen and graphs are cast in shades of gray.

A third reason to use intensities instead of hues is to accommodate color-blind workers, most of whom cannot differentiate between red and green. Ten percent of men and one percent of women are color blind to some degree, which makes using hues alone to depict performance states problematic. However, color-blind people can distinguish between intensities of the same hue. So one way to communicate state without adding an extra symbol is to use different intensities of the same hue. For instance, deep red can signify an urgent problem and dimmer red a less urgent one. Some dashboard designers add symbols or simple graphs to accommodate color-blind workers, but this is overkill and leads to cluttered screens.

6. Pay Attention to Position and Placement

The way designers position or sequence information on the screen reinforces its meaning. Position and placement become another way to communicate meaning and enhance the value of the dashboard.

Top Left to Bottom Right

According to Few, elements in the top left quadrant and the center get the most attention when set apart visually from what surrounds them. Next is the upper right and lower left quadrants, followed by the bottom right. Therefore, designers place elements that deserve more prominence in the upper left or in the center of a screen and leave plenty of white space around the objects. Designers also use arrows to step people from one section of the screen to another if there is a logical sequence or flow to the data. They also sometimes number elements to indicate a visual flow.

Groupings and Flows

It also helps to group like elements together on the screen to show that they are related. The same goes for items that need to be compared. Placing them too far apart makes the user's eyes work too hard to see and compare the items. When designers cannot place items together, they use hues, shapes, or fonts to show which elements are related to each other.

SAMPLE TECHNIQUES

Two Effective Graphical Elements

Few advocates two techniques that circumvent many of the problems with graphical elements today: sparklines and bullet graphs.

Sparklines

Sparklines are the brainchild of Edward Tufte and are ideally suited for performance dashboards because they give a basic sense of trends over time, skipping superfluous detail. Sparklines are designed for time-series data (i.e., measurements that occur in regular intervals over time), but they do not contain a quantitative scale. Sparklines are good when users require a quick, high-level perspective of historical performance in a highly condensed display.

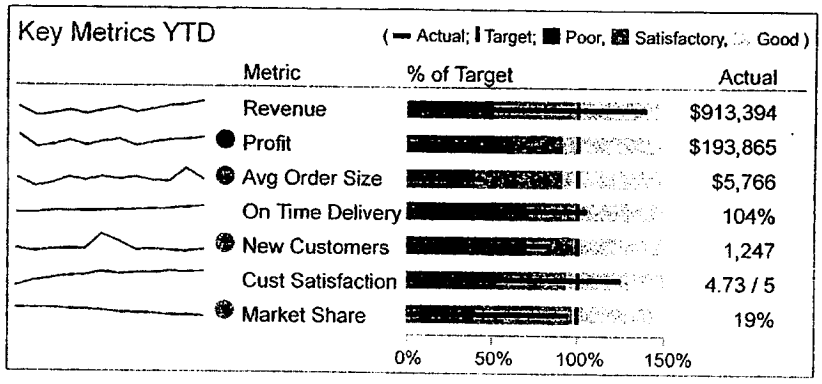
Bullet Graph

A bullet graph is a linear widget, invented by Few, that uses the following: a single bar or data point to show actual performance, color intensities to show performance levels or thresholds, and one or more short lines to show comparative measures, such as a target. Bullet graphs let users quickly evaluate performance in context (i.e., comparisons and thresholds). They also take up less space than most simple graphs (e.g., gauges, meters, and dials) and can shrink to fit into a compact space without losing their legibility. However, because they are new, users may need some training to interpret them and become comfortable using them.

Sample Dashboard

Exhibit 12.4 shows a portion of a dashboard created by Few that applies the visual design principles and display techniques described above. Few's compact dashboard contains seven metrics for maximum impact. Each metric has an associated sparkline, a bullet graph, and actual data. (The only thing missing is the actual date or time interval being measured, although monthly is implied.) The sparklines show performance trends for the past 12 months. The bullet graphs show actual performance compared with year-to-date targets and thresholds. A red circle (which is the darkest circle in the exhibit) appears next to the names of metrics in which performance is below the target for the period, but circles do not appear next to metrics that meet or exceed monthly goals. The intensity of a circle's hue indicates the degree to which the metric is below target. For example, the "profit" metric has a circle with the most intense hue because it is below the bottom threshold, as indicated on the bullet graph. The other circles

EXHIBIT 12.4 STEPHEN FEW'S SAMPLE DASHBOARD



are colored with a less intense hue because their metrics are only slightly below target.

Few also sequences these elements from left to right in a way that tells a story. Users can view 12-month trends, followed by an alert, which prompts them to read the bullet graph to compare performance with targets and actual data. I would have preferred to see the metric names on the far left side, kind of as a row header, but Few placed the metric names between the sparkline and performance bar to simplify the screen. Because the metric names sit in the middle of these two graphical elements, there is no need to add a separate label for each element, which reduces clutter. It also removes the temptation to add row or column lines between the graphical elements as a visual divider, another design faux pas.

Although it may take a few minutes to become oriented to Few's dashboard, the value is obvious. It conveys much more information in a compact space than most dashboards. In a glance, users can view 12-month performance trends for each metric, month-end data values, and comparisons with targets and thresholds. Few's alerts jump out at users because they are colored with a different hue (red) than the rest of the elements, which are shades of gray. (Note: since the book is printed in black and white, these different hues are not distinguishable in Exhibit 12.4.) Also, the alerts (i.e., an abbreviated stoplight) only appear when an out-of-bounds condition exists. Less is more.

Although you may not be inclined to use the widgets or style in Few's dashboard, it clearly demonstrates basic principles of visual design and offers alternative ways of displaying information that most people have not considered.

NAVIGATION TECHNIQUES

Drill Paths

From the scorecard screen, which represents information graphically, users should be able to drill down effortlessly to see actual data. Unfortunately, software vendors have yet to devise a standard way to perform drill-downs, and many techniques employed today are not intuitive.

One-Click Drills

The ideal way for users to drill down is by left clicking on the metric name, indicator, or alert or whatever on the screen demands their attention. They click once and the information appears in the form of a table or chart that plots performance over time.

Unfortunately, few performance dashboards make it this easy. Some require users to right click, which is an awkward movement for many users. This causes a dialogue box to pop up that usually contains too many options and drill paths for users to absorb or remember. Other performance dashboards require users to click on one or more drop-down list boxes to specify the parameters of their drill and then click a "go" button. Although power users like having multiple drill paths and parameters, casual users do not.

Customizing Drill Paths

Rather than provide users with unlimited navigation, it is wise to discover all the possible drill paths users need in advance and bake them into the system. The technical team can then select the drill paths that each department or role requires and associate them with individual users' security profiles. This way users only see the drill paths that they need and aren't overwhelmed with too many options. Administrators can always expand the number of drill paths it makes available to departments or individuals, even providing unlimited navigation. This approach eases users into the system, delivering new functionality and navigational paths only when they are ready to use them.

Getting Lost

Another problem with dashboard navigation is that users often drill to a certain point and forget where they are. For instance, I watched one user drill down on a series of charts, but when he wanted to switch to a table view he had to drill back up the hierarchy and drill back down in the table view mode. (Actually, he could have switched formats in one click but did not know how; it was not

intuitive.) This also happens when users switch subject areas or departments, say from viewing customer profitability by region to viewing product sales by channel. It also occurs when users drill through to data stored in another system, such as a data warehouse or transaction system and land in a separate window with different navigational techniques (if any at all) without a clear way to get back to their starting point.

To avoid having users get lost in the system, designers should dynamically map a user's navigational path through the information so they always know where they are, where they have been, and how to get back. These maps can be similar to computer pathnames or spider webs, for instance. Users should be able to click on any part of the map to return to a previous view.

Think Like a 12-Year-Old

To deliver high-quality performance dashboard interface, designers should think like a 12-year-old (or younger perhaps). Designers who spend every working hour building an application forget how alien the system is to someone using it for the first time. Designers need to build the system not for someone like themselves, but for a 12-year-old son or daughter who uses computers but not regularly or intensely (except perhaps to play computer games!). Ultimately, the key is to prevent users from getting "lost" in the data and overwhelmed by system functionality.

SUMMARY

Dashboard design is like putting icing on a cake. It is the fun part of building a performance dashboard. It is how you really connect to users. However, the design—no matter how well executed and visually attractive—is worthless if the team has not first done the hard work of creating effective metrics and targets and populating them with clean, valid data. The most important principle to remember when designing dashboard screens is "Get the data right first!"

With a solid foundation, dashboard designers can then begin the process of creating layouts and screens. The most common mistake is to make things too complex. K.I.S.S., or "Keep It Simple, Stupid!," should be the motto of every dashboard designer. Although many vendors sell glitzy dashboard displays that tantalize users with fancy graphics, most users prefer less glitz and more content once they begin using the system. Operational dashboard users take this a step further: they usually prefer text or numbers rather than graphics, which they find get in the way.

A good dashboard design conveys a lot of information with as few elements as possible. Users should be able to glance at the dashboard to view the infor-

mation they need to achieve their objectives. If they have to scroll down or switch screens to assess their progress, they get frustrated. The screen should display a minimal number of elements in a compact way. This means representing metrics and context using simple graphs, hues, intensities, symbols, and charts. These graphical elements should be streamlined, not decorative, so they convey vital information quickly. They should also be placed on the screen or grouped together in a way that conveys meaning.

Colors or hues should be used sparingly, only to highlight out-of-bounds conditions. Graphical elements should use different intensities to display performance states, different symbols (e.g., arrows, icons) to convey performance trends, and different graphs to display performance variances.

Finally, the dashboard screen should provide intuitive navigation that lets users click once to drill down on graphical elements to view actual data. Drill paths should be structured so users cannot easily get lost in the information. The dashboard should dynamically map the user's path through the data so they always know where they are, where they have been, and how to get back.

NOTE

1. Stephen Few, "Dashboard Design: Beyond Meters, Gauges, and Traffic Lights" (*Business Intelligence Journal, 2005*).

CHAPTER 13

How to Link and Integrate Performance Dashboards

APPROACHES TO INTEGRATION

A common question that people ask about performance dashboards is how to integrate and link them. The question usually has one of two sources. Either they have read about the Balanced Scorecard methodology and want to know how to "cascade" scorecards throughout the organization, or they want to integrate two or more existing performance dashboards that were designed and developed independently.

In either case, the task is the same: align multiple performance management systems so everyone is working off a consistent set of information. When this happens, an organization starts to use information strategically. It can roll up or aggregate performance results from lower levels of the organization to higher levels and give executives an accurate and comprehensive understanding of overall organizational performance at any given moment. It also lets managers and staff compare their performance to internal peer groups, increasing motivation and performance.

Centralized versus Federated

Organizations can align and link performance dashboards using either a centralized or a federated approach. The centralized approach creates a single performance management system that spawns multiple, dependent dashboards and scorecards. The federated approach, on the other hand, dynamically integrates existing performance dashboards that run on different BI platforms and are administered by different technical teams.

The centralized approach works best in companies with centralized or hierarchical cultures in which a CEO or business unit head can get everyone to standardize on a common set of metrics and BI platform. In contrast, the federated approach works best in companies with more decentralized cultures where business units, departments, and workgroups enjoy considerable autonomy and frequently build their own IT systems. In reality, most companies neither have an entirely centralized or decentralized organizational structure, but something in between. As a result, the majority of organizations use a blend of both centralized and federated approaches to deliver a consistent set of performance management metrics.

CENTRALIZED APPROACH

The centralized approach builds integration into the design and project plan so all performance applications, whenever and wherever deployed, run on a common business and technical foundation, sharing common metrics, data, and functionality, and work together harmoniously.

In a centralized approach, performance dashboards are not physically distinct systems or applications; they are simply customized views of performance information generated by a single performance management system. The system dynamically generates custom views of metrics and information based on each user's role or security profile. The centralized approach makes it easy for technical teams to rapidly create multiple, customized performance dashboards for every individual and group in the organization.

Top-Down Deployment

The best way to deploy performance dashboards using a centralized approach is to work from the top down, starting at the executive level and then working down the organizational hierarchy in a systematic fashion.

Cascade Development

The first performance dashboard—or executive dashboard or scorecard—translates the organization's strategy into key performance indicators (KPIs) that measure performance at an enterprise level. The corporate view then serves as a template for all subsequent performance dashboards. Each business unit or group reuses KPIs from the corporate scorecard or creates new ones that directly influence executive-level objectives and metrics or that measure unique processes at the business unit or group level. Once the business unit scorecards are completed, the process repeats itself at the regional or district level, and so on down to the lowest level in the organization, which could be an office, a workgroup, or an individual.

Asking each business unit to figure out how to influence metrics in higher level performance dashboards unleashes considerable creativity. Paul Niven, in *Balanced Scorecard Step by Step*, writes: "One of the benefits of the cascading process is watching creativity bloom... as groups begin to contemplate how they might contribute to an organizational goal once considered well outside their sphere of influence."

Program Offices

The key to the top-down approach is to make sure each group adheres to the standard definitions and rules for metrics contained in the executive dashboard or scorecard and faithfully aligns their versions to the ones directly above them in the organizational hierarchy. This usually requires the organization to create a program office that oversees and coordinates development activities. The program office, which serves as an intermediary between the business and project teams, ensures that all development efforts adhere to standards for defining and linking metrics as well as predefined technical specifications.

Serial versus Parallel Development

Ideally, every performance dashboard is built on the same infrastructure and guided by the same project team, which ensures that every group adheres to corporate standards and processes for defining objectives and metrics. This ensures consistency, saves money, and reduces risk. The project team creates each performance dashboard in a serial fashion, one after the other and one level at a time.

However, the downside of a serial approach is that it can take considerable time to roll out performance dashboards to every group in the organization. Executives can accelerate the process by funding parallel development teams or allowing each business unit or group to create its own version of the performance dashboard on the same infrastructure. However, the organization needs to ensure that the program office has significant clout and resources to enforce standards among various development groups and ensure the consistent usage of metrics and information among all performance dashboards.

Bottom-Up Deployment

The opposite of top-down deployment is bottom-up deployment, whereby an initiative does not start in the executive office but in a business unit, region, or other group and spreads upward and outward from there. For example, a regional group at Hewlett Packard TSG initiated a strategic dashboard project to serve its own needs, but it was so successful that it quickly spread to every region and unit in the group (see Chapter 9). The problem with the bottom-up approach is that

other business units and groups are usually developing similar systems. Invariably, these groups use different metrics, sources, staffs, and methods, making their systems incompatible.

A large number of operational and tactical dashboards start in a business unit or department and use a bottom-up approach to expand outward to the enterprise. In contrast, many strategic dashboards—because they align and focus the organization on strategic objectives—use a top-down approach.

Technical Requirements of a Centralized Approach

The centralized approach—whether working top down or bottom up—requires the technical team to create and manage all dashboards and scorecards on a standard BI platform. This approach offers greater flexibility at lower cost than developing individual performance dashboards from scratch. Technical teams quickly create new "views" (i.e., dashboards or scorecards) for individuals or groups without having to build a system or application or buy new servers and software. When users log on, the system checks their credentials and dynamically displays a unique dashboard or scorecard view. In this way, a single performance dashboard can support dozens or hundreds of distinct applications, which most users refer to as their "dashboard" or "scorecard."

The centralized approach also makes it easier for companies to maintain the consistency and uniformity of metric definitions and rules because they are stored and maintained in one place by one team. (Companies call a repository of metric definitions a "data dictionary," a "data library," or a "data glossary." Technical teams call it a "metadata repository.") Another benefit of the centralized approach is that organizations can support other analytical applications on the BI infrastructure other than performance dashboards. For instance, Quicken Loans built its BI architecture primarily to drive its operational dashboards but now uses it to support other analytical applications as well.

Systems Standards

A development team needs to define architectural standards for the performance management system. For instance, it needs to specify what technologies and products it will use for its Web servers, application servers, storage systems, databases, online analytical processing tools, programming languages, and reporting tools.

Although business managers often object to adhering to architectural standards because they can slow down or sidetrack a thriving project, standards ensure the long-term sustainability of a project. Standards ultimately reduce development, maintenance, and training costs for both business and technical staff and speed delivery of applications and solutions. The business and technical teams need to work together to optimize the business value of information technology,

which often means making tradeoffs between adhering to technical standards and delivering immediate business value (see Chapter 14 for how to align business and technical requirements).

Application Standards

The team also needs to establish development standards to ensure reliable delivery, accurate data, and consistent application performance. Development teams that establish conventions for displaying, manipulating, and navigating data can work more efficiently and rapidly. They can reuse components, such as layouts, grids, graphs, and charts, instead of creating them from scratch each time. They can also optimize these components to deliver fast response times when users navigate the performance dashboard, submit queries, or download reports.

Unfortunately, many development teams are whipsawed by user demands and are unable to establish technical standards that would enable them to serve customer needs better in the long run. Instead, they spend significant time recreating the same components over and over again to meet the preferences of different groups whose needs are actually more similar than different.

For instance, a technical team in a telecommunications company that is developing a corporate scorecard complains that each department wants the same information displayed in different ways: the marketing department wants charts with a green background and special graphics; the engineering department wants the chart to display a map of the United States; and the finance group wants charts with two "y" axes that displays multiple metrics simultaneously. Each request requires the technical team to build or buy a new charting component. Even off-the-shelf components still take them considerable time to configure and test.

The senior IT manager of the technical team says, "The program office needs to go to the business and say, 'You must use these formats,' but they are reluctant to do so because they fear that business users will create their own charts and reports and not use the corporate scorecard."

The example above illustrates the pitfalls of developing performance dashboards that span multiple business units and departments. Project teams that build performance dashboards for a single business unit or department tend to avoid many of these issues. They can adhere to standards because there is greater homogeneity in the way people want to view and manipulate applications and data in the group.

Data Standards

Besides standardizing application components, the technical team needs to standardize data. This is accomplished in three ways: 1) by creating a data model that drives the performance dashboard; 2) by sourcing the appropriate data operational systems, file systems, and other places, both inside and outside the organi-

zation; and 3) by cleaning and validating data to ensure it meets user expectations for quality and accuracy.

Data Models. Every application, including a performance dashboard, needs a data model. A data model represents a business process within the structure of a database. It is the brains of the application. Without it, the application cannot work.

Logically, the data model defines "things" (e.g., employee, position, manager, and so on), attributes of those things (e.g., employee can be full-time, part-time, current, former, and so on), and relationships among things (e.g., an employee is hired by a manager). Physically, the model stores all this information in tables and columns within a relational database (or in other types of structures in specialized databases). Once deployed, the database captures events and adds rows to various tables (e.g., John Doe was hired as a part-time receptionist on January 17 by manager Jane Ray). Metrics apply calculations to the rows and columns and generate scores or values, also usually stored in tables.

Technical teams spend considerable time interviewing business users before creating data models. Their goal is to create models that accurately reflect the way the business works and deliver fast application performance when mapped into a database. The bigger the scope of the project and the more complex the processes, the longer it takes to create effective data models.

One advantage of commercial performance dashboard solutions is that they contain a generic data model that is tailored to managing performance in a large organization. Most vendors cull the experiences of numerous customers when creating generic data models and analytic applications. While the models usually need to be tweaked for individual companies, they can accelerate project development compared to starting from scratch.

"We purchased a [vendor product] for its data model, which jumpstarted the project for us. It helped us understand how to roll this stuff out. The vendor product now represents only 20 percent of our entire solution but it was worth having something to start from," says a senior manager of IT at a wireless telecommunications firm.

Data Sourcing. IT managers responsible for populating metrics with data must identify the most reliable sources for that data. This is not always straightforward. There may be 20 places to get customer data. Which is the right source given what the metric is designed to measure? Which sources contain valid, reliable data?

The technical team may decide to pull several fields from one source and a few from another source to populate the dashboard data model. This analysis and triage "takes weeks and months to work out with the business units," says one IT manager, "but now we have high-quality detailed data that people trust." The key is to recruit business analysts who combine a strong knowledge of the business with an acute understanding of the underlying data and systems. These individuals can make or break the data sourcing process.

Data Quality

Data Defects

The third aspect of standardizing data is the hardest: delivering high-quality data to a performance dashboard. Operational systems are often riddled with data errors—missing data, invalid values, incorrect data types and formats, invalid dependencies—that do not show up until a performance dashboard team tries to integrate data among multiple systems.

"Our [performance] dashboard constantly highlights issues with the quality of data coming from source systems," says one IT manager who asked not to be named. "We're at the end of the line and often have to deal with the garbage that others send down the pipe. We point out problems to source system administrators and ask the business owners to pressure the administrators to fix the problems, but that's all we can do. There is an institutionalized lack of rigor around maintaining high-quality information in source systems. They keep band-aiding the system, but we need to get it right at the source the first time."

Fixing at the Source

The cost of fixing data errors increases the further down the line they are identified. The worst-case scenario is when a data error slips into an application and can be detected by end-users. When this happens, end-users stop trusting and using the system, leading to the application's demise.

Obviously, the best way to achieve high-quality data is to prevent errors from occurring in the first place. This usually requires source system owners to apply validation routines to check the accuracy of data entered into applications and to inform downstream application owners whenever they add or change a field in the source system. It may also require developers to rewrite outdated applications and managers to reengineer business processes so workers are rewarded for delivering high-quality data.

Most technical teams let "bad" data pass through into the performance dashboards and do not try to clean it up. The theory, which is sometimes debated, says that the business will not be motivated to fix bad data at the source unless they know that problems exist. Since bad quality data can cause users to reject a new performance management system, many project teams schedule a "beta" or trial period where users can experiment with the system and identify bugs before they officially declare it a production system. After that point, many teams rigorously analyze incoming data and don't allow users onto the system until a business owner declares that the data is valid and ok to use.

Business Ownership

To obtain high-quality data, the business must view data as a critical asset, as valuable as equipment, people, or cash. To preserve this asset, companies need to create

data stewardship teams that identify critical data elements and assign individuals responsibility for ensuring the integrity of each data element. These data "owners" are usually business analysts—individuals who understand the business and the data and can assess whether data values are in or out of range. Their expertise makes them uniquely qualified to identify data quality issues and develop data validation and cleansing programs.

Sometimes these analysts also have responsibility for checking the data in a performance dashboard after new data is added and officially validating its quality before users are allowed to access the system. For example, every day, a business analyst at a Boston-based financial services firm "certifies" that data in the company's financial dashboard is clean and accurate. The analyst runs tests on the data, and when everything looks okay, the analyst pushes a button that changes the dashboard's status from "preliminary" to "final" and adds to the bottom of each screen the time and date that it was officially certified.

FEDERATED APPROACH

The centralized approach works well when an organization builds a performance dashboard from scratch and rolls it out across the enterprise. Unfortunately, most organizations do not start with a clean slate. They may already have multiple performance dashboards, some of which overlap and compete for resources and endorsements from top executives. Given such an environment, project teams need to consider whether it makes sense to add another performance dashboard to the mix or leverage and extend what already exists.

The federated approach attempts to link existing performance dashboards into a seamless whole. This can be accomplished in a variety of ways. It can be as easy as transferring data from one performance dashboard to another or as challenging as standardizing metric definitions in multiple dashboards so they report performance consistently. A federated approach might also involve merging two performance dashboards or consolidating multiple dashboards into a single system. Sometimes organizations pursue multiple tactics at the same time.

Inventory

To bring order to the chaos, project teams should first create an inventory of performance dashboards that already exist in the organization. The inventory should document a number of characteristics, such as performance dashboard type (i.e., operational, tactical, or strategic), business domain, sample metrics, active users, platform used, and business owner, among other things (see Exhibit 13.1).

Project leaders can use this information to determine whether it makes sense to create a new performance dashboard from scratch or piggyback on top of an

EXHIBIT 13.1 SAMPLE INVENTORY

	Dashboard A	Dashboard B
Business Domain	Finance	Sales
Business Owner	John Doe	Jane Ray
Dashboard Type	Tactical	Operational
Usage Metrics	120 active users; 140 queries a day	200 active users; 400 queries a day
Platform/Tools	Excel, Essbase	Custom .NET
Data Sources	Mainframe, Excel	Sales tracking, pipeline
Updates	Monthly	Daily
Primary Metrics	AP/AR, DSOs	Orders, forecasts
Comments	Most data exist in the data warehouse	Heavily used custom application with active sponsor
Evaluation	Good candidate for consolidation	Keep as is

The first place to start in a federated environment is to identify existing performance management systems and collect information about their key characteristics, such as business owner, metrics, platforms, and so on. This side-by-side inventory helps executives triage existing systems, deciding which should stay, which should be merged or consolidated, and which should be eliminated.

existing one. The project leader can also use the inventory as evidence to convince a top executive that the organization has a burgeoning information management problem. The inventory can then serve as a guide to help an executive determine which performance dashboards should remain and which should be eliminated or merged and consolidated into others.

Horizontal Integration

There are two ways to integrate existing performance dashboards: horizontally and vertically. Horizontal integration is when two or more performance dashboards exchange information, creating a peer relationship among them.

Data Exchange

Horizontal integration works best when there are no inconsistencies or overlap among the metrics and data in the performance dashboards. Here, business

groups simply agree to exchange performance data. For instance, the finance group might want its scorecard to display charts from a human resources (HR) scorecard and an operations dashboard maintained by those departments. This is a relatively straightforward process; the only question is whether the exchange is done dynamically or in batch. For instance, the finance group could have the HR department send it data via e-mail or file transfer protocol (FTP). If it wants a more automated exchange, the two groups could connect their performance dashboards via a custom interface or a middleware backbone and send updates in real time.

If the HR department does not want to export its data, then the finance group might create a link from its dashboard to the HR dashboard, allowing finance users to log in and view the appropriate information in the HR dashboard (see Spotlight 13.1).

SPOTLIGHT 13.1 HUMAN RESOURCES DASHBOARD

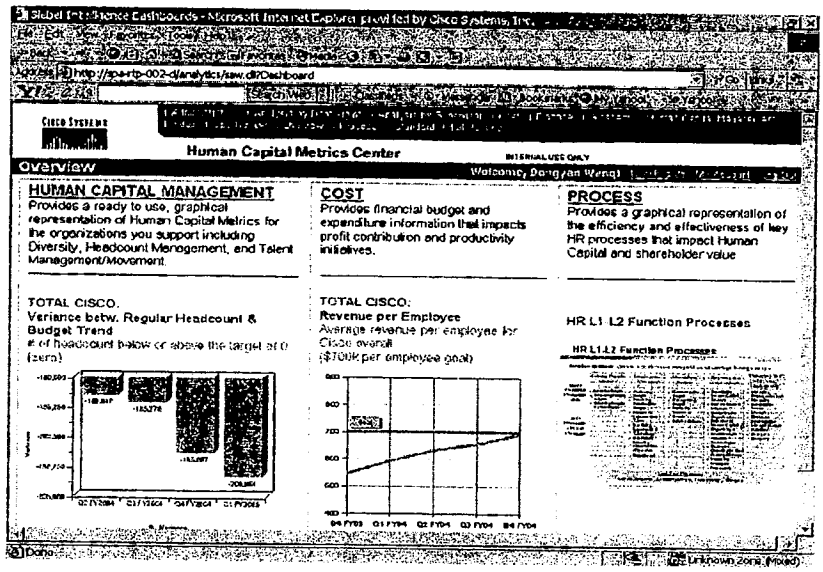
High-flying Cisco Systems, Inc., a maker of networking equipment and software that fueled the Internet boom, was the darling of high-tech investors. In 2000, Cisco Systems was affected by the downturn in the economy along with other high-tech companies. The surprise was not that the economy was slowing but the rate at which it fell. Reporting systems at the time were built around "stovepipe" applications and were incapable of providing visibility into rapid changes in the business.

Cisco Systems has taken a number of steps to improve the visibility of its sales pipeline and supply chain, including consolidating data into a corporate data warehouse and delivering tactical dashboards that make it easier and quicker for users to spot critical trends and issues that need to be addressed immediately. Users access data from an operational data store (ODS) that is updated every 15 minutes to deliver the most up-to-date bookings and inventory data. "Dashboards are the way people want to view reports and information. They provide an easy, intuitive way for workers to access relevant information for decision-making purposes," says Ryan Uda, program manager at Cisco Systems. "But dashboards are the icing on the cake compared to the task of getting accurate, timely data. At one point, Cisco had 30 plus systems managing bookings and backlog information; significant time and resources were committed to developing a single source of truth."

Since the downturn, Cisco Systems has delivered tactical dashboards to more than 2,000 users in sales, marketing, and HR departments (see Exhibit 13.2). The dashboards provide both historical data from the data warehouse or a data mart and "real-time" data culled directly from source systems or an operational data store. Collectively, the dashboards enabled the company to close down hundreds of operational reports and systems and increase worker productivity significantly.

"The data were always there, but locked away in databases most users couldn't access quickly or efficiently," says Uda.

EXHIBIT 13.2 CISCO SYSTEMS' HUMAN RESOURCE DASHBOARD



Cisco Systems uses a Web portal home page for its tactical dashboard that shows major categories of exploration and key high-level metrics divided into three columns. Users click on the text-based hyperlinks to see additional metrics for each area. (All numbers have been scrambled.)

Source: Courtesy of Cisco Systems, Inc.

Data Melding

Horizontal integration becomes challenging when performance dashboards track the same activity but calculate the metrics differently. For instance, an organization might have a metric called "total customer sales," but the marketing department calculates sales by tallying order commitments; the sales department by signed orders; and the finance department by payments received.

Most groups do not want to change the way they calculate metrics because the calculations represent the fundamental way they perceive the business. Unfortunately, this creates a problem when the CEO or CFO wants to know "total customer sales" for the entire company and can't get a valid answer. Just like the dueling spreadsheet phenomenon, the owners of each dashboard argue about whose data and metrics are right, leaving the CEO or CFO bewildered and frustrated.

Vertical Integration

Vertical alignment involves the integration of different types of performance dashboards into a virtual dashboard. Here, an organization with disparate operational, tactical, and strategic dashboards weaves them together so that users can navigate seamlessly from one to the other. This type of integration is tricky but not impossible.

For example, an operations group may have a strategic dashboard that tracks overall performance, a tactical dashboard for reporting and analysis, and an operational dashboard that monitors manufacturing processes. By integrating these dashboards, a user could view their performance in the scorecard view (i.e., strategic dashboard), then drill down into a report (i.e., tactical dashboard) and then view transaction details (i.e., operational dashboard) without knowing they are switching applications or systems.

To make this work, it is important that the three applications work off a common set of metrics. Then, developers need to create dynamic interfaces between each application so users can drill from one application to another without having to log in or reestablish their context. Typically, users can tell that they've moved from one application to the next because the data pops up in a new window and the screen and controls are different.

Another option is to use distributed query technology, or enterprise information integration (EII) tools to integrate data from different performance dashboards (see Chapter 3 for a description of EII). This approach creates a virtual view of data in other dashboards, queries them in response to user requests, and integrates the results on the fly and presents them to users. To improve performance in a distributed environment, administrators configure the systems to cache the results of commonly used queries and reports. Distributed queries work well when data volumes are small, data are relatively clean, and views do not require complex data joins or calculations.

CONSOLIDATION APPROACHES

Rather than trying to integrate disparate performance dashboards, sometimes it is best to consolidate them into a single system with consistent metrics and a common BI platform. Organizations have done this for years with independent data marts and data warehouses. Here are a few of the more common consolidation strategies.

1. Rehost

Organizations focused exclusively on reducing costs may simply opt to rehost existing performance dashboards onto a single operating platform. This "forklift"

option enables firms to eliminate multiple servers and the staffs required to maintain them. However, rehosting does not change the dashboards in any way and does nothing to integrate data or deliver a single version of the truth. Its data model, metrics, and reports stay the same.

Sometimes, organizations rehost to replace proprietary technology or when a vendor withdraws support for a product, such as a database management system. Others rehost as a first step in a broader consolidation strategy.

2. Create from Scratch

Any homebuilder will tell you it is easier to build a new home than renovate an existing one. The same concept holds true for performance dashboards. Organizations that have multiple, redundant performance dashboards often decide that the easiest and most cost-effective option is to start anew.

In most cases, the architects of the new environment borrow heavily from the existing performance dashboards, but they also re-interview users and gather new requirements to build the most comprehensive and up-to-date dashboard possible.

One problem when starting from scratch is trying to figure out what to do with the existing performance dashboards. In some cases, the decision is easy. If end-users are not actively using the dashboards because they are unhappy with the performance, functionality, timeliness, or relevance, then it is a no-brainer to pull the plug. If it would cost too much to swap out tools, then it is best to leave the performance dashboard. For instance, one company determined that it would cost $16 million to convert its existing BI tool licenses to those of another vendor and decided not to make a change.

However, if a performance dashboard has a powerful business sponsor who wants to keep the application or if it has an active user base, then sometimes the best option is to "grandfather" the application and wait until the group is ready to migrate to the new environment. Sometimes, a CIO can accelerate that decision by withdrawing IT support for the grandfathered application. This makes it more costly for the group to continue using a nonstandard system.

3. Designate and Evolve

The "designate and evolve" approach involves designating one of the existing performance dashboards as the "corporate standard." The company then consolidates all other dashboards into the designated environment.

This frequently occurs when a larger company acquires a smaller one. The performance dashboard of the larger company becomes the corporate standard and the newly acquired performance dashboard is folded into it. This approach also makes sense when a company makes a strategic commitment to implement products from a specific vendor, whose performance dashboard product then is designated as the corporate "standard."

4. Backfill

When local groups hold considerable power, a politically acceptable approach is to backfill a data warehouse behind the existing performance dashboards. Here, the data warehouse serves as a staging area for the data contained in downstream performance dashboards. It consolidates all extracts and data feeds from source systems and logically integrates these data via keys and shared dimensions. Although this approach does not reduce the number of performance dashboards, it does reduce the number of source system extract programs that feed the dashboards.

5. "Conformed" Dashboards

One way to consolidate performance dashboards without physically integrating them is to restructure the dimensions and metrics in each mart so they "conform" with each other. Rather than start from scratch, an organization redesigns the data models and metrics used in existing dashboards so that they conform. They also standardize source system extracts so all dashboards are populated with the same data. This has the added benefit of reducing costs and complexity by consolidating multiple, redundant data feeds.

This approach is not without its challenges. Redesigning data models and changing extract feeds can wreak havoc on dashboard screens and reports. The redesign process can get unwieldy if there are a half-dozen or more performance dashboards that need to be conformed.

6. Dashboard of Dashboards

If your organization is highly decentralized and only the corporate group requires consolidated information, one option is to create a performance dashboard that pulls from all the existing dashboards, creating, in effect, a dashboard of dashboards. One benefit of this approach is that it does not change the existing dashboards at all, which is attractive politically. It also does not take much effort or money, but it does require the groups managing the existing dashboards to coordinate closely with the managers of the new downstream dashboard since any changes they make in the fields or metrics will affect the new dashboard.

SUMMARY

Centralized Approach. The best way to link performance dashboards is to use a centralized approach that enables a single project team to automatically generate custom dashboards designed to meet the information requirements of each group or individual in the organization. The centralized approach, however, requires a standardized architecture that specifies hardware and software compo-

nents, programming conventions, a common data model, and a rigorous approach to ensuring high-quality data, among other things.

Top-Down Roll-Out. The best way to integrate performance dashboards using a centralized approach is to work from the top down. Here, the organization builds the corporate scorecard and uses it as a template to build lower-level scorecards. Each successive scorecard either reuses metrics from the previous scorecard or devises new ones to influence the higher-level metrics. This process enables organizations to "cascade" scorecards throughout the organization. To ensure consistency among cascaded scorecards, it is best if a single project team works with the business groups to build each scorecard on a common platform with consistent definitions of metrics.

Bottom-Up Roll-Out. In a bottom-up deployment, a business unit or department initiates a performance dashboard project. Through word of mouth, the project spreads throughout to the rest of the organization as various groups seek to reap the same benefits. Working bottom-up, however, can jeopardize data consistency if business units or departments create their own performance dashboards instead of building off an existing system.

Federated Approach. A federated approach tries to link existing, incompatible performance dashboards using a variety of techniques, including exchanging data via email or FTP or dynamically transferring files via middleware. Integrating non-overlapping performance dashboards is relatively straightforward, but integrating dashboards that define metrics differently and use different data models is challenging and sometimes more effort than it is worth.

Consolidation Techniques. Often, the simplest approach to integrating performance dashboards is simply to consolidate them into a single system. There is a range of consolidation techniques that mirror the way companies consolidate independent data marts and data warehouses. The most commonly used approach is "start from scratch," in which organizations build a new performance dashboard and either shut down or "grandfather" the legacy dashboards.

CHAPTER 14

How to Align Business and IT

PITCHED BATTLES

Tension Abounds

There has always been distrust between the business and the technical sides of an organization, but performance dashboard projects seem to heighten the tension to extreme levels. I have been in the technology industry for 17 years, and frankly, I've been shocked by the intensity of the distrust that I have witnessed between these two groups while researching this book.

Although there is much talk about the need to align business and information technology (IT) departments, little progress has been made. Part of the problem is systemic to IT departments and technical people, but another part involves the willingness of business executives and managers to engage with IT constructively on a long-term basis.

A performance dashboard project exacerbates the tension between business and IT because the two groups need to work closely together to deliver an effective solution. Unlike operational systems that are designed once and run for long periods of time without major modification, performance dashboards must continually adapt to the changing needs of the business. Consider this comment from a business manager who spearheads a performance dashboard project.

"We're supposed to submit a project plan that spells out what we are going to do every month and quarter and budget it out accordingly. But we can't operate that way. We know there will be a reorganization at least once a year, new processes, and potentially a major acquisition that forces the company to change strategy and move in a different direction. We have a project roadmap and cross check with the IT department, but we have to remain flexible to adapt to the business."

Battle over Control

In many cases, the pitched battle between the business and IT occurs because a business group has developed a performance dashboard outside of IT's purview but, due to its own success, can no longer keep up with demand. It needs IT's support and expertise to scale up the application and expand it to the rest of the company.

IT Ineptitude

The business is terrified about ceding control over the design, architecture, and budget of its pet project to a central IT group, which it views as slow, incompetent, and uncompromising. The business cites numerous examples of IT ineptitude to reinforce their notions that the IT department will suck the life blood out of the project and cause it to die a slow, inexorable death.

Here are a few comments from a business manager who used a small team of developers and rapid development techniques to build a performance dashboard in three months for an operations department.

"We need things today, not tomorrow, or else we go out of business. That's not how the IT world sees things; their business acumen is not the same and a sense of urgency is lacking. For instance, we asked IT for a data extract and they said it would take four months. We couldn't wait that long so we leveraged GUI-based technology ourselves and in one weekend created a temporary fix that worked well. But when IT finally delivered the extract, it had errors and required rework. After we launched the dashboard, it was so successful that it began consuming more disk space than they anticipated. Rather than working with us to come up with a satisfactory solution, they threatened to randomly delete our data unless we offloaded the data ourselves."

Spoiled Rotten

Of course, the IT group sees the business as a spoiled child who is too impatient and short-sighted to wait for IT to lay the necessary foundation to ensure the long-term success of their own system. IT is also bitter that the business expects them to deliver an ever-increasing number of "high-priority" projects in shorter and shorter time frames while dealing with reduced costs, shrinking staff, and the constant threat of outsourcing and offshoring. One IT director recently lamented, "We work hard to meet the needs of our business customers but they are constantly adding and changing requirements, and they do not have the discipline to adhere to their own priorities. This makes it difficult for us to plan and impossible to succeed. It's a no-win situation."

The result is a tense standoff in which each group fulfills the other's worst predictions of each other. If the business has the upper hand, it will maintain control of the technical aspects of the project, creating another non-integrated

system that will be costly to maintain in the long run. If IT gains control, it will halt development of new end-user functionality until it brings the infrastructure into conformance with its architectural standards and nothing of value will get accomplished.

So what can be done to slice through this Gordian knot? What will it take for both sides to enter into a relationship of mutual respect? Like a marriage on the rocks, business and IT need some serious counseling before they can work together effectively. Part of the counseling involves taking a number of baby steps that improve communication and overcome mutual distrust by helping each side better understand the other's challenges and dilemmas.

GENERAL COUNSELING

Counseling for IT

During the past ten years, IT has come to recognize that its job is not to deliver technology for technology's sake but to provide exquisite service to its customer—the business. Like an alcoholic who publicly admits the problem, this is a step in the right direction. However, this is only the first step. Verbal acknowledgment alone does not translate into remedial action.

To take the next step, IT must translate goodwill into action. The following questions can help an IT team determine whether it is paying lip service to meeting business needs or actually doing it. If the IT department can respond positively to most of the questions below, they are on the right path.

Does the IT team:

- Sit side by side with the business people it serves?
- Read the same trade magazines as its business counterparts?
- Attend the same conferences?
- Go to lunch regularly with business clients?
- Read the company's annual report?
- Read and understand the short- and long-term strategic plans for the company?
- Know the entire business process that drives the application it is developing or maintaining?
- Have an average ten years of experience in the company's industry?
- Have degrees in database administration and business administration?

What better way to align with the business than to eat, sleep, and breathe like a business person? Unfortunately, the IT department—by virtue of its being a separate organization within the company—often functions as a subculture that operates by its own rules. IT groups have their own jargon, incentives, reporting

structure, and career paths, which are different from those of the business that it serves.

In contrast, technical teams embedded in departments or lines of business often enjoy a much healthier relationship with their business counterparts than corporate IT. Why? Rather than existing in a technical subculture, these "embedded" IT staff members sit side by side with the business people and function as a single team, with the same goals, bosses, and incentives.

Counseling for Business

Although IT groups generally get the lion's share of the blame for misalignment between business and IT, it takes two to tango, as they say. The business shares equal blame for the frustration that it feels towards IT—perhaps more so, because it does not always recognize how its actions and behavior contribute to the problem.

The business needs to understand that it changes too fast for IT to keep up. It harbors a short-term bias toward action and rarely takes a long-term view toward building sustainable value. This is especially true in U.S. companies, whose Wild West heritage makes them notorious for acting first and asking questions later. The business needs to slow down sometimes and ask whether change is really needed or if they are reacting in knee-jerk fashion to the latest event or issue of the day.

Decentralized organizations magnify this behavior, parceling out authority to divisions and departments to make decisions faster and in the context of local markets. Although there are advantages to decentralization, there are considerable downsides that contribute to the perpetual misalignment of the business and IT on an enterprise basis. The scores of analytical and operational silos, including the hundreds and thousands of pernicious spreadmarts that hamstring corporate productivity, testify to the business' fixation with speed and decentralized decision making.

Finally, the business has the upper hand in its relationship with IT and it often rules in a high-handed and capricious manner. In many organizations, executives threaten to outsource or offshore IT when it does not deliver sufficient value, rejecting the possibility that their own actions and decisions may have crippled IT's ability to function effectively. The business often lacks a reasonable degree of restraint and self-discipline when it comes to IT projects. One IT manager I talked with recently said his company's annual technology planning process is a sham because the business cannot discipline itself to live within its limits.

"Prior to the beginning of every calendar year, the business prioritizes IT projects for the next 12 months. Out of 90 projects, they identify 60 of them as 'high priority' and we create a schedule to deliver them," says the beleaguered IT manager. "But even before January 1st arrives, the business adds 20 more 'high-

priority' projects to our list and adds another 20 projects before April. And then they tell us in March that we are already two months behind schedule!"

The IT manager said that he had negotiated a new project prioritization process with the business that required the business to operate in a "zero sum" environment. If they added projects after the budget was finalized, they needed to cut others. Although the IT manager was hopeful the new policy would succeed, he also half-jokingly commented that if he has to tell the business to abide by its new guidelines, he may stir up ill-will that might cost him his job.

ALIGNMENT TACTICS

Although it is not the sole source of the stalemate, the IT department needs to take the first step toward reconciliation. It needs to show that it wants to be an equal partner in the business, not an auxiliary that is more interested in technology than the bottom line. It can do this by becoming more responsive to business needs by improving the way it gathers business requirements, by adopting rapid development techniques, and by creating and selling a portfolio of analytical applications. To do these things, some organizations are creating an information management group that sits between the IT department and the business and is responsible for the timely delivery of information, reports, and analytics to users.

Business Requirements

According to Jill Dyche, partner at Baseline Consulting in Sherman Oaks, California, business requirements are the most "elegant bridge between IT and the business because each organization shares accountability for communicating and representing an understanding of what the business needs." However, many requirements-gathering sessions lead to less than stellar results. Part of the problem is that business users do not know what they want in a report or dashboard screen until they see it. Just asking what data users want to see invariably leads to the answer, "All of it," which helps neither side bridge the gulf.

Some organizations recruit business requirements analysts to interview users and translate their requirements into technical specifications for developers. Other organizations start with open-ended survey questions and then follow up with one-on-one interviews. Other techniques to gather requirements include joint-application design sessions, use case modeling, process modeling, and application storyboarding, among others.

Incremental Delivery

Once requirements are gathered, the technical team needs to step up and deliver value to the business much faster than it does today. Most IT managers under-

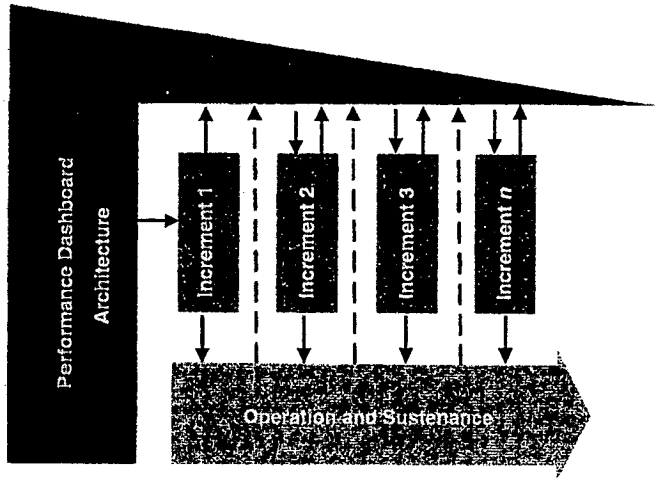
stand that the days of five-year multi-million dollar projects are over; they know they need to deliver projects much faster with fewer dollars and guaranteed return on investment. The business no longer trusts IT to deliver the goods.

Speed without Compromise

However, most IT managers have not yet figured out how to deliver value fast without compromising architectural standards that are in the best interests of the company in the long run. Fortunately, there are solutions, and many come from the business intelligence (BI) arena. Because of the adaptive nature of BI systems, project managers have learned how to develop the architecture and infrastructure incrementally as they go along (see Exhibit 14.1).

Any IT manager will tell you that the hard part of building applications is not what you see on the screen but what lies underneath. Behind each application is an architecture that guides developers as they build a system that meets business requirements. At the heart of the architecture is an enterprise data model that

EXHIBIT 14.1 INCREMENTAL DEVELOPMENT TECHNIQUES



An incremental development methodology enables companies to create an enterprise architecture and infrastructure incrementally instead of all at once at the beginning of a project. The team delivers new infrastructure components and applications in three-month increments. Each increment extends and modifies the architecture in an iterative fashion.

represents how the organization works and how data elements relate to each other. Instead of spending months or even years creating this architecture, BI project managers now create it as they go along, one subject area at a time, usually in three-month increments.

During this three-month period, the technical team does the following: 1) gathers requirements for the new subject area (i.e., customer profitability); 2) extends the data model to support the subject area; 3) identifies what data to use among operational systems and elsewhere; 4) analyzes and maps the data to the target model; 5) documents these mappings or transformations; 6) develops reports and application screens; 7) tests and debugs the application; 8) pilot tests the application with users; 9) launches the application; 10) trains users.

"We roll out our KBI portal in incremental releases, and we treat each release as a production application. It doesn't launch until users sign off on it and we've gone through all the design and testing. This makes sure you have the numbers right," says Jim Rappé, an IT manager at International Truck and Engine Corporation.

Not Good Enough?

However, three months is still too long for most business managers to wait for applications or enhancements. Many business users want instant turnaround. The good news is that technical teams can meet these requirements if the data exist in a usable form. "If users ask for a new metric and the data are already in the data warehouse or an OLAP cube, we can do it in a few days," says Rappé.

Virtual Dashboards

If the data isn't already in a data warehousing repository and users don't want to wait, then a technical team in certain situations can populate dashboard metrics by querying source systems directly using enterprise information integration (EII) tools. Many commercial dashboard products use this technique to deliver dashboards quickly. The set-up is fairly straightforward and primarily involves mapping data in source systems to dashboard metrics. While this approach works well in a pinch, it inherits the liabilities of EII tools and distributed query techniques. The connections can be brittle and slow and often don't scale well to support large volumes of data or users, although this is improving. In general, this approach is appropriate as a way to prototype a performance dashboard or supplement it with limited amounts of external or real-time data stored outside of a BI repository.

Analytic Development Environments

On the front-end, newer BI tools, including many performance dashboard products, enable developers and power users to deliver minor enhancements in a few

hours. Called analytical development environments (ADEs), these tools promise to accelerate development because they largely eliminate the need to write code. They are especially effective when deployed to a network of power users who can write reports on behalf of colleagues in their department. ADEs finally get the IT department out of the business of creating custom reports and applications for users (see Spotlight 14.1).

SPOTLIGHT 14.1 ANALYTICAL DEVELOPMENT ENVIRONMENTS: THE WAVE OF THE FUTURE

An analytical development environment (ADE) is a new generation of BI development tool that lets technically savvy business users create analytical applications rapidly, including performance dashboards. With an ADE, power users drag and drop visual components onto a graphical workbench where they can be connected and configured to create an analytical application without writing code.

ADEs, which are the technical complement to IDEs (integrated development environments), used to create transaction applications, promise to accelerate the development of performance dashboards and other analytical applications. Today, organizations spend way too much time customizing and extending BI tools and application packages to meet user requirements. On average, organizations customize about 33 percent of every packaged application and spend 7.5 months to deliver a final product—way too much time to meet fast-changing user needs.

The drag-and-drop nature of ADEs will shift development responsibilities away from IT staff and application developers. With an ADE, a power user can easily modify a packaged analytical application, flesh out a report definition, or create a new application or report from scratch once IT has established data connections and query objects. Thus, ADEs will once and for all get the IT staff out of the business of creating reports so they can focus on what they are best at: building robust data architectures and abstraction layers for end users.

Rapid Prototyping. ADE tools will also accelerate the trend toward rapid prototyping. Developers and power users can use an ADE tool in a joint application design session to get immediate feedback from users on data, application screens, metrics, and report designs. This iterative process results in better designed applications that are delivered more rapidly. Many vendors are shipping ADEs for specific applications to facilitate rapid prototyping. For example, many dashboard and scorecard solutions are ADEs.

Service-Oriented Architecture. The power behind ADEs comes from the fact that vendors have componentized the functionality of their BI tools. In the past, vendors hard-wired presentation, logic, and data functionality together. However, the advent of object-oriented programming and service-oriented architectures has enabled vendors to open up their products, componentizing functionality within a service-oriented architecture. The upshot is that ADEs enable developers to create multiple instances of components, store them centrally, and reuse them in other applications.

For more information on ADEs, you can download a 40-page report entitled "Development Techniques for Creating Analytic Applications" at www.tdwi.org.

A potential problem with ADEs is that whereas most accelerate development of the front end of the application, few address the back end. That is, most ADEs assume that the data are already loaded into a data warehouse or data mart or that the data are in good condition and can be accessed dynamically and integrated on the fly. Vendors that promise to build a dashboard in a day or week fall into this camp. Although they may have a slick-looking Web-based ADE, they assume that you have already done the hard work of cleaning up and integrating your data.

If the data do not exist for an analytical application, it usually takes technical teams three months at a minimum to source, clean, integrate, design, and test the data set and application before it can be rolled out. However, if the data exist, a developer or power user armed with an ADE should be able to create new views in several hours or days, depending on the complexity of the screens.

Portfolio Planning

One problem with the incremental development approach is that business users do not want their application delivered "piecemeal." They want it all at once or not at all. They do not see the usefulness of having a portion of the functionality they want or need and then waiting months or years for the rest. To curb the restless appetite of the business, it is helpful to unveil the bigger picture of where the project is going and how it will get there. You can do this by developing a BI portfolio that shows how IT can deliver a series of related applications built on a common infrastructure over a period of time, such as 18 to 24 months.

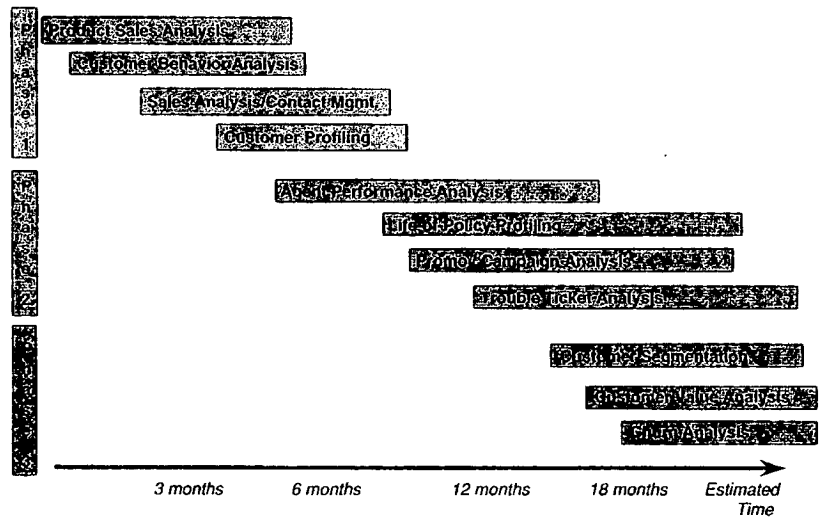
Jill Dyche, partner at Baseline Consulting in Sherman Oaks, California, created the chart shown in Exhibit 14.2 to help business executives understand the iterative process of building analytical applications and how they can accelerate the process if they want to pay the cost of creating parallel development teams.

The chart shows executives that they can get everything they want by building on a common infrastructure instead of adopting the "go-it-alone" approach. If they want their applications faster, they can pay for parallel development teams. This shields IT from accusations that it works too slowly, leaving decisions about speed and cost to the business.

Exhibit 14.3 shows the infrastructure that supports the portfolio of applications in Exhibit 14.2. The data model, which consists of multiple subject areas populated with data from multiple operational systems, is developed one subject area at a time. Each subject area, once added, multiplies the number of new applications that the environment supports.

In other words, there is not a one-to-one correlation between applications and subject areas. In fact, the value of the infrastructure expands exponentially as more subject areas are added. Each new subject area enables the organization to build many new applications on top of the integrated data. A data warehouse

EXHIBIT 14.2 BI DELIVERY PORTFOLIO



A BI portfolio makes it easier for executives to see that their needs will be met over the long term by building on a standard infrastructure. They can accelerate development using parallel teams but they will have to pay extra in the short run.

Source: Copyright © 2005, Baseline Consulting. Reprinted with permission.

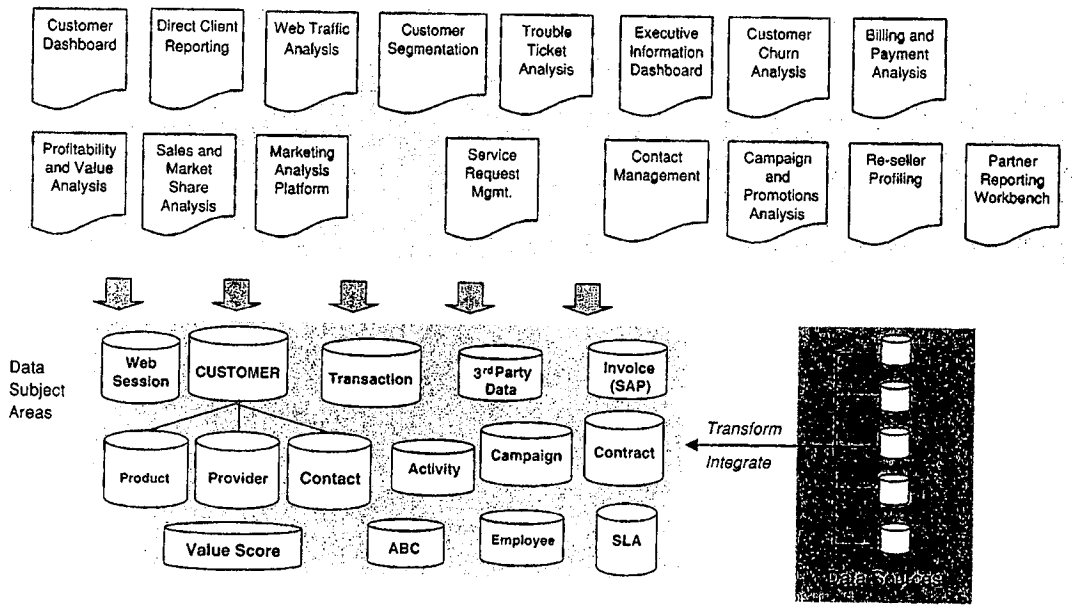
with dozens of integrated subject areas can support an almost limitless number of applications, providing substantial business value. Once the data are stored in the data warehouse, applications can be delivered rapidly, in days or weeks (see Exhibit 14.4).

Debate over Standardization

One of the biggest stumbling blocks between the business and IT is the IT group's insistence on adhering to technical standards, which then become more important than delivering value to the business. As we discussed in Chapter 12, standardization enables the IT group to respond more quickly to user needs because the group can reuse skills, code, and products rather than start from scratch each time. However, IT's nearly zealous adherence to standards drives business people crazy.

"The head of information systems and architecture wants to restructure existing applications to run on a single set of ETL [extraction, transformation, and

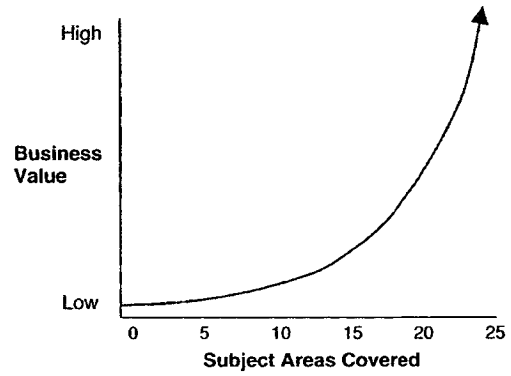
EXHIBIT 14.3 INFRASTRUCTURE FOR A BI PORTFOLIO



With a BI infrastructure, there is no longer a 1:1 ratio between applications and data structures. Each new subject area, which is populated with data from various data sources, multiplies the number of new applications that BI infrastructure can support.

Source: Copyright © 2005, Baseline Consulting. Reprinted with permission.

EXHIBIT 14.4 A BI INFRASTRUCTURE DELIVERS EXPONENTIAL VALUE



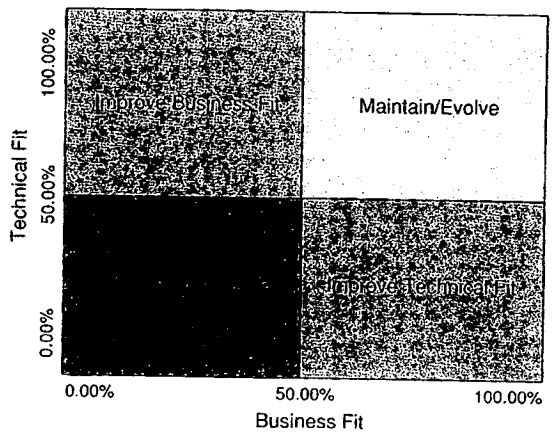
The value of a BI infrastructure increases exponentially as more subject areas are added. Each new subject area enables the organization to build many new applications on top of the integrated data.

loading] and BI tools. But one size doesn't fit all and what's it going to cost to harmonize everything into the new architecture? We spent a half million dollars on our scorecard—it's served hundreds of people for two years and it's stable—but it will cost $2 to $3 million to rebuild the application using the new standards. Meanwhile new work is backed up in the queue so where's the business value?" says one performance manager.

I recently attended a presentation by an IT manager at a health insurance company who had developed a strategic plan to foster a more collaborative partnership between corporate IT and the business. One of the more innovative elements in the plan was a way to create a standard application architecture that had buy-in from both the business and IT. The process of creating the standard architecture required both business and IT to evaluate current and proposed business applications, including performance dashboards. The plan calls for the business to evaluate the "business fit" of the applications and the IT department to evaluate the "architectural fit." The results of the evaluations are depicted on a quadrant chart that plots business fit on the y-axis and architectural fit on the x-axis (see Exhibit 14.5).

Applications in the lower left quadrant are candidates for elimination or consolidation—they are the low-hanging fruit that can help drive momentum behind the new architecture and standards. Applications in the upper right-hand quadrant represent an optimal fit from both a business and technical perspective and should be preserved.

EXHIBIT 14.5 APPLICATION SCORECARD FRAMEWORK



The quadrant chart above can be used to evaluate existing or potential applications in a company's portfolio. It is an excellent tool to help business and IT begin to communicate their needs and requirements in a more proactive, positive manner.

Applications in the remaining two quadrants—lower right and upper left—need modification before they meet both business and IT requirements. Business and IT leaders need to sit down and develop a strategy to bring each into compliance. The process of evaluating applications in this manner is one way for the business and IT to communicate their requirements to each other and overcome the mutual distrust that has darkened relations for years.

Structural Reorganization

Business Requirements Analysts

Another way to minimize the inherent conflict between business and IT is to use an intermediary to communicate between them. For example, many companies hire business requirements analysts to interview users and translate their requirements into technical specifications for developers.

However, these types of intermediaries have had mixed success. A business sponsor at a large insurance company said his firm hired specialists to "bridge the chasm" between the worlds of business and IT. "The results have been poor," he said. An IT manager was even more vocal: "Business requirements analysts are a big mistake because users never really know what they want when you ask them.

You need to show them something, and work iteratively, because your interpretation is never exactly what they had in mind. Plus, they'll come up with new things as they see the application."

Departmental IT

Other companies have experimented with embedding IT into departments and business units. We have seen that this can generate some extraordinarily successful applications, including some profiled in this book. However, this approach creates integration problems down the road. The business sponsor at the insurance company quoted above also tried this approach but said, "That method worked OK when we were constructing technology 'silos' that weren't integrated, but now integration is our chairman's top priority."

Steering Committees

Most companies use steering committees to align business and IT and provide guidance and governance for enterprise IT initiatives, including performance dashboards. Most companies have both a steering committee and a working committee.

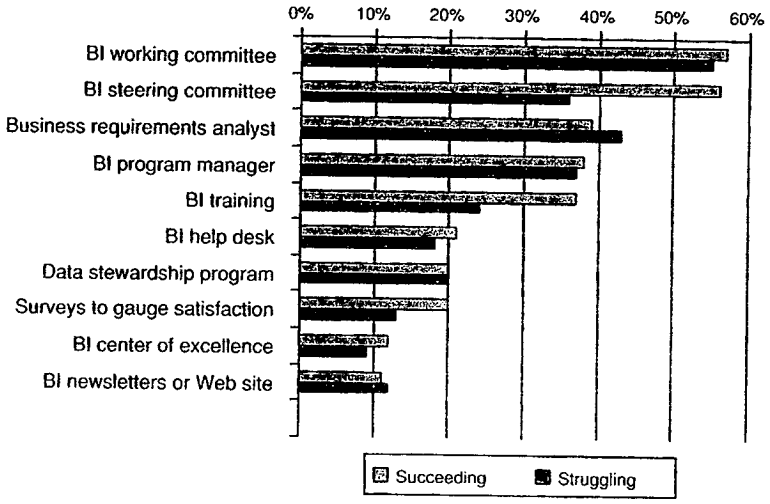
The steering committee is comprised of high-level business representatives from various departments; it sets strategy, prioritizes projects, and allocates funds. The working committee, which is comprised of end-users and members of the technical team, gathers requirements, discusses enhancements, resolves data definitions, and addresses technical issues.

Some companies have even more layers of committees to guide an enterprise-scale project. A major insurance company, for example, has the following committees guide its enterprise data warehousing and BI effort:

- **Data Warehousing Advocacy Team.** Represents the executive steering committee, which sets the strategic direction for the data warehouse. Serves as a liaison to the Business Advisory Team.
- **Business Advisory Team.** Owns the data warehousing strategy and prioritizes projects. Is comprised of business representatives from all functional areas and meets every three weeks.
- **Data Governance Team.** Defines definitions and rules for data elements and enforces policies about data ownership, changes to data, and user training. Is comprised of 20 end-users representing every functional area.
- **BI Solutions Team.** The technical team that translates the decisions of the Business Advisory and Data Governance team into the system. Trains users.

Research from The Data Warehousing Institute (TDWI) shows that companies with successful BI solutions are more likely to employ BI steering committees,

EXHIBIT 14.6 ALIGNMENT STRATEGIES



Companies use a variety of strategies to align business and IT and keep BI projects on track. Steering committees, training, and surveys show the most correlation with successful projects.

Source: Wayne Eckerson, "Smart Companies in the 21st Century: The Secrets of Creating Successful Business Intelligence Solutions" (*TDWI Report Series*, 2003).

provide adequate training, and use surveys to gauge user satisfaction (see Exhibit 14.6).

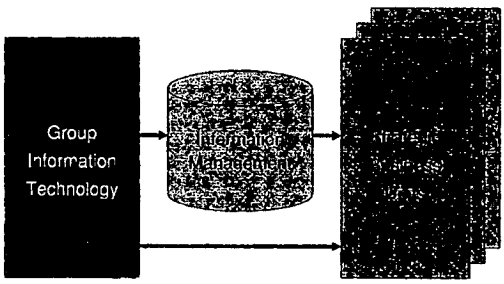
Information Management Groups

One of the best ways to align business and IT is to create a separate business unit that sits between the two groups and is charged with meeting business requirements in a timely fashion. These groups go by many names—Information Center, Information Management, or Business Intelligence Competency Center—and are a relatively new phenomenon. Those who run these organizations feel they are delivering significant value.

Absa Bank

For example, Absa Bank Ltd. in South Africa established its Information Management (IM) group in 2001, originally spinning components out of IT and marketing (i.e. customer information management) so it could focus on managing customer information, which corporate executives deemed was "essential to

EXHIBIT 14.7 INFORMATION MANAGEMENT GROUP AT ABSA BANK



Absa Bank in South Africa created an Information Management (IM) group in 2001 to improve information delivery to business units. Spun off from corporate IT and marketing, the group is responsible for developing and managing the bank's overall information architecture as well as its data warehouse, BI tools and applications, data mining programs, and geographic information systems. It works closely with corporate IT, which manages the bank's operational systems, hardware, servers, and databases.

Source: Courtesy of Absa Bank.

the future success of the organization," according to Dave Donkin, group executive of Information Management at the bank. Today, the IM group's charter is to: 1) allow information- and knowledge-based strategy formulation and decision making, and 2) leverage information to improve business performance.

Absa's IM group is a shared service that is positioned between corporate IT and the strategic business units (see Exhibit 14.7). Corporate IT is responsible for managing the bank's 400+ operational applications, hardware, servers, databases, and the technology and applications architecture. On the other hand, the IM group is responsible for the data warehouse, BI tools and applications, data mining, and geographic information systems. IM also develops the bank's information strategy and architecture that defines how the bank stores and manipulates information in a cost-efficient and effective manner. IM oversees information governance activities, development methodologies, and end-user tools, among other things.

Close Cooperation

Although this division of responsibility seems clear-cut—corporate IT handles operational systems and IM manages analytical systems—there are many areas in which the two groups need to work closely together, such as defining the overall enterprise architecture for the bank. Also, whereas IM designs the data ware-

house and analytical systems, corporate IT manages data warehousing operations (including extracting data from source systems) and builds and maintains the systems that run IM's analytical applications.

When the IM group was formed four years ago, Absa's data warehouse was "sub-optimized: not customer centric, operationally unstable, and not business directed," according to Donkin. Today, Absa's 20+ terabyte data warehouse is more stable (99 percent uptime) and more responsive to changing business needs. Also, it offers a slew of relevant business applications, such as scorecards, fraud detection, risk management, and customer analytics, which drive cross-sell, up-sell, retention, customer segmentation, and lifetime value scores.

One way that the IM group stays in touch with the information requirements of the business units is to assign a "business development manager" to each unit. The business development managers, who are business managers with substantial information and technology experience, meet regularly with their counterparts in the business units to discuss ways the units can better leverage information to meet their strategic objectives and address business problems.

The business development managers have been so effective in delivering value back to the business units that the IM group has added eight business development representatives in the past two years. "The best part is that the business units are so eager to get business development managers that some of them have transferred staff over to the IM division to enable establishment of the role," says Donkin.

Deutsche Börse

Similarly, Deutsche Börse, one of the leading international exchange organizations, several years ago established the Information Center, a technical group that is charged with turning data into information products requested by the business. To make this happen, the Information Center is responsible for data warehousing, ETL, data marts, reporting and analysis tools, data quality, job scheduling, and metadata management. The group is supported by corporate IT, which provides server support, database administration, and custom programming using Java, C, and other languages for components not available as commercial tools. This division of responsibility enables IT to focus solely on managing technology instead of trying to empower the business with information, which is not its strong suit, according to Dr. Klaus Detemple, director of information operations at the stock exchange.

A key to the success of IM groups is having individuals who combine a knowledge of the business and IT and are equally comfortable operating in either environment. Although rare today, these types of individuals are the future of IT. They know how to communicate with the business because they come from the business but they also have a strong technical background or experience managing IT projects.

IM groups take the pressure off the IT department from having to play a role it is not comfortable playing. The IM group enables technologists to focus on technology instead of the business. It gives them a separate career track and an organizational structure designed to maximize their capabilities. It is a win-win situation for both the business and IT.

SUMMARY

For years, business and IT have been locked in a cycle of mistrust. The business does not trust the IT department to place its interests above technical requirements. The IT department does not trust the business to stick to its priorities and provide adequate resources to meet technical requirements.

This cold war can begin to thaw if both sides take steps to understand each other's predicament and find new ways of working together. The IT department must learn the business, and think and talk in business terms. It also needs to develop infrastructure incrementally and create a BI portfolio that shows the business how it will generate valuable analytical applications over an extended period. It needs to establish an IM group that sits between IT and the business and mediates information requirements using individuals who combine a knowledge of both business and technology issues.

At the same time, the business needs to understand that Rome was not built in a day. They need to give IT time to develop a standard infrastructure that, once built, can accelerate development while reducing costs. And, while business units may be tempted to build their own applications, they need to work with the IT or IM group to transfer these early successes into valuable enterprise resources built on a common technology platform.

The good news is that during the past decade both sides have acknowledged the problem and seem earnest to address the issues that divide them. While this is a good first step, there is still much work to do to align business and IT.

CHAPTER 15

How to Ensure Adoption and Manage Performance

You have spent a lot of time and effort creating a performance dashboard. You have sold the idea, secured funding, and created a team. You have worked diligently with the business to define metrics and targets, standardize rules, and locate data, and you have worked with the technical team to create an appropriate business intelligence (BI) infrastructure. Now you are ready to launch and watch the performance dashboard do its magic.

But will it?

If you have done a good job selling the performance dashboard, expectations are high. Executives see it as a powerful tool to communicate strategy and change the behaviors of individuals and groups. They want employees to work more proactively, using timely information to fix problems, streamline processes, and make more effective decisions and plans. They want the performance dashboard to foster better collaboration between managers and staff and improve coordination among departments. They view the system as a way to manage performance, not just measure it. To them, the performance dashboard is like a steering wheel that they can turn right and left to keep the organization headed in the right direction.

TWO TASKS

1. Ensure Adoption

To meet these expectations, you still have two tasks to accomplish; the first is obvious: make sure people use the system! If people do not log in and view the data, the performance dashboard will not have any impact on the organization.

Nothing will change except your career prospects, which will plummet along with next year's performance dashboard budget.

2. Change the Culture

The second task is more formidable: use the performance dashboard to change the culture and optimize performance. A performance dashboard is an instrument of organizational change with a hairline trigger. Aim it in the right direction and performance will skyrocket; aim it in wrong direction and results will plummet along with worker morale (see Spotlight 15.1). Before rolling out a performance dashboard, executives and managers need to learn how to use it correctly to get the results they want.

SPOTLIGHT 15.1 EIGHT WAYS TO UNDERMINE A PERFORMANCE DASHBOARD

Performance dashboards are powerful agents of organizational change, but they can easily backfire and cause performance to decline or stall instead of climb. Below are eight cardinal sins that can turn a Performance Dashboard into a performance quagmire.

1. **Display too many metrics.** This scatters people's energy and attention and makes them less efficient and effective than before.
2. **Fail to get user buy-in.** Users resent when performance dashboards are imposed on them without their approval or input, and their productivity declines.
3. **Do not assign accountability.** People will not change their habits unless they are held accountable for the results.
4. **Create metrics that are too abstract.** Users cannot improve results if they do not understand what a metric means or what steps they can take to influence the outcome.
5. **Create metrics that undermine each another.** Employees work hard, but their efforts cancel each other out, sub-optimizing processes and demoralizing the staff.
6. **Use metrics to punish, not empower.** Managers who view metrics as a way to control rather than coach their staff cause morale and productivity to plummet.
7. **Attach compensation to metrics too soon.** This causes workers to spend too much time debating the reliability of a metric rather than doing their jobs.
8. **Fixating on measures, not management.** Managers who fixate on measures reward short-term spikes in performance, change plans too quickly, and fail to see larger trends driving performance.

STRATEGIES TO ENSURE ADOPTION

There is truth to the adage, "You can bring a horse to water, but you can't make it drink." Once you build a performance dashboard, will workers use it? Asking that question at the end of the development process is not a good sign! To ensure rapid uptake of the system, you need to develop a strategy to ensure end-user adoption at the very start of the project. Below are several techniques to guarantee end-user adoption and make the project a success.

1. Make the Business Drive It

The performance dashboard is a technical solution to a business imperative—the need to measure, monitor, and manage performance. To succeed, however, the technical solution must be driven by the business, not a technical team or the IT department. The head of a business unit or department must initiate the project, secure its funding, oversee its direction, sell it to mid-level managers, evangelize its use, and assume responsibility for its outcome. Chapter 4 showed that there is a strong correlation between an actively involved and committed business sponsor and a successful project with strong end-user adoption.

Too often the project team takes too much responsibility for driving a project, allowing the business to become a dispassionate observer instead of an actively involved leader. Or the IT department tries to meet the requirements of too many groups at once, which dilutes sponsorship. Without a clearly identifiable business sponsor driving the solution, the project gets mired down in bureaucracy, political infighting, and conflicting motivations. In both cases, the project gets a tepid response from target users, if it is deployed at all.

2. Make the Business Own It

This is a corollary to "make the business drive it" above. It is one thing for business sponsors to drive a project and quite another for them to put their reputations and careers on the line and assume responsibility for its outcome. When this happens, they will make time to attend meetings, provide guidance, and evangelize its importance to ensure that the project succeeds. Once a sponsor is committed to the project, the person has vested interest in getting users to adopt the system.

Business ownership also trickles down to lower levels of the organization, where the project gains traction as a resource that end-users find valuable. Here, representatives from various groups sit on governance committees that guide the project and oversee the information infrastructure. Also, subject matter experts from the business "own" the metrics in the performance dashboard and certify the accuracy of data on a daily basis, among other things.

Having the business involved at all levels in the design and administration of a performance dashboard creates considerable momentum for the system. The business has a vested interest in making sure the project succeeds. Business "owners" will identify problems and bring them to the attention of the governance committees or technical teams rather than let the problems fester into major impediments to system usage.

3. Make the Business Evangelize It

Active sponsors and drivers evangelize the performance dashboard every chance they get. They discuss the system at company and departmental meetings, and they write about it in company newsletters and on the corporate intranet. This communication continually emphasizes the importance of the project to the group's strategy and plans.

Sponsors also work with the project team to establish a marketing plan to promote the performance dashboard. The plan targets the various constituencies that either will use the system or whose support is required to build it. It defines the appropriate message for each constituency and the appropriate channels and frequency with which to deliver the information. The sponsor and project team work especially hard to sell the system to mid-level managers, who can make or break end-user adoption.

To promote the system, many organizations link articles to the performance dashboard that outline recent enhancements, answer frequently asked questions, and highlight testimonials of individuals who have had a major success with the system. They also provide links that enable users to provide feedback on the system, contact the help desk, request training, and search for help documents. Some organizations place this information on a corporate portal that users must go through to access the performance dashboard so it's hard to miss.

4. Make the Business Use It

Actions speak louder than words. Business sponsors and drivers may spend considerable time evangelizing the system, but if they do not use it, neither will anyone else. Workers pay close attention to verbal and visual cues from their managers about how much time and energy they should invest in learning a new system. When sponsors continue to rely on analysts to create reports or managers continue to use their spreadmarts, workers get the message loud and clear: do not go out on a limb when your boss is not. However, when executives and managers start using the output of a performance dashboard (whether directly or indirectly), the trickle-down effect is powerful.

"The tip of the iceberg that got this thing going was when executives had our reports all over the boardroom table and began asking 'Where's the data to back

up this decision?'" says Deb Masdea, former director of business information and analysis at The Scotts Miracle-Gro Company.

To build awareness among top executives about the power of the information now available to them, Masdea met one-on-one with many of them to demonstrate the system and get them comfortable with the output, even if they would never directly use the system. To ensure penetration at lower levels of the organization, Masdea established a network of "super users" who create custom reports for colleagues in their department. "To get people to use [the system], we created super users, not because IT couldn't create reports, but because we needed people in the business who know how to get data and get others feeling comfortable with the system," says Masdea.

5. Prove the Validity of the Data

No matter how good the system looks, if users do not trust the data, they will not use it. Validating that data in a new performance dashboard is accurate is painstaking. Users tend to distrust data that they have not seen before. Even though data in the performance dashboard may be more accurate than in the reports or spreadmarts that employees currently use, they will reject the data unless you prove to them beyond a shadow of doubt that the new data can be reconciled with their own.

For example, Masdea's team also worked hard to convince executives, managers, and analysts that the data was accurate and trustworthy. "Once you automate [the delivery of information], they don't trust it. Their secretary didn't give it to them so they're suspicious. Once you get them to the point where they have looked at data in enough different ways that they are comfortable with it, they quickly get dependent on it. Now, our users can't live without logging on [to the system] in the morning!" says Masdea.

6. Add Personal Data to the Dashboard

There is nothing that gets users to use a performance dashboard faster than displaying information that lets them calculate what their bonus or commissions will be. This helped drive initial usage of the dashboards at Quicken Loans and Hewlett Packard TSG. Once users access the performance dashboard, they quickly realize that there is other content there that can help them perform their jobs more effectively and they're hooked. In addition, allowing users to personalize the dashboard gives them added motivation to visit the site. The ability to change colors, add Web links, and select which metrics, reports, and other documents they want on the home page, gives users a feeling of ownership that prompts them to return on a regular basis.

7. Train Users

Training is critical to the successful roll-out of a performance dashboard. Chapter 14 showed a correlation between training and BI success (see Exhibit 14.6). Ironically, however, most users do not want to attend training classes. This requires project teams to get creative in the way they deliver training. Organizations need to provide a mix of training options to cater to everyone's preferences and needs. Here are some of the more common methods to train workers and increase their proficiency using the performance dashboard:

- **One-on-One Training.** Reserved primarily for top executives and their administrative assistants. Also, "super users" (described previously in no. 4) can provide one-on-one training to colleagues in their departments.
- **Classroom Training.** Usually offered to employees that have not had any experience with the system. To encourage attendance, some organizations provide continuing education credits, keep class sizes small, and offer the course on a regular basis in a professional training center. Most courses run two to three hours in length.
- **Virtual Classrooms.** Because it is expensive and time consuming for people to travel to a training facility, many organizations provide virtual training using Web conferencing or online courseware. Web conferencing sessions are live events scheduled periodically in which users can see a demo of the system and ask questions. Most sessions can be archived for later viewing. Online learning software steps users through a series of learning objectives and uses quizzes to reinforce concepts and track users' progress. Online courseware can be delivered via the Web or CD-ROM.
- **Online Help.** Most companies provide various forms of "right-time" training through which users can learn about different metrics, features, and functions as they go along. Online help may consist of documents and user manuals housed on the corporate intranet or dynamic links embedded in the software that present users with context-sensitive help. Some organizations let users request one-on-one help via Web conferencing or NetMeeting utilities.
- **Release Updates.** Many companies are getting creative in the way they inform and train employees about the functionality contained in new releases of software. Some offer classroom training, but most inform users about the enhancements through e-mail, newsletters, online help, or intranet updates. Some build mini-online courses or animations that pop up when users log into the system, providing users with a painless way to stay current with the system if they desire.

- **Rotating Tips.** Many companies publish "Did You Know?" tips in e-newsletters and when users log in to the performance dashboard. These tips highlight high-value features, provide answers to commonly asked questions, and alert users to new content in the system. Some companies use these tips or show interesting facts other users have gleaned from the system. "These tidbits of facts and figures pique users' interest," says Dave Donkin, group leader of Information Management at Absa Bank Ltd. in South Africa.
- **Help Desk.** Most companies also let users call the company's help desk to get answers to questions, instead of just report problems. Help desk personnel keep a record of the most frequently asked questions and create a link to them from the corporate intranet and the performance dashboard.

8. Track Usage

The best way to judge the effectiveness of a new release and training programs is to monitor its usage. Some companies closely monitor usage statistics, using them as an early warning signal of problems with the software or its training. For example, International Truck and Engine Corporation tracks usage even during the pilot phase of a new release. "If only three people out of ten are using the system, we meet with the other seven to find out the problems they have with it and make changes before we roll out the release," says Jim Rappé.

Rappé's group has tracked usage statistics so closely that it now knows what the uptake rate should be after issuing a new release of the software. If adoption rates are lower than normal, the team jumps into action. "If usage is below the norm, we book a 30-minute presentation during a departmental meeting to provide additional education and answer questions. We try to be proactive," says Rappé.

9. Review Satisfaction

It is important to ask users periodically what they think of the system and to get their feedback. This helps in evaluating the overall effectiveness of the system and how it can improve in future releases. Hewlett Packard TSG conducts a customer satisfaction survey every six months. International Truck and Engine issues a survey once a year that lets users express requirements for future upgrades.

PERFORMANCE MANAGEMENT STRATEGIES

Once user adoption is ensured, the next task is more challenging: using the performance dashboard to change organizational culture and improve performance. Dr. Bob Frost, principal of Measurements International Inc., describes the impact that measuring performance has on individuals:

> There's something about performance charts. When most of us see a chart depicting our efforts, we immediately feel something—positive or negative. This feeling may be about the past or the future, but it's almost always motivational and emotional....If your employees know that you value metrics and track the entire organization's performance, an amazing thing happens: the culture changes. Whether mentally or on paper, employees begin to track how their own performance contributes to enterprise performance. And a 'results-tracking culture' is one of the most powerful competitive advantages your enterprise can have.[1]

The trick with a performance dashboard is to harness this emotional reaction to drive behavior in the direction that delivers the most value to the organization. This is not easy. Workers can react negatively to metrics that are improperly designed or circumvent them for personal gain. Or performance metrics and targets can push and pull individuals and the organization in potentially different directions. The following are recommendations about how to use metrics and performance dashboards to drive performance in the right direction.

Test Assumptions

This book earlier discussed the importance of strategy maps to define linkages among objectives and metrics. However, strategy maps are not just a design tool; executives should used them continuously to test assumptions about what drives performance and make adjustments. By fine-tuning strategy, metrics, targets, and initiatives, executives can use a performance dashboard to literally "steer" the organization in the right direction.

Ideally, each linkage correlates objectives and metrics using a mathematical relationship. For example, executives believe that if customer loyalty increases by 5 percent, revenues go up by 1 percent. A performance dashboard then enables executives to evaluate the validity of their assumptions about these linkages. Perhaps customer loyalty does not affect revenue growth as much as they thought, but product quality—which they did not specify as a revenue driver—correlates very strongly. They then add this new metric to the strategy map and recalibrate the linkages to create a more accurate model.

In the past, executives kept these assumptions and models of how the business operates in their heads. Often, they never formally expressed or tested these assumptions, sometimes with disastrous consequences. Many executives have launched multi-million-dollar initiatives based on false assumptions about what drives profits, revenues, or shareholder growth.

Focus on Management not Measurement

The temptation with performance dashboards is to focus too much on measures and results and not enough on process and strategy. When this happens, execu-

tives fail to see the "forest for the trees." They are so focused on measures that they fail to see the bigger picture of what is going on and what they need to do to move the organization in the right direction.

Whipsawing

One symptom of this problem is when executives reward or punish managers for short-term spikes in performance. When performance is evaluated every day or week, there is a tendency to overemphasize short-term fluctuations and miss emerging trends.

"Just like the temperature, metrics swing significantly. You need a process to balance that. You can't throw your planning away if you don't make your numbers one week. It is very counterproductive to overfocus and overdrive on specific elements. You may drive one metric up but the means you use to get there may not overall satisfy the needs of the business," says John Lochrie, senior vice president at Direct Energy Essential Home Services.

Achieving Balance

Lochrie recommends creating a set of metrics that balance the key drivers of the business, which for Direct Energy are operational efficiency, customer satisfaction, and employee satisfaction. "You should evaluate each metric by how good it is for employees, customers, and the business. If a customer likes it, but you kill your employees in the process, then you're ultimately going to fail," says Lochrie.

Examine the Business Context

It is also important to understand what is really driving the measures and continually reevaluate your assumptions. For instance, a performance decline may not mean employees are slacking off—even though this was the case in the past—something else may be going on that you have not anticipated. For instance, staff may be saddled with additional work or requirements that did not exist before. In many instances, the current metrics may no longer be a valid way to assess performance in a changing or more complex environment.

"What I've learned is don't just tend to the numbers. Think more about what is driving the numbers. Are people making the effort but just not getting there, or are people not making the effort any more because they can't overcome the challenges out there? You have to continually pause to take a breath, every 6 to 12 months, and assess the overall climate in which you are operating and ask whether the current metrics are still relevant," says Lochrie.

The important thing, he adds, is to make sure employees have the resources and training they need to be successful. This includes training their managers to

provide them with assistance and guidance in the field. Ultimately, the goal is to make employees and, by extension, the organization successful.

Law of Diminishing Returns

Also, it is important to know when you become a victim of the law of diminishing returns. This is when the effort and cost to increase performance outweigh the returns. When a company first introduces a metric, performance usually increases rapidly but then it gradually tapers off. For instance, a company that starts tracking customer satisfaction sees scores increase from 50 percent to 70 percent in one year, but then can barely get the scores to nudge above 72 percent for the next three years no matter how much effort it expends. When you have reached the point of diminishing returns, it is better to expend the company's energies elsewhere.

Get User Buy-In

Avoid "Us versus Them"

Performance management is not something you impose on workers or do to them. Such heavy-handedness always backfires. When workers see performance metrics as a stick rather than a carrot, their enthusiasm and motivation will wane. To avoid an "us versus them" mentality, it is important to get users' feedback on the validity and reasonableness of metrics and targets before applying them. This can be done in group meetings, surveys, or comment forms.

Respond to All Input

However, do not make the mistake of taking feedback and not responding to it. Every comment should be recorded and a response delivered in person or in writing. This takes time but it demonstrates to workers that you have received their input, acknowledged their ideas, and taken them under consideration. It would also be helpful to schedule "open door" sessions in which workers can call, e-mail, or visit to discuss their concerns.

Expect Pushback

Workers often get nervous about the impact performance metrics will have on their jobs and compensation. So, expect users to push back, but do not be alarmed; this is part of the process. "The first thing that happens when you hold people accountable for metrics is that they say it isn't tracking them right. That's a healthy feedback loop. If you are not getting that pushback, you are probably not challenging the staff enough," says Ripley Maddock of Direct Energy Essential Home Services.

Explain the Data

If a worker has a serious issue with a metric or a performance result, the first thing to do is explain how the data were collected and calculated so the person understands the mechanics. Then work backward from individual events—a sale, a repair, a work order—to the aggregated data to see whether the system tracked the event correctly. "Too many times people will say, 'I don't think that metric is right.' We try to get them down to factual examples. Let's look at this sales order and see how it was measured. If they don't think the business should measure it this way, we'll bring that back up to management for review," says Direct Energy's Maddock (see Spotlight 15.2).

SPOTLIGHT 15.2 A TACTICAL DASHBOARD IN RETAIL SERVICES

In 1999, Direct Energy Essential Home Services, North America's largest competitive energy and home services retailer, was founded as a result of deregulation of the natural gas industry in Canada. To compete effectively in the open market, Direct Energy developed a tactical dashboard to monitor the execution of its new business strategy (see Exhibit 15.1).

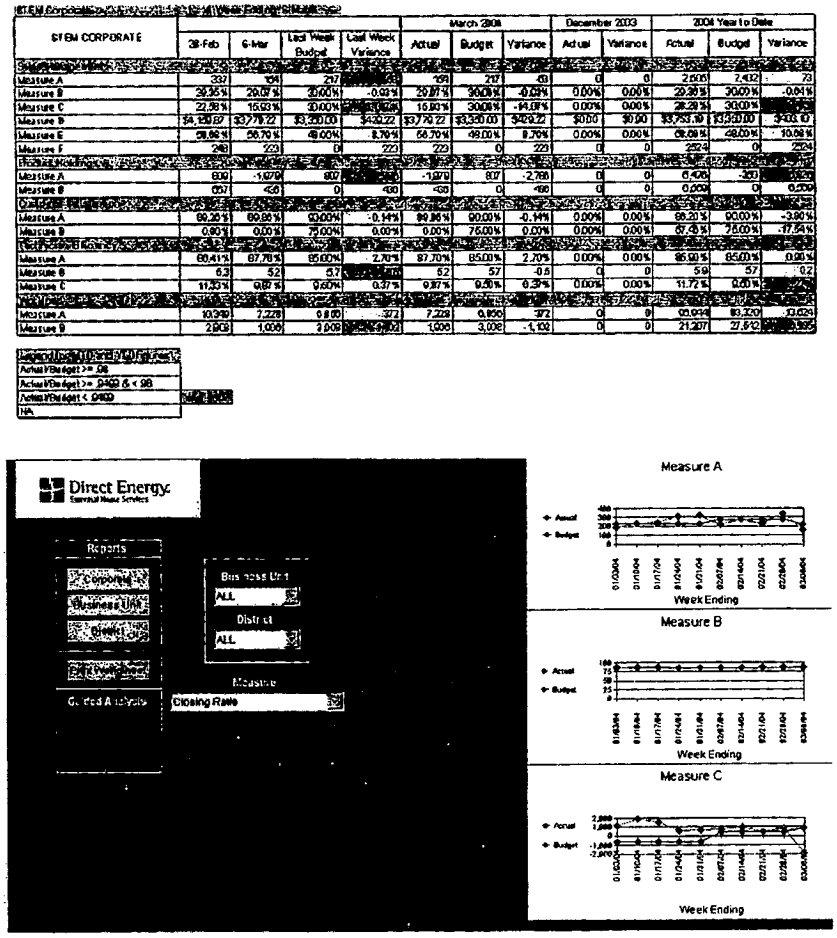
"We knew we couldn't do business like we had previously," said Ripley Maddock, director of customer management at the company. "We now had to be driven by ROI, shareholder value, and customer needs. To make this transition, we needed a way to measure our performance against these new metrics and hold everyone in the organization—from executives to field technicians—accountable for the results."

Today, more than 400 personnel, including 300 field technicians, view their performance against budget contained in an easy-to-use Web-based dashboard that costs less than $100,000 a year to maintain. District managers use the dashboard to compare their district's and staff's performance against other districts. They review the results with field technicians on a regular basis and showcase individuals who have exceeded targets.

In the two years after Direct Energy implemented the dashboard, the firm reduced the number of repair calls by 2.82%, saving the company $1.3 million while improving customer service. Most of this reduction was driven by a *repeat call* metric on the dashboard, which tracks how many times a technician visits a household to fix a problem. Direct Energy believes this metric offers a good indicator of customer satisfaction and service efficiency, among other things.

Perhaps the most important benefit of the dashboard is that it has changed the entire tenor of discussions about performance at the company. According to Larry Ryan, the group's former general manager, the dashboard is a communications vehicle designed to bring managers and staff together to discuss how to meet or exceed performance expectations and fix outstanding problems, not to dwell on excuses for underachievement.

EXHIBIT 15.1 A SIMPLE TACTICAL DASHBOARD



This tactical dashboard from Direct Energy Essential Home Services keeps things simple, which is often best. The dashboard (top image) lets users define three key metrics to view by selecting from a list of measures, such as closing ratio, that appear in a drop-down box. Users then choose the business unit and district they want to see data for using the drop-down boxes above the measures drop-down box. If users want more detailed data, they cannot yet drill down into the charts or select other dimensions or filters. However, the dashboard does provides a button to view a list of color-coded corporate, business unit, or district reports, which they can display on the screen or print as Excel spreadsheets (bottom image). If they are not sure which report to view, they can click on the "guided analysis" button, which steps them through a series of "yes/no" questions to narrow down their choices.

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Let Users Focus

A performance dashboard uses metrics to focus workers on high-value tasks that drive performance in the right direction. The fewer the metrics, the more focused workers can be. Thus, a critical factor in using dashboards to optimize performance is to select the right number of metrics to display on the screen for each user. Unfortunately, no one agrees on a single number. However, most believe it is counterproductive to overwhelm workers with too many metrics.

As a rule of thumb, workers managing operational processes should track fewer metrics, probably less than a handful, whereas executives responsible for setting strategic direction should view many more metrics, perhaps a dozen or more, each with multiple levels of drill-down to lower level metrics. The more areas and activities someone manages and oversees, the more metrics that person will need to monitor.

Hold Users Accountable

It is important that there is an individual or group accountable for the outcome of each metric. This puts teeth into the measures and galvanizes the organization. It lets everyone know in a very personal way that executives are serious about using the dashboard to improve performance and change the culture.

It is best to hold individuals accountable for results. This is true even when performance is a shared responsibility among many people and groups, such as customer loyalty. However, the accountable individual must be given certain authority to allocate resources, make decisions, delegate responsibility, and reward performance to achieve the objectives.

Another way to galvanize the organization around performance metrics and reinforce accountabilities is to publicize the results broadly. Allow people to see how their performance compares with that of their peers. This fosters a competitive environment in which few people want to be seen as laggards or slackers in the organization.

Empower Users

If you are going to hold people accountable, you have to empower them to act. You need to give them more leeway to make decisions and not force them to adhere to prescribed processes or procedures. You also need to make it clear how they can affect the measures. This means creating measures that are easy to understand and appropriate to each level in the organization. For example, you cannot expect assembly floor managers to know how to improve net profits, but they probably have a good idea about how to reduce scrap and quality problems.

"For metrics to be motivational, people must be able to see what to do. There must be a *line of sight* between the actions employees can take and the changes that occur in the measure," writes Frost.[2]

Train Managers to Coach

The problem with individual performance reviews is that they rarely happen. Often, the reason is because managers are too busy to compile the relevant information and write up the results. However, a performance dashboard collects a lot of the information for managers. It becomes an effective tool to help managers conduct performance reviews on a regular, or even continuous basis as needed.

The key to using a performance dashboard for performance reviews is not to punish workers for poor performance, but help them see how they can improve. Managers need to know how to provide workers with the resources, tools, and knowledge to help their staff succeed. This requires training, not just education, says Lochrie. "You can educate managers by going through the process and telling them what's good and bad, and then they go out and do their own thing. By training, you physically witness what the managers do and make sure they do the right things and behave in the right way. Then you coach and re-coach them."

Reinforce with Monetary Incentives

A major way to focus workers' attention on the metrics is to pay for performance. It has been said that "What gets measured, gets done." However, it is also true that "What gets done is what you pay people to do."

None of the companies mentioned in this book use performance dashboard as the exclusive vehicle for calculating bonus payments or total compensation. However, most have a few metrics in the dashboard that affect compensation, and some are slowly moving to adopt the performance dashboard as the primary tool for determining bonus payouts.

It is important not to attach compensation to metrics and targets until they become stable. It is not easy to change metrics once people's compensation is based on them. Even the smallest change can cause people's income to rise or fall dramatically, and they will protest vehemently. If a change or restatement of results is required, it is best if it works in favor of the staff, to avoid dissension.

Another reason to postpone attaching pay to metrics is that it takes time to close all the loopholes that might allow staff to jury-rig the results or take unwarranted shortcuts to boost their performance scores. In a similar vein, you should not let executives design metrics that are used to calculate their bonus payments. They will surely shape the metrics to ensure that they can meet their numbers and earn a sizable bonus.

SUMMARY

End-User Adoption. A performance dashboard is a powerful agent of organizational change. However, if employees do not use the system, the dashboard will

not have any impact at all. Thus, the first task of any business performance manager is to ensure that employees use the system and see it as an integral part of how they do their jobs.

Ensuring end-user adoption starts at the beginning of the project when business sponsors and drivers are being recruited. Business sponsors must provide the organization with the right visual and verbal cues that the system is worth the time and effort to learn and use. Sponsors need to sell and evangelize the project, accept responsibility for its outcome, and, most importantly, use the system. Sponsors must also ensure that lower levels of the organization step into "ownership" roles, such as serving on stewardship committees and taking responsibility for defining, updating, and certifying key metrics and data elements.

Another key element to ensuring end-user adoption is to get users to trust the data in the new system. This requires the project team to reconcile data in the new system with data in the old systems. Other techniques to ensure a fast uptake of the performance dashboard include flexible training, usage tracking, and regular surveys of end-user satisfaction.

Performance Management. A performance dashboard is a tool to help the organization achieve its strategic objectives. To do that, the performance dashboard needs to motivate individuals and groups to work on the right tasks that move the organization in the right direction. However, it is not easy to ensure that every metric has its intended effect on its target audience. This requires executives to constantly fine-tune their assumptions about what is really driving performance.

A strategy map is a good way for executives to document and test their assumptions about the relationships between metrics. They also need to beware of fixating on short-term results without considering larger trends driving performance, which may require new or revised metrics to track accurately. Most importantly, executives need to ensure that managers and staff have the appropriate knowledge and resources to succeed. Managers, in particular, need to be trained how to use the performance dashboard to empower staff, not punish them.

Metrics and performance dashboards naturally get users' competitive juices flowing. To sustain motivation, organizations can publicize performance results so workers can compare their performance against that of their peers. They can also attach bonus payments to performance results, which really ups the ante. However, before mixing pay with performance, executives need to make sure the metrics are stable, reliable, and tamperproof.

NOTES

1. Dr. Bob Frost, "Measuring Performance" (Ogdensburg, NY: Measurements International Inc., 2000), p. 43.
2. Ibid.

Criteria for Evaluating Performance Dashboards

Whether you plan to build or buy a performance dashboard, you can use these criteria to evaluate potential products or solutions and determine whether it is a good fit for your organization.

DESIGN

- **Web-Based.** Simplifies user access and centralizes data management and administration, making it easier to support thousands of users. Also avoids downloading large volumes of data to user desktops across potentially low-speed networks.
- **End-User Design.** Lets authorized end-users define objectives, metrics, targets, thresholds, initiatives, and alerts quickly without coding.
- **Associations.** Lets authorized end-users associate objectives, metrics, targets, and initiatives with each other.
- **Multiple Targets.** Lets users apply two or more targets and associated thresholds to each metric, including forecasts, budgets, prior actuals, and external benchmarks, among others.
- **Groupings.** Lets authorized end-users categorize objectives, metrics, and initiatives by different perspectives.
- **Layouts.** Provides various ways to group related metrics, scorecards, and other objects on the screen, such as tabs, folders, tables, columns, and custom designs.
- **Strategy Maps.** Lets executives visually map linkages between metrics and estimate and test the degree of correlation.

- **Personalizable.** Lets end-users select metrics, alerts, and other objects from authorized lists and arrange them on the screen to suit their preferences without coding.
- **Flexible Graphs.** Provides various types of graphs, symbols, and color-coding that let users quickly evaluate performance state, trends, and variance for critical metrics.
- **Multiple Disciplines.** Supports multiple methodologies for measuring and managing performance: Balanced Scorecards, Six Sigma, Total Quality Management, Economic Value Add, European Foundation of Quality Management, and ISO 9000.

ANALYSIS

- **Layered.** Arranges information in layers, with each successive layer providing additional detail and perspectives about a metric, process, or event.
- **Tables and Charts.** Plots data using tables and a wide selection of chart types. Lets users toggle between a table and a chart or different chart types or lets them view both a table and chart on a single page.
- **Comparisons.** Tables and charts compare data with targets and thresholds by applying rules against a repository of performance data to ensure fast response times.
- **Drill Down/Up.** Lets users drill down from summary level views of metrics to detailed views with a single click of the mouse on the object they want to view in more detail.
- **Drill Across.** Lets users switch views of a metric by changing dimensions (i.e., customer, geography, channel) using a drop-down list box or some other graphical control.
- **Drill Through.** Lets users drill through to transaction details stored in a remote system (e.g., a data warehouse, operational system, or external database) or online reports created in other applications.
- **Interactive Reports.** Lets users sort, rank, filter, regroup, or format the data, and insert or delete columns, modify calculations, and drill to more detail if available.
- **Landmarks.** Visually shows users where they are in the data using a path metaphor or decision tree. Lets them return to any previous location with a single click.
- **Guided.** Uses steps to guide less experienced users through the data or analysis by limiting the drill down/across paths and providing context-

sensitive recommendations for next steps (i.e., reports to see or actions to take).

- **Dynamic Views.** Lets users define and subscribe to new views of "right-time" data coming from one or more operational systems.
- **Advanced Analysis.** Lets users perform "what if" analysis to model scenarios and perform regressions to improve the accuracy of forecasts, among other things.

DELIVERY

- **Access.** Lets managers access different scorecards at various levels of the organization.
- **Publishing.** Lets users publish custom views of the data to the Web for their own use or for others to view. The views are automatically updated with the latest data when users next access them.
- **Custom Output.** Lets users schedule and publish views in a variety of formats (i.e., Web, Excel, PDF, and so on) to a variety of channels (e.g., Web, e-mail, printer, wireless device).
- **Custom Access.** Lets users view and interact with the dashboard via wireless devices and access published views via Excel and PowerPoint.
- **Portable.** Lets users disconnect from the network and take the dashboard with them on the road. This can be done by exporting to Excel or creating a replica of the original view or report.
- **Printable.** Lets users print one or more views in the dashboard with proper page breaks and headings, in any order they prefer, such as from most to least below target.
- **Annotations.** Lets users attach comments to individual metrics and respond to comments made by others.
- **Workflow**. Lets users set up a workflow that routes their published view of data to designated people for review and/or approval.
- **Data Entry.** Provides forms that let users enter performance data manually and automatically reminds them to fill out the forms.
- **Properties.** Lets end-users right-click on any object to examine its properties, such as its owner, when it was last refreshed, how it was derived, and so on.
- **Multi-Source Queries.** Dynamically populates different elements on a dashboard screen with data from different sources, or merges data from multiple sources into a single element on the fly.

ADMINISTRATION

- **Metadata.** Stores definitions and rules about metrics, dimensions, hierarchies, user roles, preferences, and system configuration, among other things, for static lookup, auditing, and dynamic runtime invocation.
- **Customizable.** Lets administrators customize the screens by roles and users, displaying only the tabs, metrics, reports, and data that users are authorized to see.
- **Role-Based Security.** Dynamically displays only the objectives, metrics, initiatives, and other objects that users are authorized to see based on their role in the organization.
- **Row-and-Column Security.** An extra level of security provided at the database level that prevents users from seeing specific rows or columns based on their security profile.
- **Audit Trails.** The software records every change made to the system and by whom and when for control and auditing purposes.
- **Lock-Outs.** Keeps users from changing manually entered data and comments after a certain date to prevent tampering.
- **Usage Statistics.** Tracks usage by users and objects. Used to monitor uptake of the software by target users and for chargebacks.
- **Configuration.** Lets administrators configure the software to run against various data sources, design multidimensional models for analysis, set up drill paths and prompts, customize layouts, manage security, and tune the software for performance, among other things.
- **Responsive.** Lets developers deliver new capabilities within days or weeks, not months or years.
- **Intelligent Agents.** Lets administrators create rules that trigger a series of context-sensitive actions in response to an exception condition, such as sending different types of alerts (i.e., Web, pager, e-mail) based on the nature of the exception; lets administrators issue queries to locate the right person to call or perform other functions.

INFRASTRUCTURE

- **Compatibility.** Works with existing hardware, software, database, network, and storage systems.
- **Alignment.** Works within your organization's existing information architecture that specifies how data flow from operational systems to end-users for reporting and analysis purposes.

- **Standards.** Supports industry standard interfaces, technologies, and frameworks, such as Web Services, XML, LDAP, services-oriented architectures, and so on.
- **Data Management.** Stores historical performance data in a data mart or data warehouse; stores "right-time" data in an operational data store or online cache; and accesses "real-time" data via middleware (i.e., EAI) or dynamic queries against operational systems (i.e., EII).
- **Application Integration.** Integrates with third-party applications, such as portals, budgeting, planning, forecast, project management, and operational applications. Integration can be done via an import/export mechanism, exchanging data and metadata via a synchronization mechanism, or programmatically using application programming interfaces and middleware.
- **Data Integration.** Reads any data type (e.g., Excel files, Web pages, text, XML, relational data) from any system (e.g., mainframe, minicomputer, file server) and stores it to an intermediary server where the data can be scrubbed, transformed, and joined as needed and loaded into the performance dashboard.
- **Multidimensional Views.** Supports multidimensional views of data, usually delivered via an OLAP tool that either stores data in a specialized multidimensional database or maps relational data into a multidimensional view on the fly.
- **Security.** Integrates with an organization's existing security system and supports security standards, such as LDAP.
- **Software Customization.** Lets developers customize the look and feel or functionality of the software using application programming interfaces and custom code, preferably in an industry standard language, such as XML or Java.
- **Fast.** Provides fast response times to user clicks and requests for data, measured in seconds not minutes.
- **Scalable.** Performance doesn't degrade no matter how many users are on the system at any given time or how much data are stored or requested at a given time.
- **Reliable.** The system is continuously available, even when new data are being loaded into the system or updated, and suffers few, if any, outages.

VENDORS

- **Type.** Does the vendor offer a best of breed or integrated solution? If the former, does it focus solely on delivering Balanced Scorecards or some other

type of dashboard (i.e., operational or tactical)? Does it sell dashboards exclusively or broader BI solutions? If it sells an integrated solution, does the vendor focus solely on business performance management (i.e., budgeting, planning, dashboarding, reporting, and analysis software) or does it sell an enterprise suite of applications including BPM? Best of breed solutions offer greater functionality but don't integrate as well as packaged solutions or enterprise suites.

- **Viability.** Is the vendor a startup or established player? If your organization is a leading-edge adopter of technology, a startup might be better, to gain a competitive advantage. If not, selecting an established player is the better route.
- **Partnering.** How much is the vendor willing to partner with your organization to ensure its success? Does it leave consulting to a third party or provide such services itself? How high do you have to escalate a problem within the vendor organization before you get a satisfactory response? Observing vendors during scripted demos, proofs of concept, and negotiations provides clues to their commitment to your success later on.
- **Service and Support.** Check references to find out the quality of the vendor's service and support. The vendor help desk can bail you out of tight situations, so they had better be good.
- **Pricing.** How flexible is the vendor pricing? Does it offer named user, concurrent user, role-based, or server-based pricing or variants of all three? Does it charge by server, CPU, or CPU clockspeed? The latter can be expensive if you upgrade your hardware. Are maintenance charges based on list price or net price? Does maintenance include all new releases and versions or just point upgrades?
- **Technology.** Does the established vendor need to upgrade its architecture to keep pace with advances in technology? If the industry spawns more than one startup with modern architectures and substantially lower prices, the vendor may soon get squeezed by its legacy technology.

Glossary

Active data warehousing. A hybrid data warehousing platform espoused by Teradata, a division of NCR, that supports both analytical and operational queries.

Agents. A rule-based engine that triggers a flexible set of actions in response to an event or exception condition, such as sending different types of alerts, querying data, or creating a workflow process to resolve a situation.

Alerts. Notifications sent by users or administrators that let users know when a metric exceeds predefined thresholds.

Balanced Scorecard. A strategic dashboard methodology defined by Professor Robert S. Kaplan and consultant David P. Norton using a balanced set of metrics across all facets of an organization that focus employees on the activities and tasks that will achieve strategic objectives and deliver lasting business value.

Business performance management. A series of organizational processes and applications designed to optimize the execution of business strategy. Includes Performance Dashboards as well as financial consolidation and reporting, forecasting, planning, and budgeting, among other things.

Business process management. Technology designed to automate and optimize business processes using modelling, work flow and middleware tools.

Corporate portal. A personalized Web interface to business content that people need to do their jobs. (Courtesy of Colin White.)

Dashboard. A visual display mechanism used in an operationally oriented performance management system that measures performance against targets and thresholds using right-time data.

Data. The output of source systems and applications, i.e., transaction data or text data.

Data mining. Also known as knowledge discovery in databases (KDD), data mining lets statisticians and skilled business analysts create models that automatically "mine" or discover patterns in the data and generate statistical models and rules.

Data mart. A data warehouse that focuses on a single subject area and is targeted to a specific homogeneous group of users.

Data model. The logical representation of how the business operates and its physical instantiation within a database management system.

Data warehouse. A repository of clean, integrated information culled from multiple systems that delivers information to end-users or downstream data marts.

Enterprise application integration (EAI). Middleware that integrates applications by transmitting events among applications in near real time.

Enterprise information integration (EII). Tools that query multiple, distributed data sources and join the results on the fly for display to end-users.

Extraction, transformation, and loading (ETL). Tools that extract, transform, and load data from source systems into a data warehouse or data mart.

Graph. A visual display of quantitative data that includes a scale, visible or suggested, along an axis of some sort. Examples of graphs are charts (e.g., bar, pie, line, scatterplots, and so on), histograms, sparklines, empire graphs, meters, gauges, and dials. (Courtesy of Stephen Few.)

Information. Transactional data that have been integrated or aggregated for analysis.

Key Performance Indicator (KPI). A metric measuring how well the organization or individual performs an operational, tactical, or strategic activity that is critical for the current and future success of the organization.

Lagging indicator. A KPI that measures the output of past activities, such as most financial metrics.

Leading indicator. A KPI that measures activities that have a significant effect on future performance.

Measurement. The result or output of measuring an object or activity.

Metric. The standard measurement of a known object or activity. For example, a company has a metric to calculate customer profitability and another that calculates customer loyalty.

Online analytical processing (OLAP). Gives users the ability to slice and dice information dimensionally. OLAP databases (also called multidimensional databases) store information dimensionally, whereas OLAP tools let users access and analyze those data.

Operational dashboard. A performance management system that delivers right-time information about core operational processes and emphasizes monitoring more than analysis or management capabilities in a performance dashboard framework.

Operational data store (ODS). A slimmed-down data warehouse designed to deliver rapid responses to short, operational queries, such as a request by a telemarketer for a profile of a customer who just called in.

Parameterized report. A report offering users pick lists or prompts that let users filter a report dynamically. Mimics OLAP and ad hoc querying to a certain degree.

Performance dashboard. A multilayered application built on a business intelligence and data integration infrastructure that lets users monitor, analyze, and manage performance using a dashboard or scorecard interface. Also called a performance management system.

Performance management system. An information system built on a business intelligence and data integration infrastructure that lets users monitor, analyze, and manage performance using a dashboard or scorecard interface. Also, a performance dashboard.

Query and reporting tools. Tools used by end-users to create their own reports.

Real time. The delivery of information about events as soon as they occur versus right time, which delivers information to users when they need it to make proactive decisions.

Report design tools. Tools used by professional developers or business authors to create custom reports.

Right time. The delivery of information to users when they need it to make proactive decisions. Right-time data delivery ranges from seconds to days or weeks, depending on user requirements.

Scorecard. A visual display mechanism used in a strategically oriented performance management system that charts progress towards achieving strategic objectives by comparing performance against targets and thresholds.

Spreadmart. A spreadsheet or desktop database created by a business user that functions like a surrogate data mart, containing unique terms, definitions, and rules that are not consistent with those used in other systems throughout the enterprise.

Strategic dashboard. A performance management system that focuses employees on the activities and tasks that will achieve strategic objectives and deliver lasting business value. It emphasizes management more than analysis or monitoring capabilities in a performance dashboard framework.

Strategy map. A tool used in a strategic dashboard or Balanced Scorecard to define linkages between strategic objectives and the measures that represent them. Used to both create and refine the organizational strategy and help executives test their assumptions about causal linkages between objectives and metrics.

Symbol. An image or shape that refers to something else. Common dashboard examples are colored circles, arrows, icons, and traffic lights.

Tactical dashboard. A performance management system that lets managers and analysts track the progress of departmental initiatives and projects and analyze trends and issues. It emphasizes analysis more than monitoring or management capabilities in a performance dashboard framework.

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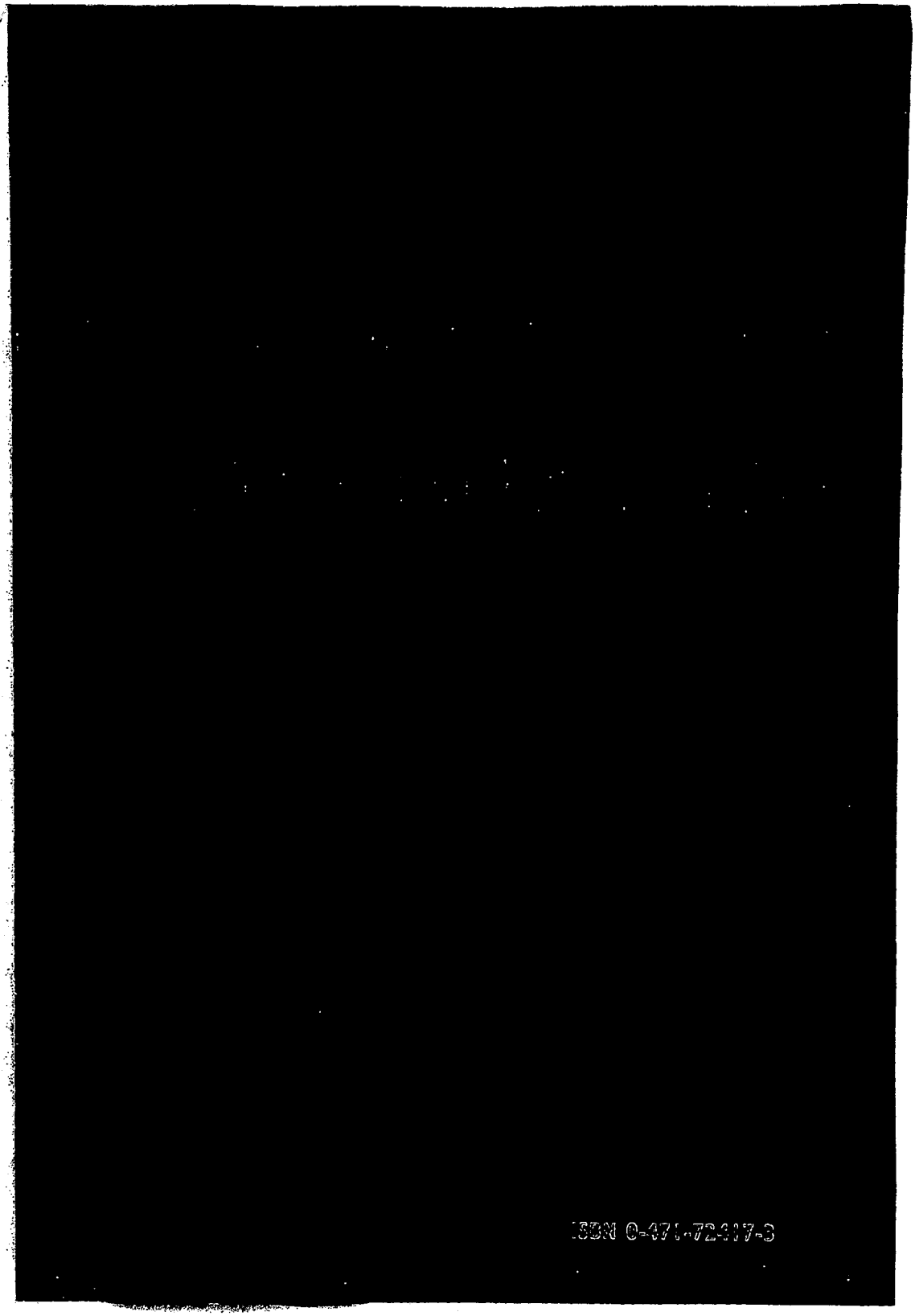
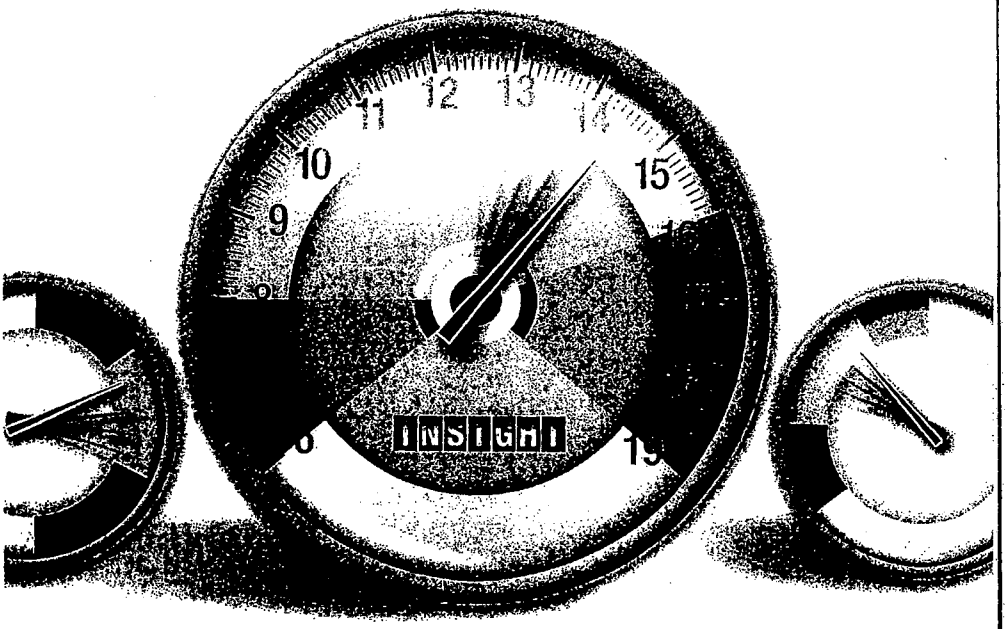


Marketing by the Dashboard Light

How to Get More Insight, Foresight, and Accountability from Your Marketing Investments



Marketing Effectiveness

By Patrick LaPointe

MARKETING^{NPV}®

www.MarketingNPV.com

A marketing dashboard can be your catalyst for success and credibility. But where do you start? What do you include? And how will you ensure that your marketing dashboard will add to marketing's accountability?

Marketing by the Dashboard Light: How to Get More Insight, Foresight, and Accountability from Your Marketing Investments gives you insight into planning, design, construction, and implementation of an effective marketing dashboard. And for those who already have one, *Marketing by the Dashboard Light* gives you the information you need to help retool and focus your dashboard for maximum effect.

More Praise for *Marketing by the Dashboard Light*

"This is the best practical guide to the dashboard and the marketing metrics that should appear on it. Every business person concerned with their sources of cash flow should read it several times."

Tim Ambler, Senior Fellow, London Business School, and author of *Marketing and the Bottom Line*

"Accountability is finally here. Tracking and measuring marketing and communication is finally possible and Pat tells you how."

Don E. Schultz, Professor Emeritus, Northwestern University, and author of *IMC: The Next Generation*

"I really enjoyed reading *Marketing by the Dashboard Light*. Its content is very useful and will certainly enable me to better assist our clients. Thank you for such a wonderful tool."

Greg Timpany, Director of Research, Wilkin Guge Marketing

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To all the hundreds of people from whom I've stolen ideas and drawn inspiration over the years. I only hope you find this a valuable means of getting even with me.

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Part II

What Do We Measure? Choosing the Right Metrics for Your Dashboard

Acknowledgments

The first thing I need to acknowledge is that this book is a work in progress. It will never be finished.

Much like our broader exploration of measuring marketing effectiveness, the real learning is just beginning. True, we've been helped along (as the concepts here were) by some of the most brilliant minds in marketing today, including Don Schultz of Northwestern, Tim Ambler of the London Business School, Gary Lilien of Penn State, and Dave Reibstein of Wharton. Each has patiently shared his invaluable perspective and tools and tolerated the endless stream of "but if that's true then why ..." questions. More than 15 years out of grad school and I'm getting a second chance to work with this incredible faculty. It doesn't get any better than this.

We were also very fortunate to have had the opportunity to interview dozens of CMOs to help us understand what is working (and not working) in marketing measurement today. A few who generously offered their insights and experiences include John Costello (formerly CMO of The Home Depot), Becky Saeger of Charles Schwab, Jim Garrity of Wachovia, Joe Tripodi of Allstate, Larry Light of McDonald's, Anne MacDonald of Citigroup, Mike Winkler (formerly CMO of HP), Scott Deaver of Avis, Scott Fuson of Dow Corning, Arun Sinha of Pitney Bowes, and many others who shared their thoughts informally but contributed to our framework significantly. Thank you all.

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I say "we" because I've had a tremendous amount of help in writing this book from friends and co-workers. Tina Anagnostis worked tirelessly to edit and re-edit both text and graphics. Lisa Holton contributed hundreds of hours as a valuable Contributing Editor. Nicole Shillingford kept the other wolves at bay so I could steal precious hours to think and write. Ruth Stevens tightened our thinking and writing. Noushin Nourizadeh made it all look great. And Jennifer Zipf meticulously managed the final editing, layout, and production to perfection despite my many failures to remain on schedule.

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And finally, I owe a tremendous debt of gratitude to my family for all the days and nights they allowed me to hide away in my office and write. Please don't ever let me do it again.

Introduction

"*I feel pretty good about all the measurement activity we have going on around here. We've got some incredibly bright people doing some very sophisticated things to determine the effect of our marketing investments. But I still don't feel we have developed any synthesis across those various ad-hoc efforts. We've got some great models, but they're not linked well to our equally great research. We're getting better — but we're not getting to a bigger picture, just getting better at drilling down into the smaller ones.*"

In the course of interviewing dozens of *Fortune* 100 chief marketing officers (CMOs) for this book, we heard that comment (or a close approximation of it) time and again. So often, in fact, that it would be unfair for us to attribute it to any single CMO, but rather to a majority of the group.

The early stages of marketing effectiveness measurement (and let's face it, we are still in the early days) have been characterized by great progress in quantifying the quantifiable. As an industry, we have made some terrific strides in measuring those things for which data is available. We've learned to build mix models to optimize media expenditures. We've reallocated resources across channels and products. And we've gone a long way in many industries to understanding customer-specific profitability and the ROI of individual marketing initiatives.

Yet as the quote above shows, there is still a hunger for answers to the BIG questions about marketing. Not the one that asks, "What is our ROI on that campaign?" (although that's important), but the one that answers the CEO question of, "Should I double my marketing investment or cut it in half?" Without the ability to view effectiveness

horizontally — across programs, initiatives, campaigns, segments, geographies — we are relegated to optimizing the current world view instead of creating new ones.

The reason we seem to be stuck in ad-hoc "measuredom" is that most of us have heretofore approached marketing measurement from a tools-and-data perspective instead of an organizational business-process view. The process of designing and implementing a *marketing dashboard* as described herein is intended to address exactly that error in perspective.

The creation of a marketing dashboard forces alignment between company goals and marketing objectives. Executed properly, it is a big step in giving your executive committee the financial and strategic transparency they've been demanding. Better measurement and better communication will give your department the freedom — and hopefully, the funding — to do more of what you do best.

The best marketing dashboards hone our instincts and intuition. They move talented people away from their dependence on past-performance data and change the orientation to look ahead to the horizon. They can be leading indicators to tell you when marketing initiatives are working, and quick-correction systems when they're not. In short, the dashboard delivers better marketing accountability, which translates into higher credibility.

It's all in how you build it.

A well-executed dashboard can make marketing effectiveness transparent to the CEO and the entire executive committee of your firm so they never again need to ask the question, "We gave you $5 million for XYZ project. What exactly did we get for that money?"

The process of designing and deploying a dashboard provides the discipline of what to measure and then conveys the performance on those metrics. In fact, done correctly, the focus of an effective marketing dashboard is more on where the next $5 million should go, not where the last $5 million went.

There is no "industry standard" marketing dashboard. There shouldn't be. Dashboarding is an evolving practice, especially in

marketing. In a few years, the best of the best will emerge to tell their stories at conferences around the world. But until then (and likely even after), the best dashboard in the industry is the one that best serves *your* organization.

A marketing dashboard needs to be a customized, relevant, context-specific tool that fits the learning style and unique business dynamics of your organization — from financial reporting requirements to data availability to channel structures to sales funnel processes.

A well-executed dashboard takes a thorough look at your marketing team — the strength of your staff, the data and metrics you depend on now, your alliances with other departments, and an honest assessment of how you communicate. As you'll see, the dashboard is merely the visual display of the machine's inner workings. You and your people are the machine.

This book is about building feedback mechanisms to gain more control of your marketing impact. It's about forming a solid foundation for learning that over time will enlighten the CMO and his or her team to get better at predicting and anticipating the potential impact of marketing programs, initiatives, strategies, or changes to the marketing portfolio.

Analytical methodologies will always be important to this process, and sound science can help to focus and magnify the effect of marketing creativity and instinct. But you create real value for shareholders and improve your influence among other constituencies when the analytics are implemented in the context of good organizational practices — structure, process, skills, and tools.

The right marketing dashboard puts the most insightful dials and digits in front of you in a package that's simple, informative, and illuminating — all at a single glance. It needs to be dynamic, and it needs to reflect how your marketing organization is working at any point in time, not six months ago or even two weeks ago.

That's why there really is no "one size fits all" available for this purpose. You design a dashboard to fit your need for understanding and insight — period. And while many software companies offer all sorts of prepackaged solutions, the best solution is *always* the one

that communicates most effectively the things that are most important to you. And that particular solution may come in the most modest, homegrown package.

Start Your Engines

Here's where your thinking should start. A marketing dashboard is an evolutionary journey. It starts best with a small set of key metrics and a limited number of drill-down page views. Initially, it may appear as a single page view that gets updated weekly and passed around in hard copy. Eventually, it can grow to become a real-time window into dozens of key metrics that update every second on your intranet. But right from the very start, it must be inviting, easy to use, and a solid fit with your learning culture.

Last but not least, your dashboard must tell you the most valuable information *right now*, not what you needed to know last week, last month, or last year.

And that's going to require some innovation.

But once you've finished with this book, you'll be armed with the necessary framework to design, build, and implement your marketing dashboard — resulting in more insight, foresight, and accountability for *and* from your marketing investments.

The most common question we get about the marketing dashboard is, "What do we measure?"

Read on. We're going to help you figure that out.

PART I

Planning the Marketing Dashboard: Setting Up for Success

CHAPTER 1

What Is a Marketing Dashboard? The New Way to Capture, Shape, and Improve Marketing Effectiveness and Efficiency

The dashboard of a car, a plane, even a video game gives you a lot of crucial information. How fast are you going? How far have you traveled? How much fuel do you have left? How hot is the engine?

A marketing dashboard provides you with the same up-to-the-minute information necessary to run your operation — sales vs. forecast, distribution channel effectiveness, brand equity evolution, human capital development — whatever is relevant to the role of marketing in your organization. An effective dashboard might focus on only three critical metrics or show the top 20. It could appear in your inbox monthly in the form of a nice color printout or be beamed over the company intranet first thing each morning.

The most useful marketing dashboard allows you to measure and manage your marketing effectiveness in ways you probably haven't tried. It will verify all the things that are working well. It will also shine a bright light on systems, projects, staff, and processes with the opportunity to improve. It will change the way you gather information while helping you to simplify the complex world of moving measurement targets. Most of all, an effective dashboard will focus your thinking and significantly improve the way you communicate it to others.

And yes, it just might reveal for all to see where the marketing investments are paying off and where they aren't. That's the tough part.

From what we see in many organizations, marketing — unlike IT, sales, or manufacturing — isn't always given the same credit by top

management for having a direct impact on the organization's bottom line. Certainly, marketing creates ideas and initiatives that drive growth. Though most CEOs would agree that marketing plays a role in the company's success, they just don't know how to quantify that role. This is what makes it so difficult to get incremental funding for marketing programs or even to defend existing funding when dollars get tight.

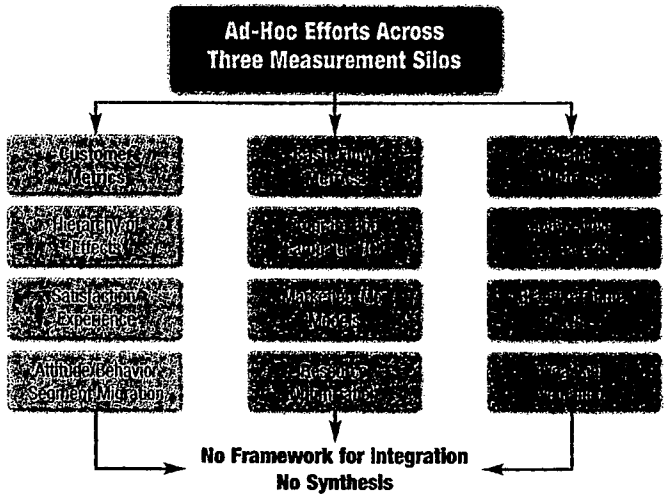
This is something a marketing dashboard can help change.

Many of today's marketing organizations have made significant strides in the development of sophisticated analytical approaches to improve marketing measurement. Ph.D. statisticians are now common in most large marketing departments, as are research departments, media-mix models, and models for assessing the return from a proposed initiative.

But what are they really measuring?

Figure 1.1 shows the three most common measurement "pathways" marketers are pursuing today.

FIGURE 1.1 — COMMON MEASUREMENT PATHWAYS



Source: Adapted from a model by Don E. Schultz, Ph.D. Reprinted with permission. Copyright © 2005 Agora, Inc.

The customer metrics pathway looks at how prospects become customers. From awareness to preference to trial to repeat purchase, many companies track progression through a "hierarchy of effects" model to track evolution of broad market potential to specific revenue opportunities. This customer pathway also tends to include robust attitudinal data on customer segments — why they want what they want or buy what they buy — which is often correlated with actual customer transactional data to create a robust segmentation model. The segments are then monitored for "mobility" — the directional progression of prospects/customers from one segment to a presumably more valuable one. In many B2B organizations, this customer pathway can go all the way to developing a customer-specific P&L.

The cash-flow metrics pathway focuses on efficiency of marketing expenditures in achieving short-term returns. Program and campaign ROI models measure the immediate impact or net present value of profits expected to be derived from a given investment initiative. Media-mix models use statistical regression techniques to identify which combinations of media placements, integrated media elements, and even copy executions generate the most profitable response from customers. And all of those inputs feed a focus on optimizing resource allocation in the context of generating near-term results.

The brand metrics pathway seeks to track the development of the longer-term impact of marketing through brand health. Survey-based tracking studies gauge customer and prospective customer perspectives on the brand — its functionality, personality, accessibility, and value propositions. Brand scorecards track the evolution of these perspectives over time within market segments and across multiple constituencies like employees, regulators, and community influencers. And many have taken the successful leap to develop financial models for estimating the financial value of the brand as a means of determining the aggregation of assets on the balance sheet as an outcome of marketing investments.

While most larger marketing departments have managed to build effective measurement systems within one or more of the three pathways, few have been able to synthesize across pathways in a manner that helps one pathway explain another or clarifies the predictive drivers of the business on a broader level.

For most companies, it's actually not possible to do this scientifically because it's not an econometric modeling problem solvable by equations and computers. Each pathway measures very different components of marketing effectiveness in very different ways. Some are shorter term and some longer term. Linking them algorithmically forces you to make some very large assumptions that may be unreliable in the face of actual marketplace dynamics. And even if you *can* solve it algorithmically, you will likely have to employ statistical techniques of such sophistication that no one in either marketing or finance will understand sufficiently to embrace and defend the method.

A marketing dashboard helps present the insights from all three of the pathways in a graphically related view that facilitates the human brain's incredible power to find subtle contextual links. This is the point where the "art" and "science" of marketing need to blend.

Most CMOs still struggle to close the gap and embrace the scientific measurement practices and the remaining "art" components that seemingly defy measurement in any reasonable fashion yet are highly correlated with success. As with most other aspects of business, the science enables greatness, but the application of imagination and innovation is what delivers it.

It is this very "art" component of marketing that requires the CMO to have the full confidence and trust of his or her CEO and the executive committee. To win this credibility, today's CMO needs to find ways of measuring risk that are transparent and understandable to all. If you want top management to accept the art you bring to the process, you have to do a better job of quantifying the chances for success. Only in the rarest organizations will marketing chiefs get by with the words "trust me." These days, leaps of faith come with pretty heavy price tags.

But credibility is a hard-won attribute that comes at the end of a long history of earned respect. As shown in figure 1.2, credibility:

- starts with demonstrated alignment with the rest of the organization on goals and objectives;
- builds with the implementation of an overall measurement framework based on as much scientific rigor as appropriate;

- expands through demonstrated objectivity and transparency of reporting results; and
- cements itself in a high degree of personal accountability.

FIGURE 1.2 — THE PATH TO CREDIBILITY

A marketing dashboard is an easy-to-understand way to illustrate to the rest of the organization your alignment, measurement orientation, objectivity, transparency, and ultimate accountability. In short, it puts credibility into a tangible, visible form.

How "Marketing" Has Outgrown the Marketing Department

> *A marketing plan is a clever device intended to arrest the intelligence of the chief financial officer just long enough to get the budget approved.*
>
> — Tim Ambler misquoting humorist Stephen Leacock[1]

In early 2004, the Association of National Advertisers (ANA) and consulting firm Booz Allen Hamilton undertook a study to examine the relevance of marketing, marketing departments, and CMOs (whether they operate under that title or another) in today's business climate.[2] Among the findings:

- More than 75% of marketers and non-marketers said that marketing has become more important to their companies during the past five years. But at more than half of all companies, marketing and the CEO agenda were reported to be misaligned.
- Higher expectations for marketing have driven nearly 70% of all companies to reorganize their marketing departments during the 12 months prior to the survey. Yet a major component of many

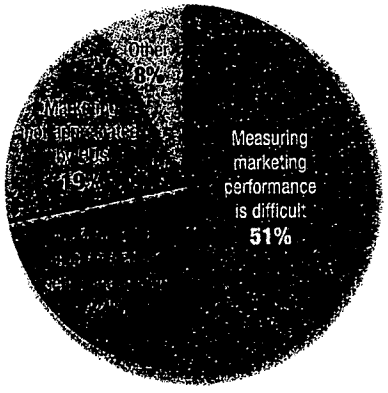
such reorganizations — the position of chief marketing officer — remains ill-defined.

- Measurable outcomes are now expected for marketing programs — 66% of executives say true ROI analytics are marketing's greatest need. But most companies are still using "intermediary" metrics — such as awareness — instead of working toward strong links to financial value.

The pressure on companies to find new sources of topline growth has placed a renewed emphasis on "marketing." Such traditional marketing-centric activities as creating new products or services, finding new markets, and maintaining and growing existing customer relationships are increasingly being shared across the organization in customer service, operations, manufacturing, and elsewhere. It's arguable that the company's marketing needs have outgrown the marketing department.

At the same time, the general business climate is demanding robust measurement and financial controls in all areas of the organization. In most organizations, this has shifted considerable decision-influencing power to finance. For marketing executives, this has been quite a wake-up call.

FIGURE 1.3 — REASONS FOR PRESSURE ON MARKETING



Source: ANA & Booz Allen Hamilton Study of Marketing Organizations 2004, ANA/Booz Allen Analysis. Reprinted with permission.

The problem is compounded by the fact that freshly trained marketing recruits from business schools get little if any preparation for the challenges they're most likely to face today.

> *One of the biggest problems with marketing today is found in the business schools, where finance majors spend the vast majority of their time in courses dealing primarily with manufacturing organizations — i.e., management of tangible assets. Few get exposed to the intangible value created in services or B2B, which is where you see the greatest need for alignment between marketing and finance today. Thus, MBAs can manage a factory but not a group of customers or a set of intellectual properties. And, they have no clue about how to deal with critical issues where finance and marketing come face to face.*
>
> — Don E. Schultz, founder of the Integrated Marketing Communications graduate program at Northwestern University and author of *IMC: The Next Generation*[3]

As competing divisions within the firm get more proficient in measuring their own initiatives and performance, they're seeking greater accountability and support from marketing. In many cases, division heads think, perhaps rightly, that they know the marketing function better than the marketers do.

That front-office conflict may be the smoldering fire sending you one or more of the following smoke signals:

- Nobody credits marketing with any specific impact on the bottom line.
- The budget cycle is a tension-filled fight to keep last year's spending levels intact and protect programs and headcount.
- Your CFO isn't buying your marketing-mix model or any efforts to link brand equities to profits.

Data-driven measurement of marketing is nothing new. Since the evolution of the marketing function in the 1940s and '50s, companies have always attempted to gauge the effectiveness of their marketing expenditures. In those days, the modest technology of the times

and the near absence of rapid media cost escalation or academic involvement led marketing executives to focus mostly on "intermediary" measures like awareness, preference, and other "researchable" variables.

Today, the Internet and the 24-hour information cycle have transformed the way buyers get information. Yet marketing measurement methods haven't adapted to accommodate these realities that have utterly changed the ways we do business.

Today, for better or worse, we face three driving forces:

- fast-changing technology that allows us to capture, warehouse, and analyze previously unimaginable amounts of data in near real time;
- rapid cost escalation in media and message distribution that requires us to re-educate ourselves and sharpen our expenditure patterns ruthlessly; and
- the broadening number of brilliant academics who are now focusing exclusively on the marketing discipline — even if they are driven by their own competitive need to get published, they are advancing mathematical science in marketing in some extremely innovative ways.

Do you feel you're in the loop with all of these developments? If not, you're not alone.

Marketing is dancing as fast as it can, but it's clearly not fast enough. Opportunities to gather data may be improving through technology and information-sharing, but the underlying skills and business processes of your people are probably not keeping pace.

How do you know if you're in trouble? Consider the following:

- Factions within your own marketing department are fighting for budget dollars and attention in a battle of politics and power. Note that these are people you *thought* should be working together.
- You have dozens or possibly hundreds of projects going, but no idea which ones are making the greatest financial contribution to your company's bottom line.

- No one can say for sure — least of all you — what the impact would be if certain key initiatives were dropped completely.

These are big challenges we're talking about. But by working to build alignment, instill measurement discipline, demonstrate objectivity and transparency, and promote accountability, the marketing dashboard might help you put these problems in turnaround. It is most certainly *not* a panacea to all (or even most) marketing ills. But in today's increasingly complex organizations, a return to focus, simple process discipline, and attention to only the most important goals should be paramount.

Today, we find ourselves at an inflection point in marketing measurement. For the first time, we really are in a position to measure what we should, not just what we can. That leaves us with a lot of choices. To make the right ones, marketers need a structure that allows them to learn and evolve quickly and efficiently.

What a Marketing Dashboard Does

There are five key benefits to employing a marketing dashboard:

1. A marketing dashboard aligns marketing objectives to the company's financial objectives and corporate strategy through the selection of critical metrics and sharing of results.
2. The marketing dashboard not only creates organizational alignment *within* marketing by linking all expenditures back to a smaller set of focused objectives, it clarifies the relationships *between* marketing and other corporate functional areas. It crystallizes roles and responsibilities to ensure everyone understands the interdependencies between departments or functions. The result of all this alignment makes it easy to see, if not directly measure, greater job satisfaction in a culture of performance and success.
3. The marketing dashboard establishes direct links between spending and profits. It uses graphical representations of crucial metrics in ways that begin to show, often for the first time, the causal relationships between marketing initiatives and financial results. It portrays historical data in a fashion that makes it easier for any corporate brain to grasp and understand the implications. The result? A better ability to make smart resource

allocations and increase both the efficiency and effectiveness of marketing spending.

4. It creates a learning organization that makes decisions on hard facts supplemented with experiential intuition, rather than battles of intuition punctuated by a few dangerous facts. The real benefit of this evolution is a dramatic reduction in time spent in highly politicized arguments. That speeds decision making.
5. It creates transparency in marketing's goals, operations, and performance, creating stronger alliances outside the department. This elevates marketing's perceived accountability to earn the trust and confidence of the CEO, the CFO, the board, and other key decision makers throughout the company.

Regardless of how sophisticated you are at measuring your current marketing efforts, the dashboard can make you better. It's a very accommodating tool. It benefits from, but does not require, a high degree of sophistication of analytics. It doesn't require that there be a robust IT infrastructure. It doesn't require any special skill set at all — other than the ability to determine what's important to measure.

The Basic Construction

Like all things worthwhile, creating a marketing dashboard is a fairly detailed undertaking with the potential for lots of moving parts. It will take three to six months to define the dashboard, identify its stages of evolution, map and secure the necessary data flows, test its design on the user community for feedback, and instill a sense of ownership.

Of course, you can always implement something fast and cheap quite quickly, but the purpose of the dashboard is to inform the key decision makers on the current and potential state of the business and help them make better choices. So as the old IT saying goes, "Garbage in, garbage out."

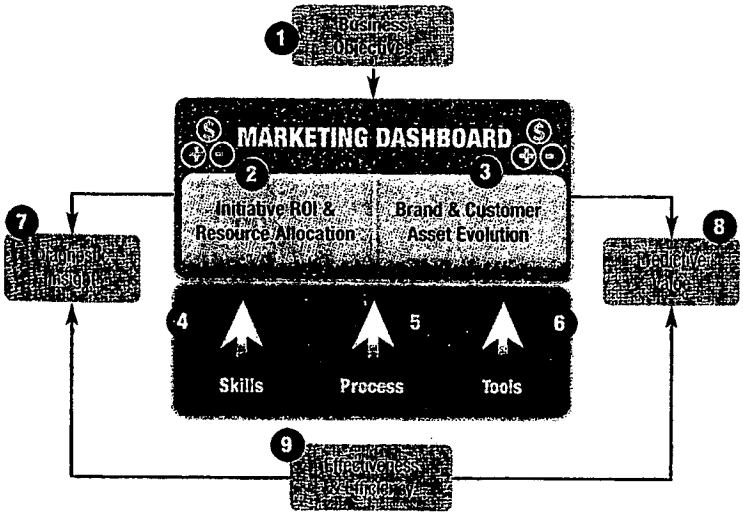
Every dashboard should be as unique as the organization it serves. Whatever physical form it takes, the dashboard's objective is to report succinctly and clearly on the progress marketing is making toward its defined business objectives. For a retailing chain, for instance, a dashboard might track how marketing is helping an

aggressive store expansion plan meet the company's profitability target while monitoring how well brand and reputation assets are laying the groundwork for new private label products. For a chemical manufacturer, the dashboard might focus on customer profitability segments and the velocity of movement through the sales funnel.

An effective dashboard is alive. It adapts and changes with the organization as objectives are clarified and redefined, as causal relationships are established between metrics, and as confidence in predictive measures grows. In short, about the only thing you know for certain about your first version of a marketing dashboard is that it will likely look very different a year or two down the road. And that is as it should be.

There are two primary goals of any dashboard: diagnostic insight and predictive foresight — with a special emphasis on the latter. Some dashboard metrics are diagnostic, looking at what has happened and trying to discern why. The most important ones you'll come to rely on are predictive, using the diagnostic experience to forecast future results under various assumptions of circumstances and resource allocations.

FIGURE 1.4 — THE MARKETING DASHBOARD



The marketing dashboard — in virtually any form — builds a way for you and all the people above and below you on the organizational chart to see what's working, as quickly as possible, forming a solid foundation for learning. Figure 1.4 shows the path to developing the dashboard.

A marketing dashboard is made up of the following parts:

1. **Business objectives:** Your starting point. These are the goals of the company, translated into a set of marketing objectives. All ideas and initiatives should be filtered through this prism.
2. **Initiative ROI and resource allocation:** An important part of the dashboard is measuring the incremental cash flows generated by marketing programs and initiatives in the near term. In addition, the dashboard is an excellent tool to measure the efficiency of resource allocation in dollars, headcount, or both.
3. **Brand and customer asset evolution:** At least equal in importance to the short-term results is the longer-term evolution of the corporate assets entrusted to marketing — most often including the brand and the customer perceptions/relationships. The dashboard can provide a read of how the assets have been growing and how they are likely to progress.
4. **Skills:** A well-rounded dashboard tracks the skills and competencies of the marketing team against a clear set of proficiency goals.
5. **Process:** The dashboard also provides insight into the execution of critical business processes required to deliver on the desired customer value propositions.
6. **Tools:** Less a metric than an enabler, successful dashboarding employs and continuously refines tools to increase insight and reduce effort in both producing and distributing it.
7. **Diagnostic insight:** The dashboard must push beyond portrayal of *what* is happening to *why* it is happening, providing insight into where prior expectations were inaccurate to help hone the process of setting expectations and forecasts for the future.
8. **Predictive value:** The difference between a helpful dashboard and a truly effective one is the degree to which it uses the diagnostic insight and predicts what is *likely* to happen on critical performance dimensions absent intervention.
9. **Effectiveness and efficiency:** The end goal — enhancing both the efficiency and the effectiveness of marketing investments,

thereby improving the ROI and the NPV (net present value) for the firm.

A Few Important Considerations

One of the key traps for dashboard builders is a tendency to overlook the dynamic nature of their macro environment and focus too much on the "within the walls" corporate issues. That's like building a measuring device for what you already know. Dashboards that reflect the "outside-in" perspective are much more likely to be insightful than those limited to the "inside-out" perspective. Identifying and closely monitoring external factors likely to cause significant changes to the business is what makes a dashboard dynamic. Building an addiction to this type of information in your organization is critical.

Another trap is the tendency to fill the dashboard with too many "intermediary metrics" — those that tell marketers something about program effectiveness, but stop short of linking that effect to financial or strategic results. The easy choices often involve brand awareness, trial, and customer or prospect preferences and intentions. Absent some mechanism to translate these intermediaries into financial or strategic value, they are best left to the drill-down pages of the dashboard, which we'll discuss in greater detail later. If you lead with what you can most easily measure, you're just going to reinforce for top management that your nifty little device is nothing more than a more graphical way of "spinning" the same old marketing mumbo jumbo.

Finally, dashboard effectiveness should be defined in terms of the degree to which it is embraced throughout the organization and adopted into the decision making of the key influencers of company strategy and resource allocation. In other words, you want the percentage of senior executives who both believe and understand what the dashboard is presenting to be very, very high.

While you can be successful with a dashboard solely targeted to the marketing staff, its real value lies in your ability to share it with all the marketing stakeholders that exist outside your department. You definitely want to sell it to your CEO and CFO, but there are probably other executives in the company who may think they know your job better than you. Include them in the mix and impress them with your ability to lead the discussion.

CMO View: Starting the Process

Rebecca Saeger
Executive Vice President, Chief Marketing Officer
The Charles Schwab Corporation

I've been here through a period of great change. We've changed CEOs — Charles Schwab has come back to run our company — and we've all gone through a real cost-leadership exercise. So, the microscope has definitely been on marketing.

I do think that there has been a strong belief here that marketing, particularly direct marketing, drives the business. But at the same time I found that we have more data than we could possibly use. So, if someone were to ask a question like, "How is such-and-such working?" five people would come out of the woodwork, each with a different answer from a different perspective.

We had programs that were measured based on response rates based on advertising. We had programs that would be measured based on a predetermined ROI goal. We had programs that weren't being measured at all. It was really kind of all over the place. I think that part of it is that we are in an industry that's been evolving at the speed of light over the last few years. My focus has been on trying to get some sense of alignment from business objectives down through marketing execution, really getting people to understand the thread that ties those things together.

And we have developed some tools — not a dashboard per se, but a marketing planning tool that accounts for every marketing program we have. We plug in objectives, costs, NPV projections and what spits out the back end is how we are doing based on where we are in the life of that project. This way, we can say what worked, what didn't, what paid out, and what is on schedule to pay out. Our system is evolving, but it's grounded in analysis of where we will make the most money. If the profitability proposition isn't there, it doesn't get marketing dollars. We have a corporate target for marketing spend and juggle it through the planning process to see who gets what based on corporate objectives. It's portfolio management, really.

We are in the process of developing a dashboard right now, with an emphasis on using it as a management tool and not just an ad hoc reporting structure. Our first objective is to make it a diagnostic tool

that gets everyone looking at the same numbers at the same time. We're not going to build some multimillion-dollar online dashboard; we're just trying to wrestle the data into manageable sets of metrics.

Part of our process is involving our business-leader partners in helping identify the right things to measure. We have a retail marketing and sales council that meets biweekly. It consists of the executive who runs the retail business, the one who runs the sales channel, the one who runs the customer segment business units, myself, and our CEO. We are in the process of developing the dashboards that we need to look at every couple of weeks so we can tell if we really got our money's worth on what we spent on marketing.

To a large degree, it's a question of accountability and trust building, not just at the CEO level, but with my peers across the organization. Once you have established that accountability where people know that you're clearly focused on the same things as they are and you're making every effort to measure the effectiveness of your allocation of the resources, they're a lot more open to how you can contribute to help their part of the business.

I've known several senior marketers who were not as willing to be open with the rest of the business and not very trusting people. But when I look around the table with the management team, nobody there wants to see anyone fail because we are all in this together. Once they trust that you are listening to them and aligned with what they're trying to do, they are more open to hearing your point of view about your own area of responsibility. So, when I say to them, "Guys, this is what we need to do with the advertising" or "This is what we need to do with this customer segment," they are more likely to take our recommendation. That's not to say that I can just walk in and ask for $20 million because I want it. But if I have a good case, it gets consideration at a level where they're not doubting that the $20 million would do what I say that it would, but only deciding whether that's the place where the company really needs to spend $20 million right now.

Where will we be in a year? I think we are going to have a really aligned management team within the firm and within our marketing organization too. Top management will be consistently looking at the same metrics around the business and I am excited because I think we are going to be looking at the brand as a business tool much more aggressively.[4]

Conclusion

Creating a marketing dashboard is neither fast nor easy. It requires taking a hard look at your organization, your processes, and the often-harsh perceptions others in your organization have of what you're doing. The payoff comes when you create a predictive system of measurement that's easy to understand, revolutionizes your operation, and creates credibility with senior staff.

The marketing dashboard is also a way to refresh or blow up the measurement systems you've been using for years. The drive to create a simple, at-a-glance picture of how your marketing initiatives are creating value for your organization will shine a light on all your processes and results. It's a risky move, but one worth taking.

Sources

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CHAPTER 2

See the Road Ahead ... Where Are You on the Ladder of Insight?

One of the best things about a marketing dashboard is that the very process of building one can help establish greater financial and measurement discipline in your organization. It can give a marketing department with little or no infrastructure a way to start and a moderately sophisticated one a path to evolve with a way to pinpoint problems and hidden successes as never before.

Think of it this way: In training to become a pilot, you first learn to fly a single-engine propeller plane in clear skies so you can see everything around you. Eventually, you graduate to multiple engines and flying "by instrument," which allows you to fly at night and in low visibility.

The instruments are intended to keep you oriented and level when your instincts might otherwise mislead. Any pilot will tell you that learning to trust the instruments is a difficult thing to do at first, but once you do, you find yourself free to enjoy the flexibility and feedback they offer. You stay on course more often and get where you're going faster and more efficiently.

Running a marketing department these days is increasingly like learning to fly on instruments. There are so many data points to consider, so many potential obstacles, so many other marketing messages crowding the airwaves and mailboxes, and, of course, so many "false horizons." By necessity, most marketing professionals have had to evolve toward the use of carefully designed instruments to keep on course when the sheer speed of business begins to outpace their instincts.

So what are these instruments and just how are marketers using them to their advantage? The answer depends on the nature of your industry, your company goals, and the level of sophistication you're starting from. While a single book isn't a great place to dive deep into specifics relative to any single industry or company culture, it can be helpful in describing the spectrum of sophistication that exists across companies.

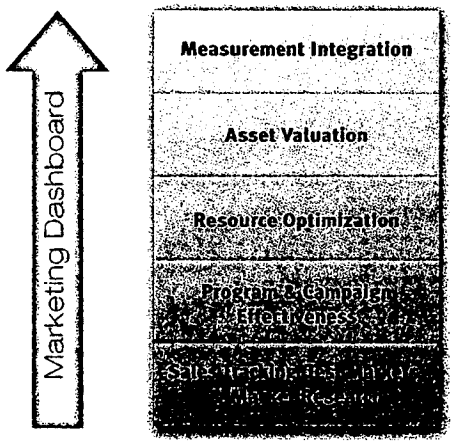
In this chapter, we're going to examine the evolutionary process of marketing departments in their quest for knowledge about the return on every marketing dollar spent. To do so, we use a framework called the "Ladder of Insight," sort of a Darwinian evolutionary chart of where marketing organizations often find themselves on the road to better measurement. Understanding where your company is on the ladder helps you see the starting point for your dashboard, as well as the road ahead. In other words, it gives you a clearer context for the direction you want your dashboard to take you in.

Climbing the Ladder of Insight

We use a ladder as a metaphor to suggest that as you climb higher, you get better visibility and perspective. It also seems appropriate to think that people in the organization will increasingly look up to you and welcome your leadership as you climb higher.

There are five distinct levels on this ladder:

FIGURE 2.1 — THE LADDER OF INSIGHT



Level 1 — Sales Tracking, Test Markets, and Market Research

This is the baseline level. Marketing results are tabulated by product/market/region/channel and reported at least monthly.[1] More often, they might be reported weekly or daily and occasionally in real time. The only correlations between marketing activities and business results are measured by the incremental reported sales in selected test markets vs. matched control markets. In fact, many are still not using matched control markets, but relying on the dangerous practice of looking at pre-/post-measures in the same geography, which are risky due to the inability to accurately read the effect of the marketing stimulus from the rest of the potential variables.

At this first level, market research is used to regularly measure customer and prospect awareness, brand perceptions, purchase intentions, and maybe even share of market.

Level 2 — Program and Campaign Effectiveness

At this level, the CMO requires that select new programs and initiatives are presented with an expected return based upon their anticipated incremental profit contribution (after accounting for fully loaded costs).

This forecast return is compared to alternative opportunities the company has at the time, and the decision to commit or abandon is made based upon allocating budget dollars to achieve the best outcome. While in progress, these initiatives are regularly reassessed at each point that another round of discretionary expenditures are required. When they have run their course, the programs are subjected to a final measurement and studied post-mortem for learnings and insights into future opportunities for improvement. Note that at this level and the next, programs and initiatives intended solely to enhance the customer and prospect perception of the company or brand (e.g., brand advertising, sponsorships, community relations) are often excluded from the analysis. Why? Because their impact is difficult to quantify in terms of dollars, and their contributions generally accrue over an extended period of time.

GOING FROM LEVEL 1 TO LEVEL 2

If you got these basics down, you can reach further by taking the following steps:

- Begin to assemble sales and margin data in an accessible format with frequent refreshment. You might want to ask IT to help assemble a "data mart" that you can access directly and use to export data into desktop applications like Excel.
- Set up job-cost accounting so expenditures can be tracked back to specific initiatives.
- Work with finance to adopt a flexible modeling approach to measure the effectiveness and efficiency of campaigns and initiatives built on agreed definitions of gross margin, contribution margin, pre-tax profit, and net income. Also agree on rates for cost of capital and target ROI hurdles. Secure their help in developing these analyses — finance should see these metrics and agree on the methodology long before it's time to pass judgment on them.
- Begin requiring that all new programs, campaigns, or initiatives with expected completion timeframes of six months or less submit an ROI analysis to get funding approvals. Then match each initiative's forecast with a post-analysis reflecting actual results. Use gaps and differentials as the basis for model refinement and calibration, and continue training of individuals and the team as a whole.
- After the first six-month cycle, institute quarterly assessments of projects midstream and introduce interim assessment methods to re-examine the project commitment against possible changes in the investment opportunity horizon.
- Resist the temptation to reward highest ROI initiatives in favor of rewarding managers visibly for support of and adherence to the forecasting system. That way you keep the emphasis on applying the process correctly, not just on getting the highest ROI score — a pursuit that could encourage managers to win by not spending as opposed to spending wisely.
- You might consider installing campaign management software to help standardize tracking and reporting. This is

particularly helpful if you are running dozens of concurrent marketing campaign initiatives or customer promotions.

- Begin correlating market research data on awareness, brand equities, purchase intentions, etc., to financial results like sales and gross margins. Chart the factors together on the same graph and look for patterns over a period of time. Manually overlay significant events you're aware of, such as competitive activity, regulatory activity, macroeconomic and geopolitical events, etc., on the same chart to help discover any possible relationships between the events and the results.

Level 3 — Optimizing Resource Allocation

Once the discipline of financial assessment is adopted across most individual marketing initiatives, the entire "portfolio" of possible initiatives competes for scarce budget dollars on the basis of forecast returns. This comparison may be performed monthly or quarterly to allow resources to be reallocated as market opportunities and threats change. Optimization techniques are used to solve for the highest possible return in terms of media mix, segment emphasis, and channel management.

At this level, highly evolved marketing leaders will take the additional step of requiring that all initiatives be presented with a risk-adjusted forecast so their true potential can be better assessed. Inflating or "padding" the expected risk-adjusted return of any given initiative becomes difficult, perhaps impossible, since flawed assumptions are likely to be uncovered in the very first progress review, if they aren't during the initial risk assessment.

GOING FROM LEVEL 2 TO LEVEL 3

If you're already confidently operating at Level 2, here are a few steps to help you progress further:

- Continue to invest in your data mart, making it more comprehensive and accessible. Consider adding an analytics package to help standardize access to data and ensure that comparisons between programs and initiatives are done on an apples-to-apples basis.
- As you increase the percentage of total marketing spending subject to the financial analysis process, work with accounting to devise a reasonable method of overhead allocation to each project or initiative. Involve team leaders in defining overhead and establish rules for which projects get an allocation and which don't.
- Introduce and train the team on the use of risk assessment tools to become part of each project-funding request. Require that all forecast returns be risk-adjusted and make larger projects subject to peer review to accelerate standardization of the risk assessment process.
- Apply optimization techniques to allocate limited funds between programs, customer segments, channels, acquisition vs. retention, media mix, or other areas where "necessities" or "opportunities" exceed available resources in the near term.
- Begin to measure and monitor correlations of interdependence between various marketing activities to ascertain which programs are complementary and which elements of multifaceted initiatives are most directly related to the results.
- Refine and test correlations among branding initiatives, strategic factors from earlier stages, and financial results to improve predictive/explanatory relationships.

Level 4 — Asset Valuation

At Level 4, the department is comfortable with its ability to measure short-term incremental cash flows generated by marketing initiatives. Now it turns its attention to the more challenging questions of measuring the financial return on expenditures principally designed to enhance brand assets (company/brand awareness, appeal, and

preference) or customer assets (customer value, customer lifetime value, or customer franchise value). This is where the relationship between CMOs and CEOs could get dicey.

The challenge here is that many such efforts in this category are only intended to increase the *likelihood* that a customer or prospect will purchase or repurchase from the company again, not to specifically "ask for an order." Also, most corporate or branding initiatives are part of integrated programs that stimulate particular purchase activity, so it's tough to come up with an overall success measurement for a branding program.

Marketers at Level 4 are making the effort to identify the measurable outcomes of such activities over time (i.e., awareness, brand preference, pricing power, etc.) and correlate those intermediary measures with expected financial benefits in both the near and long term. Most continuously track these key metrics and use statistical techniques to monitor their correlation with sales, gross margins, profits, and "goodwill" that contributes to the company's value as a whole.

It's important to recognize that companies operating at Level 4 didn't develop these skills overnight. They achieved this level of success through a consistent approach that led to reliable correlations between market metrics and financial value. Further, the exact formula used is less relevant than the fact that one was agreed to by marketing, the CEO, and the CFO, and that any evolution of it has been done with careful attention to maintaining historic reliability.

Key Questions That Inevitably Arise at Level 4

Q: What good is a consistent measurement methodology in an increasingly discontinuous world where competitors enter and exit the market freely, and technology reinvents communication and distribution channels annually?

A: The benefit is not so much the measurement algorithms themselves, but having a methodology to use as the basis for comparing and a process to guide the consideration of applying, adapting, or replacing it. This will minimize the risks of reacting on instinct to changes that might appear to be more or less threatening than they really are. A

dashboard serves much the same purpose, by encouraging the long view and putting specific market-altering events in context. It helps improve the quality of perspective when decisions need to be made.

Q: Is it fruitless to try to prove with financial analysis the benefit of long-term brand-building activities?
A. No, it's fruitless to resist. If you can't do it, the company will eventually bring in someone who can. Besides, the question is rarely a referendum on brand building. More often, it is raised in contemplation of cutting or increasing the budget for it. Without a sound measurement methodology to help forecast the implications of those scenarios, the answer will usually be to cut.

Q: Is the question of long-term brand-building effectiveness related to the quality of creative advertising?
A. Clearly. But how many times can we blame a lack of results on "bad creative" before we either admit that brand advertising has too high a risk factor or *change the way we go about developing advertising?*

GOING FROM LEVEL 3 TO LEVEL 4

Having laid the groundwork in Levels 1 through 3, correlations must be made at this point between pure branding or "corporate marketing" initiatives and financial results:

- Engage research, planning, and finance teams to work together to explore the correlations between branding expenditures to increases in profitability, even though they might be on a time-delayed basis.
- Charter — or shadow — the same teams to evaluate changes in the market value of the company relative to comparable benchmarks to see if there is a correlation to branding activities.
- Absent any clear determinations in either case above, your CMO, CEO, and CFO must discuss the strategic benefits of continuing branding or corporate activities and decide if they should be held to a stand-alone measurement standard, allocated against other marketing activities, or continued

for "qualitative" reasons. Regardless, the agreed methodology ultimately forms the basis for the brand scorecard section of your marketing dashboard (see Chapter 6).

But be forewarned. An agreement to a "qualitative" rationale for continued branding activities almost always leads to subsequent budget battles over intuition-driven assessments of ad copy. Informal agreements within the executive team can be quickly forgotten with the first market tightening or change at the executive level.

Level 5 — Measurement Integration

Here, at the top of the ladder, all marketing activities are planned and measured in an integrated framework that takes into account both short- and long-term return.

To accomplish this, companies take an approach that weighs financial efficiency and productivity measures like ROI and NPV against strategic effectiveness metrics like market share, customer retention, satisfaction, employee satisfaction, and others.

Others adopt a more financially driven model such as Economic Value Added (EVA®), in which the cumulative effect of marketing for the period in question is measured by determining after-tax incremental profits from marketing expenditures (aggregated from Level 2, 3, and 4 activities and modifying certain assumptions about expenses vs. depreciable assets). The result is then found by subtracting the benchmark rate of return on the capital deployed.

A few major multinationals like Diageo and Unilever have gone so far as to integrate their far-flung operations into a common measurement structure that allows corporate resource allocation not only by product category, but also by market.

Regardless of the differences in measurement methodologies, the common traits of companies who have reached this highest level include:

- goals and objectives are set (and periodically revisited) using very specific, quantifiable metrics;

- measurement has been integrated into the planning process upfront and is employed through each activity's lifecycle, not just at the end;
- all expenditures are evaluated in the context of maximizing the overall outcome since management compensation (at the VP level and above) is tied to delivery at or above goals;
- the measurement is done at all levels by all marketing managers and integrated into their daily responsibilities, not assigned to a dedicated analysis group of "measurement police"; and
- measurement is structured with the business focus to meet the needs of the CEO, the CFO, and possibly the entire executive committee.

GOING FROM LEVEL 4 TO LEVEL 5

The path beyond Level 4 is largely dependent upon the degree to which a company can confidently measure the benefit of its branding and corporate activities in financial terms. Companies that cannot make that link, yet choose to continue the branding, can consider more of a "balanced scorecard" approach to building a dashboard that integrates hard (e.g., financial) and soft (e.g., awareness and perceptual) measures. Other important considerations include:

- Focusing on just a few top-level objectives, making sure that all are quantified in terms of what is to be achieved, the magnitude of achievement desired, and deadlines (e.g., increase brand preference scores by 15% within 12 months).
- Align all marketing activities with one of these few scorecard elements so relationships can be clearly defined and measured.
- Design compensation and recognition programs for marketing team leaders to reinforce their relationships to specific scorecard elements and also the balance of team goals.

Companies that *can* quantify the financial benefit of branding or corporate marketing activities can apply the same assessment methodology or metric for all marketing expenditures:

- Translate the expected return from brand or corporate marketing initiatives into these common metrics.

- Allocate and reallocate resources regularly, optimizing the desired balance of short- and long-term results.
- Link management compensation directly to incremental improvements in the selected metric(s).
- Integrate marketing expenditure requests back into the corporate resource allocation process using the same metrics as IT, HR, or manufacturing.

Questions You Should Ask

So now that you have a sense of where your organization stands on the Ladder of Insight and how to climb higher, ask yourself a few final questions to guide the ascent.

1. **What are your true objectives?** How will the marketing department and the company as a whole benefit from this evolution? Can you quantify this benefit to help gauge the potential return on the investment you will make in achieving it? If even a broad-based cost/return effort evades you, you might need some outside help to avoid false steps that have big costs in terms of credibility.
2. **How broad is the commitment to improvement?** Is this an effort championed by marketing with active support of its CEO and CFO? Or is it another challenge thrust upon you by top management that you'll try to respond to so you can get back to your real work? Unless the CMO, CFO, and CEO are enthusiastically supportive of an agreed set of objectives along with a process and timeline, there will be disputes over methodology, parochial resource defense, and mixed messages sent to the troops. And the troops have to do the heavy lifting.
3. **Speaking of the troops ... how are their skills?** Do you have the change-leaders within your current marketing organization to help you succeed? Can they drive toward higher levels of achievement?

The answers will help you frame a more realistic plan for improvement and set clearer expectations both within and beyond the marketing department.

CASE STUDY

HILTON HOTELS — USING THE BALANCED SCORECARD AS A FOUNDATION FOR THE MARKETING DASHBOARD

Hilton Hotels Corp. adopted the balanced scorecard in 1997 and made it the foundation for translating its corporate strategic vision to marketing, brand management, and operations. That framework has allowed the hotelier to reach out to its hotel guests, company shareholders, and employees as never before.

It has also served as the starting point for a simple yet effective scorecard that tracks both hard and soft metrics to provide as complete a picture as possible.

Hilton has an annual business-planning process that links its business strategy with critical tactical actions. Each key performance indicator (KPI) on the scorecard is derived from and aligns with one of four value drivers. There are eight KPIs. Some are diagnostic lagging indicators that show the outcomes of a strategy employed. Others are more predictive lead indicators that help modify marketing execution to take advantage of future opportunities.

Each of the KPIs is reported as a numerical score, which is why this is more of a scorecard than a dashboard. However, the use of three color zones — green (shown in figure 2.2 in light blue) indicating performance at or beyond the goal, yellow (shown in gray) signaling results slightly below the goal, and red (shown in dark blue) flagging performance well below the goal — increase the graphic absorption potential, making it a much more effective structure overall.

By communicating results visually to show strengths and weaknesses, marketing can clearly see how it is performing on its objectives and where to focus its efforts, not to mention its resources. In this case, it is clear that Hilton needs to address both the widespread problems at Hotel E, as well as the overall poor scores on the mystery shopper program.

To assist in identifying areas of potential value growth, customized priority reports identify the key drivers of customer satisfaction upon which marketing and its colleagues in other departments should focus. This helps the organization concentrate its efforts on the elements of a Hilton stay most important to guests.

Hilton puts a priority on improving its strategies, business processes, and balanced scorecard toward ensuring that its stated value drivers adequately describe how the company can best meet its corporate goals. Continuous improvement of the Hilton balanced scorecard, nicknamed STP for Situation-Target-Proposal, is a multiphase process for determining a course of action.

FIGURE 2.2 — HILTON PERFORMANCE DASHBOARD

					Revenue maximization		Value proposition			
Rank	Rating	Property	Brand standards compliance	Operational effectiveness (EBITDA)	Room RevPAR*	RevPAR* index	Guest comment cards	Customer-satisfaction tracking study	Team-member survey	Mystery shopper
1	6	Hotel A	100%	$2,901,107	$128.77	123	6.36	6.20	80%	92.9%
2	6	Hotel B	100%	3,065	$73.15	106.7	6.35	6.09	75%	91.32%
3	5	Hotel C	100%	2,584	$101.12	103.0	6.39	6.04	81%	89.84%
37	3	Hotel D	95%	1,252	$73.59	99.0	5.73	5.10	69%	85.31%
51	0	Hotel E	85%	3,055	$88.17	94.0	6.08	5.68	67%	88.67%

Significantly short of goal (red zone) | Less than goal (yellow zone) | Meets or exceeds goal (green zone)

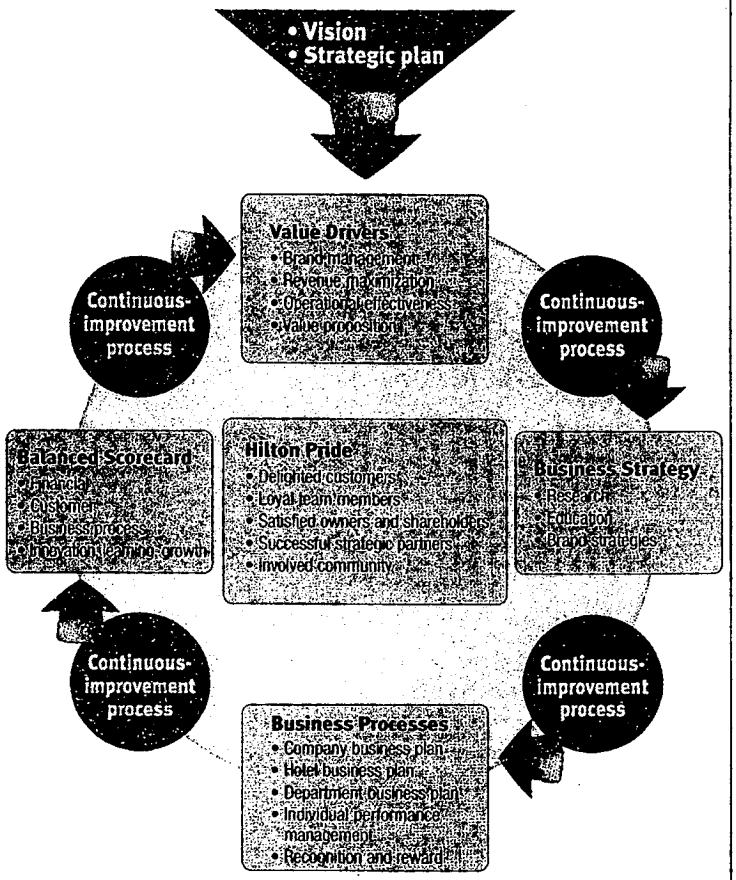
* Revenue Per Available Room

Although the power of the Hilton brand attracts guests to the properties for their first stays, sustainable, long-term profitability relies on customer loyalty. Using the balanced scorecard, Hilton was able to deliver a 3% higher profit margin than other full-service hotels. Between 2000 and 2002, this translated to a 100% increase in stock price.

Non-financial measures such as customer satisfaction, likelihood to recommend Hilton, and likelihood to return to Hilton have improved as well. Hilton has bettered the price-value relationship at its properties while raising its room rates, so guests have not fallen away from the brand despite increases to the cost of their stays.

At a strategic level, use of the balanced scorecard also has increased brand equity by reinforcing quality control of the Hilton experience. These diagnostic successes meant that Hilton Garden Inns, from launch, could command premium rates over competitors.[2]

FIGURE 2.3 — HILTON VALUE CHAIN



CONCLUSION

So, where are you on the Ladder of Insight? Using this framework, you can begin to look at the next steps up the levels of measurement proficiency so you can identify which stage your company is in and what the next steps up the Ladder of Insight might look like. That perspective will help you envision what you want your dashboard to do for you and allow you to map out the stages of progression you would like to see it go through over time.

Seeing the road ahead will help deliver a more practical dashboard that's equipped to take you where you want to go, not just show you where you are today.

Sources

1. *MarketingNPV Journal*, vol. 1, issue 2.

2. *MarketingNPV Journal*, vol. 1, issue 6.

CHAPTER 3

Align Your Dashboard Right from the Start

Most of us have a pretty keen ability to look backward and know where we've been. Many of us have even advanced that skill to be able to look around and know where we are at the moment. But knowing whether you're on track for where you expect to be six, 12, 18 months from now ... that's something only a very few managers have mastered.

Today, marketing reporting, and to some degree financial reporting, is primarily a function of gathering sales data at the end of a reporting period, massaging it into charts and graphs, and then circulating it for discussion or comment. And for most, even this is no small accomplishment.

This diagnostic approach is rooted in the instinctive human learning method of interpreting past experiences to frame future expectations. At best, that process is effective at helping the organization see where it's recently been. Only through very intuitive methods do companies attempt to project the trajectory of performance into the future so they can manage to the desired outcome. And only a very few managers possess the innate (or artistic) ability to properly view diagnostic information and project it with reasonable accuracy, overcoming their own perceptual filters and assimilating the collective wisdom of their entire team.

Add to that the marketer's DNA being built more historically on spending money than making money and you can understand why marketers have very well-developed rear-view skills.

This is the fundamental human frailty dashboards are designed to overcome.

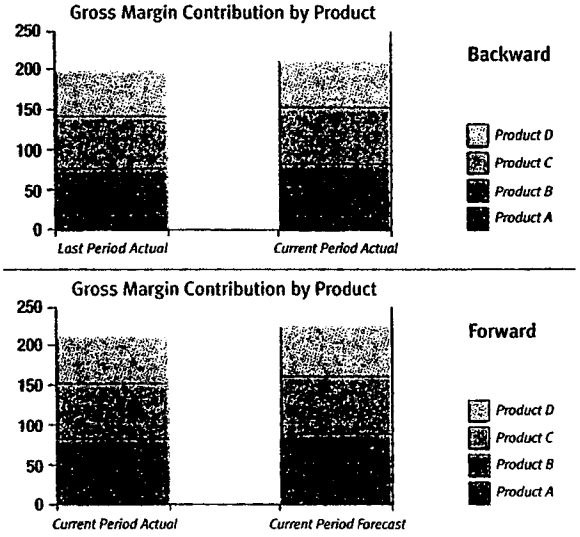
Without a doubt, there is benefit to having diagnostic measurements on your dashboard. But without components that help you predict the future, the dashboard is only expanding the limitations of memory, not improving decision making.

Think again about the dashboard on your car and how it works with your vision and stored experiences. You keep your eyes fixed on the road ahead with only quick glances at the dashboard to see how speed, fuel level, and engine stress will affect the desired outcome of arriving at your destination. Your brain makes millions of calculations per second to adjust the turn of the wheel, the pressure on the gas pedal, and the search for rest areas along the way. You might even have reviewed a map before starting out to form a mental picture in your mind of where you were going.

Today's vehicles are increasingly equipped with some "forward-looking" dashboard capabilities. Compasses are being replaced by GPS systems that provide real-time mapping to guide you to your destination, alerting you in advance to upcoming turns. Fuel gauges are evolving to become distance-to-empty meters that display not just the current level of the tank, but how far you can go before stopping based on average fuel economy. These advances make driving easier and more efficient. However, most marketing dashboard metrics are still being presented in the form of current vs. prior period. That's helpful in terms of seeing the trend to the current point in time. But, to use the vehicular metaphor, it would be like driving forward while looking in the rear-view mirror — more than a little dangerous.

Depicting historical trends has only one purpose — to improve the accuracy of predicting where you are likely to be in the future. Consequently, all of the metrics on a marketing dashboard should be compared to a *forecast* for where they're supposed to be at that point in time relative to the longer-term goals. That way, the dashboard answers the question, "Where is my projected outcome vs. my target outcome?"

FIGURE 3.1 — BACKWARD-LOOKING VS. FORWARD-LOOKING



Proper marketing dashboard readings give you an indication of whether you're on the right course, at the right speed, and have enough gas in your tank to get to your *desired* destination, not just any destination. If the dashboard says you're off course, you can look at past-performance data for diagnostic insights and ideas on how to course-correct, but no longer will looking back be your central focus. A well-designed dashboard will always be looking ahead.

But before your forward-looking dashboard can take shape, you need to be certain that your destination and your desired outcomes are calibrated with those of senior management and the company overall.

Identifying the Right Destinations

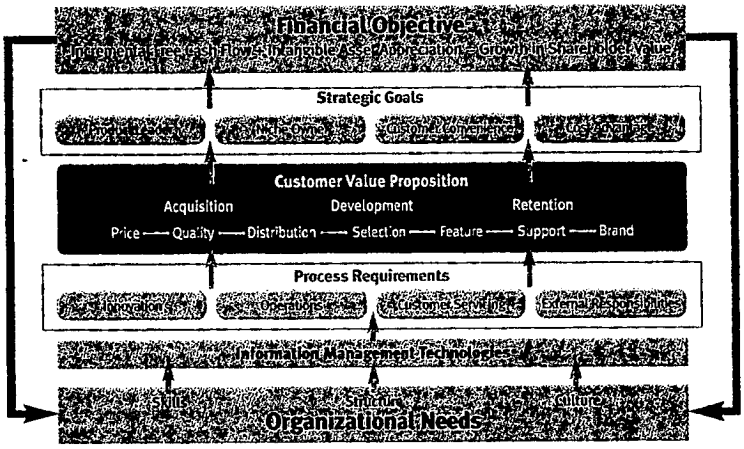
Step #1: Aligning Marketing Goals with the Organization

In Chapter 1, we talked about the path to credibility — alignment, measurement, objectivity, and accountability are the key steps toward credibility with senior management.

Strategy mapping, an approach developed by Robert S. Kaplan and David P. Norton[1] (inventors of the balanced scorecard) is one way to

kick off that process. You can use a strategy map to align marketing's goals with the rest of the organization and in the process define the role of marketing and the critical dimensions of creating the right customer value propositions. It's the first step toward selecting the right metrics for what will eventually become your marketing dashboard.

FIGURE 3.2 — SAMPLE STRATEGY MAP #1



Source: Adapted from Strategy Maps by Robert S. Kaplan and David P. Norton, Harvard Business School, 2004. Reprinted with permission.

Figure 3.2 shows the relationships among:

- the company's financial objectives;
- the strategies intended to achieve them;
- the customer value proposition(s) required to execute the strategies;
- the business processes required to deliver on the value proposition(s);
- the information management systems to support the business processes; and
- the organizational skills, structures, and culture necessary to pursue the objectives successfully.[2]

Financial objectives always boil down to growth in profits and appreciation of tangible and intangible assets — brands, customer relationships, distribution channels, etc. — which add up to overall shareholder value. While your specific metrics will vary, it's important to place highest-order financial goals at the top of the map.

The strategies intended to achieve these goals can be very customized and circumstantial, but they are normally some variation on the themes of:

- **Product/service leadership:** Being the best product or service in your field. Think Lexus, Armani, or Dell.
- **Niche domination:** When you're so close to the needs of a sub-segment of a market that you obtain competitive advantage in uniquely satisfying it. Gymboree Play & Music won over the high-end preschooler moms interested in an indoor experience for kids with more personal attention and nicer facilities than the local YMCA.
- **Customer convenience:** The ability to leverage customer relationships to cross-sell deeply. Verizon, for example, bundles local, long-distance, and wireless phone service with Internet service in a single bill to create a barrier to exit.
- **Low-cost position:** Engineer cost reduction so far below competitors that price becomes the defensible differentiator. Wal-Mart has this strategy perfected.

The customer value proposition is really the core of the strategy map. Its purpose is to move customers to behave as you would like them to — trying your product or service, extending their relationships with you, or remaining loyal to you in the face of competitors. The customer value proposition often mixes elements of pricing, quality, brand image, distribution, feature, and function to successfully leverage the company's strengths or exploit competitive weaknesses.

Achieving the desired customer value proposition often depends upon strong business processes in several supporting areas of operations, including product development, customer service, and regulatory or social issues management. These processes guide the organization to focus and execute on the things most directly required for success.

Undoubtedly, most of these critical processes will have as baseline needs some form of information management platform — not just the technical pieces of computers and data networks, but the way information is shared and used around the company. Most often, these platforms go beyond internal process facilitation, reaching outside of the company to suppliers, distributors, and, in some cases, customers.

The organizational elements of the *right* skills, structure, and cultural characteristics set the foundation for the successful delivery of information management, process, customer value proposition, strategy, and financial objectives. Without these well-developed organizational basics, no amount of gymnastics at higher levels will deliver consistently on the company strategy.

The strategy map helps to clarify marketing objectives and priorities. It also helps to identify the relationships between traditional marketing intermediary measures (brand awareness and equities, product trial, customer retention and satisfaction, distribution, etc.) and the ultimate business results of revenues, profits, and shareholder value.

FIGURE 3.3 — SAMPLE STRATEGY MAP #2

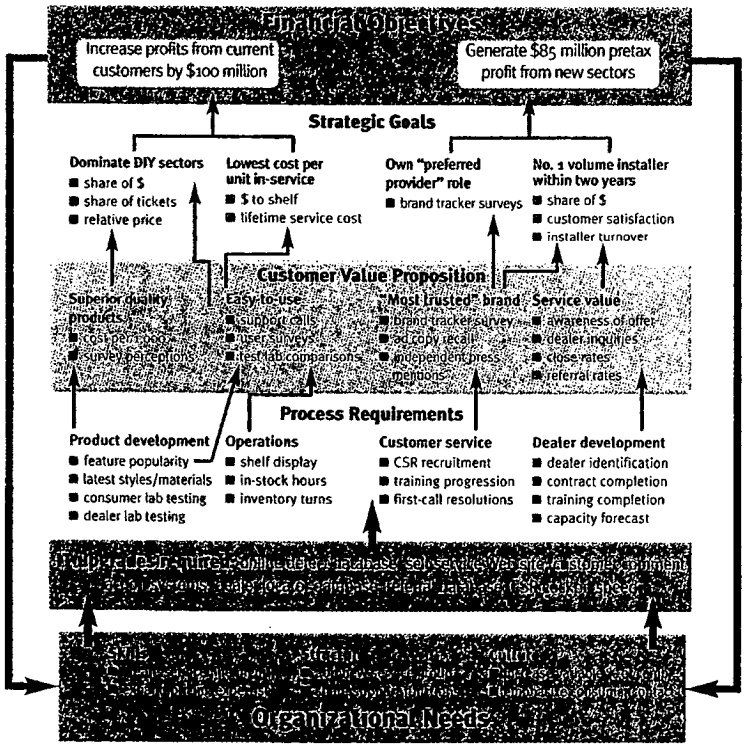


Figure 3.3 might represent a company that manufactures products purchased directly and installed or assembled by end users. The blue bullet points under each of the process, value proposition, and strategy components are possible metrics that could give shape to a marketing dashboard. It may also help clarify the role of marketing within the organization, which is important in developing a truly effective dashboard.

Step #2: Identifying Critical Performance Metrics Based on the Role of Marketing in Your Company

By now we've all heard about the Spencer Stuart survey that found that the average CMO's tenure is about 22 months — hardly long enough to see any major initiative through.[3] The key toward longevity, however, may be setting a role for the marketing department that fits the goals of the CEO.

A 2004 study by the Association of National Advertisers and Booz Allen Hamilton suggests that CMO success is first and foremost a function of knowing what role you're signing up for.[4] They suggested that there are three different roles of marketing organizations within companies.

Role #1: A Marketing Services Organization

The marketing department is a service provider to the rest of the organization. It provides the benefits of centralization in:

- media buying;
- advertising and marcomm materials development and production; and
- coordination of vendors and agencies.

Role #2: The Marketing Department as Advisor

As a corporate marketing function, the marketing department helps align marketing plans of multiple business units with overall corporate strategies in terms of:

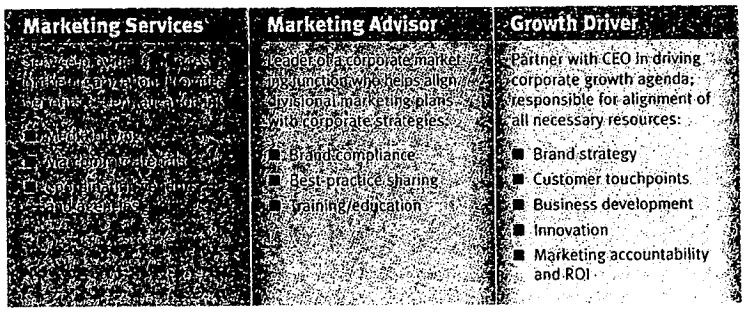
- brand development, uniformity, and compliance;
- best-practice sharing across business units; and
- training/education to improve the breadth and depth of marketing skills throughout the company.

Role #3: Marketing as Growth Driver

The marketing department is the engine of growth for the CEO in driving the corporate agenda; it is responsible for alignment of all necessary resources including:

- brand strategy and execution;
- customer touchpoint and customer experience management;
- product development and innovation;
- customer value development; and
- marketing accountability and ROI.

FIGURE 3.4 — THREE BASIC ROLES FOR MARKETING[5]



There may be other models or hybrids of the ones above. Regardless, knowing what role marketing is playing in pursuit of the company objectives and confirming it with the CEO and the rest of the executive committee sets the boundaries of the playing field on which marketing is expected to perform. In the process, it suggests some clear opportunities for important dashboard metrics.

Once you have better clarity on how marketing fits into the company strategy map and once you've confirmed the role of marketing in the organization, you need to identify the critical performance objectives for the marketing organization. It's impossible to build a relevant dashboard without knowing what those objectives are.

A good performance objective has three components: direction, magnitude, and timeframe.

Here's an example: "I will achieve a 20% increase in market share in the next 12 months." Increasing market share is the direction.

Twenty percent is the magnitude. Twelve months is the timeframe. If you take any one of those three components away, you're left with an ineffective statement of objectives open to subjective interpretation. If you take away the magnitude and just say, "I'm going to increase market share," you have no way to judge how much money you should invest in trying to achieve your goal or how much risk (i.e., spending) you should undertake to do so. If you take away the timeframe and just say you're going to achieve a 20% market share increase, you might be thinking that five years is a reasonable timeframe, while the CEO is thinking one year.

The three parts of a critical performance objective force you to close all the doors of subjectivity. And much like building a dashboard on forecast vs. "rear window," the process forces you to really think about what exactly it is that you plan to accomplish and how well your strategies and tactics are aligned to do so.

It's also fairly apparent how the three specific dimensions of critical objectives establish some potentially important candidates for dashboard metrics.

The next step is to see how well the tactics, programs, and activities are aligned with the strategy map and critical objectives.

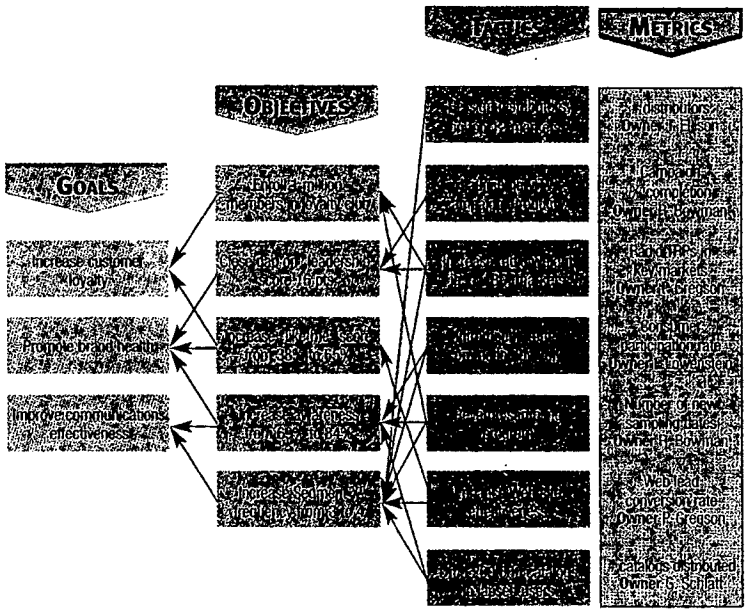
Step #3: Resource Mapping

Another effective way to begin identifying the right marketing dashboard metrics is to graphically map out the "many-to-many" relationships between marketing goals, objectives, and tactics/initiatives. The simple process of deciding what are goals vs. objectives vs. tactics brings all marketing department activity into focus, exposing gaps and redundancies for the benefit of resource reallocation and continuous improvement.

Each tactic, program, or initiative should have its own success metric for determining if the investment achieved the desired result. As drivers of successful outcomes, these success metrics then become predictive candidates for inclusion in the dashboard.

But what if you have too many? How can you determine which ones matter most? Obviously we don't want a dashboard with dozens or hundreds of metrics diluting focus from the most important ones.

FIGURE 3.5 — RELATIONSHIP MAP BETWEEN MARKETING GOALS, OBJECTIVES, AND TACTICS/INITIATIVES

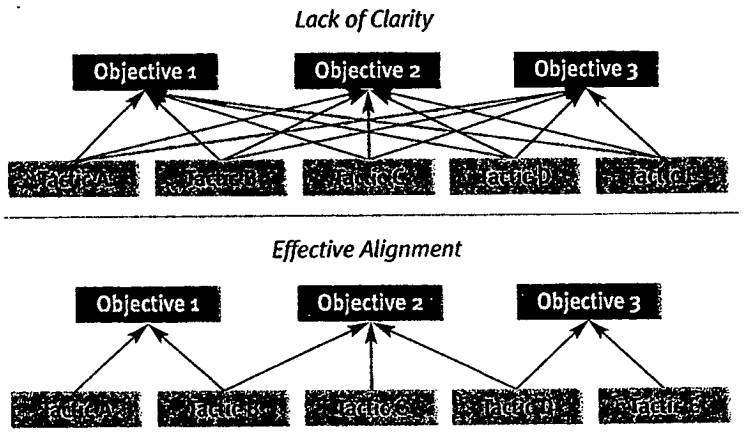


One way to filter many candidate metrics to fewer, more insightful selections is to weight the contribution of each tactic to the achievement of objectives and each objective to the attainment of goals. Analytical techniques can help establish these relative weightings if data is available. However, it's more likely that you'll need to discuss and debate the weightings as a group to build consensus on which elements of the map really drive results. The tactics with the greater weightings are the ones most likely to drive desired outcomes and thereby the best prospects for predictive dashboard metrics.

This approach often stimulates conflict among owners of competing initiatives, so you may want to undertake this with the help of some impartial facilitation. Eventually it will build extraordinary alignment on your marketing team — focusing your priorities in a way your department has never seen. And along the way, you might find that some of your tactics investments are "orphans" — they really don't line up well with any of the objectives you've set. That discovery is actually a great opportunity to reallocate money. Switch off those orphans and shift dollars to initiatives aligned with priority goals.

It is not uncommon to find that the first pass at the resource map shows that all the tactics are mapped back to all or most of the objectives, which suggests that either the purpose of each initiative is not very clearly defined, or that the relationships among goals, objectives, and tactics are not sufficiently distinct.

FIGURE 3.6 — COMPARING RESOURCE ALIGNMENT



Either way, these outcomes are signs that there is significant room for improvement in clarifying exactly what you are trying to accomplish and how you are pursuing it. All of which is important spadework before designing your marketing dashboard.

Step #4: Test Causal Relationships

Once you have clarity on the relationships among tactics, objectives, and goals, testing causal relationships can help identify the very best predictive metrics for your dashboard.

Of course, the only way to truly prove that a given marketing initiative drove profitable sales is to establish a pure test vs. control experimental design in which all other variables are accounted for, leaving only the marketing stimulus to explain the change in sales.

Unfortunately, this is most often an impractical way to measure large-scale marketing in a world in which network TV purchases are more efficient than spot buys, and environmental and competitive forces are impolitely adding variables faster than you can control

them. But there are ways to get some insight from which to draw conclusions.

Many large marketing organizations have already invested in sophisticated media- or marketing-mix models that use complex statistical regression techniques to isolate the contributory value of various marketing stimuli in achieving sales or profits. In effect, these models take into account the marketing activities by day or week and compare them to actual sales to find correlations between cause and effect. In some cases, these models are quite comprehensive, incorporating not only advertising by media, but direct marketing, channel initiatives, and all other tactical components of the marketing plan. In others, only the media elements (TV vs. print vs. radio vs. direct mail) are covered by the model, with many other tactics operating outside the spectrum of analysis.

Even with such a mix model, it is still quite difficult to prove pure correlation between marketing investment and sales. Often, the outputs from the models indicate that there are some clear relative winners between various marketing-mix elements — e.g., radio might prove much more correlated to sales results than outdoor advertising — leading you to fine tune your resource allocation by media. But you still don't really know just how much the overall advertising effort drove sales as distinct from the simultaneous influence of channel pricing, customer service experience, current events, or competitive promotions. Factor in the impact of creative effectiveness, weather patterns, or media stories, and you wind up with correlations that at best tend to be in the middle range of certainty, leaving open significant doors of doubt for finance to step through and reject your analysis. In fact, it's not uncommon for mix models to explain only 15% to 25% of the variance in sales or margin, leaving the balance to be considered as "base" sales — presumably those that would have occurred even without the marketing stimulus.

The point is, these models can be quite helpful in "answering" the question, "Is marketing generating incremental profit?" However, they're not particularly effective at answering the CEO's real question: "Should I spend half as much as I do today on marketing or twice as much?"

To get that answer, you need to employ a series of measurement processes to identify the real drivers of marketing effectiveness, including:

- panel studies of customers and prospects, recording their progression through the sales funnel over time in relationship to marketing activities;
- continual survey research among samples of the target audience to gauge the impact of marketing investments individually or collectively on the relative shifts in purchase consideration or behavior from one period to the next; and
- econometric models of customer behavior from transaction files to measure the changes in the collective value of the customer base in response to marketing activities.

While each of these methods can play a role in gathering insight about what works and what doesn't, there is no silver bullet. Sometimes, the best strategy is to gather the preponderance of evidence from multiple measurement approaches to identify the elements of the marketing plan that are *most likely* driving future financial outcomes, and then constantly test the insights gained to get more accurate at predicting the outcome of a change in an element of the marketing stimulus package.

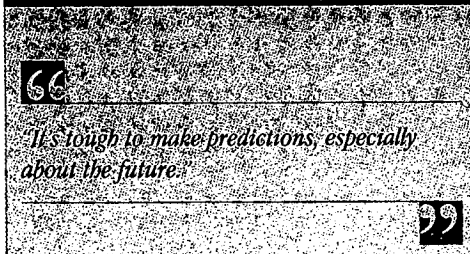
This is precisely the role the marketing dashboard should play — helping you graphically correlate learnings from multiple sources into an overall picture of marketing effectiveness designed to facilitate the asking of good questions more than the answering of unanswerable ones.

Making your dashboard predictive takes time. It requires that the marketing organization put sound measurement processes into place and then use them to continually challenge long-held assumptions about what works and why. Eventually, over time, you learn to focus in on the things that are most likely to be predictive and prove their accuracy. Most often, this turns out to be the discovery of several predictive components, none of which are perfectly reliable, but when viewed collectively are accurate the vast majority of times.

Remember, the dashboard is intended to continually present you with evidence of your ignorance. By constantly comparing actual results to forecast, you are forced to continuously improve your forecasting ability and learn from each day's new errors. It's supposed to make you a less fallible human, not Merlin the Magician. Keep pushing the limits of your human powers to identify the root-cause elements of success. These are the best candidates for truly predictive dashboard metrics.

If you completely lack any data or the budget for research, fear not. In Chapter 8, you'll see some helpful tools for uncovering causal relationships when analytics aren't an option.

FIVE WAYS TO IMPROVE THE QUALITY OF YOUR FORECASTING



"It's tough to make predictions, especially about the future." — Yogi Berra

Even if you're still working with a No. 2 pencil and scrap paper, there's no reason you can't produce outstanding quality forecasts with more predictability and reliability than you've ever experienced before.

While advanced mathematics and enormous computational power have improved significantly, few would argue that forecasting is an exact science. That's because at its core, forecasting is still mostly a human dynamic in which accuracy is dependent upon:

- asking the right people the right questions;
- the willingness of those people to answer truthfully and completely;
- the ability of the forecaster to separate the meaningful elements from the noise; and
- the openness of the forecaster to suggestions of process improvement.

That last point is key: process improvement. Consistently good forecasting isn't a mathematical exercise performed at regular intervals (e.g., quarterly) as much as it's an ongoing process of gathering and evaluating dozens or hundreds of points of information into a decision framework. Then, when called upon (e.g., quarterly), this decision framework can output the best forward-looking view grounded in the insights of the contributors. While software can facilitate process structure by prompting for specific fields of information to be included, it cannot make judgments on the quality of the information being input. As we've said, "Garbage in, garbage out."

1. Be Specific

As simple as this sounds, knowing exactly what you are forecasting is the most important step to success. It might seem pretty obvious that if you want to forecast sales, forecast sales. But what question are you really trying to answer? Unit sales? Gross margin? Market share? Customer value?

Also, what period of time do you need to cover? The longer out the forecast goes, the less reliable it is in the out years. This becomes especially important if your forecast is intended to anticipate the market size of a new category that will cost tens of millions or more to enter.

In general, forecasts fall into one of two categories: operational and strategic. Operational forecasts manage the existing organization one or two steps ahead of today's reality. Strategic forecasts look further out into the future to help focus the company's long-range planning. In mature market categories (toothpaste, personal computers, pet foods, etc.), the operational time horizon could be two to five years and the strategic 10 or more.

2. Be Structured

There are many reasons to take a structured, methodical approach to forecasting. First and most obvious is the importance of not leaving out key information that might affect the forecast. Also, there is the quality control factor and the benefit

of double- and triple-checking all the assumptions and formulas. But among the less obvious benefits of structure are:

- the removal of personal biases that might unknowingly be causing participants to filter their inputs or interpretations;
- the continuity of consistently improving upon the process over time, regardless of turnover among key input or executional resources;
- the auditability of the approach to determine where things might have gone awry at various steps in the process; and
- the confidence your rigor will inspire when others evaluate your work and are by necessity forced to accept some subjective judgments and assumptions.

Structure needn't be costly or time-consuming. In its simplest form, it is taking the time to map out and document all the inputs into the forecasting process; describing (in writing) the apparent relationships between causal factors; noting all assumptions and calculations in an easily referenced manner; and recording the accuracy of the resulting forecasts over time, alongside observations on emerging factors that might have influenced the results.

3. Be Quantitative — with or without "Data"

If you have lots of historical data at hand, quantitative forecasting methods such as moving averages, time-series analysis, and exponential smoothing create a much greater likelihood of developing a strong forecast, provided you have enough historical data to use them. But even if the only data you have are a series of "finger-in-the-air" estimates, you can still take a more disciplined quantitative approach by building simulations that explore the "what-if" scenarios often hidden in best guesses at average outcomes.

Regardless of the quantitative approach you use, keep in mind that like power tools, mathematics can be really dangerous in the hands of the inexperienced. Hiring someone with strong statistical skills to determine the most appropriate quantitative method(s), given your data (or lack thereof),

provides yet another comparison point to check against your experiential judgment.

Even if you choose to disregard the forecast derived by crunching the numbers, at least the exercise caused you to think about your instincts a bit harder. More likely, the quantitative process will raise questions about assumptions and data anomalies, which will highlight previously overlooked risks relevant to the forecast.

4. Be More Than Quantitative — Find Causal Factors

Straight statistical extrapolation is fine for simple situations with short time horizons. But more variables can affect the forecast over a longer horizon. The factors most likely to influence the forecast need to be identified and their possible impacts assessed as closely as they can be.

Sometimes causal factors can be obvious. For example, when forecasting anticipated growth in sales of sunglasses, one should take into account weather forecasts, since abnormally sunny or rainy weather can dramatically influence consumer purchase behavior. Other times, if you look more closely, causal relationships aren't so obvious, which is why you wouldn't normally guess that Seattle is the No.1 market in America for sunglasses per capita. Seattle? Rainy, overcast Seattle? It turns out that since the sunshine is far less frequent, people have a habit of losing their sunglasses between uses and need to constantly buy new ones.

The first step in identifying causal factors is to convene an "expert panel" of people from within your organization who possess several years of experience. Supplement the panel with suppliers, channel partners, or leading academics in the field and ask them to identify and rank the things that tend to make sales go up or down. Try to translate the responses into definitions of factors for which there are historical measures — like weather, industry sales of complementary products, medical conditions, etc. Where necessary, look for proxy measures that might be reasonably good approximations

of the real factor — like population growth is a proxy for demand for haircuts.

Once you've identified some potential causal factors or proxies, again look to statistical methods like regression models to test the extent to which the causal factor is truly causal (e.g., is directly or inversely related to actual historical sales). Allow the quantitative process to remove any personal bias about which factors might be most causal. Also allow it to eliminate causal elements that are linked and, thereby, redundant.

Many forecasting experts agree that evaluating the results from multiple forecasting approaches is indeed the best way to ensure that you have the fullest perspective on the possible outcomes. Armed with that perspective, you can apply your experience and instinct to determining the most likely forecast scenario.

5. K.I.S.S.

As with most things in life, simplicity is a virtue in forecasting. Einstein said, "Things should be made as simple as possible, but no simpler." In forecasting, we interpret that to mean that an accurate and reliable forecasting process should be comprehensive enough to identify the truly causal factors, but simple enough to explain to those who will need to make decisions upon it.[6]

Tips on Forecasting with Existing Data

There are dozens of ways to forecast from historical data (see more in Chapter 8). The type of forecast you are making and the number and nature of the causal variables will determine which of the many statistical techniques are most appropriate to your forecasting challenge.

As a marketing manager, you don't need to know the merits of regression, exponential smoothing, Box-Jenkins, or other statistical methods. What you do need is a Ph.D. consultant or university

professor to test a broad range of methods against your historical data to determine which methods are most accurate and/or most practical for your forecasting needs.

Once you have selected the appropriate statistical methodology for your forecast, you can choose from numerous inexpensive PC-based forecasting tools that can crunch the data fast, speeding up your forecasting process. The benefit of carefully selecting and then sticking with an automated software tool is that you begin to build consistent forecasting processes and measurement benchmarks. (It also doesn't hurt to have one in place when the CEO asks you to have a revised forecast of unit sales by country under three pricing scenarios on his desk that afternoon.)

You don't have to be a rocket scientist to select and use a tool. Today's forecasting tools are built to be used by decision makers, not quants. For the most part, they have friendly interfaces and drag-and-drop actions to run the program. There are some 40-plus desktop forecasting tools on the market that range from simple Excel plug-in modules to sophisticated software packages, priced from $50 to $5,000-plus. But don't expect a "plug-and-play" experience. These tools all require some degree of a learning curve and familiarity with statistics. If you're just starting out, you might want to stick with the basic spreadsheet approach.

There is no power in a forecast if those who need to trust it cannot understand or explain the logic and process behind it. Recognizing forecasting to be a complex human decision process is the first step toward dramatically improving your batting average and improving the accuracy and reliability of the forecasts coming out of your department.

Conclusion

Preparing your organization to isolate the right kind of metrics for your dashboard starts with a mission of self-discovery. Don't be concerned with lack of data or analytical skills. Many of the most important questions to answer can be discussed around a conference room table, leading to greater clarity and focus on what's really paramount.

Remember, it's particularly important not to bite off more than you can chew in the initial effort — don't go for quantity of metrics, go for finding a select few of the most informative, forward-looking measurements that fit your organization and reflect your clarity on the role of marketing in helping the company meet its stated goals.

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PART II

What Do We Measure? Choosing the Right Metrics for Your Dashboard

CHAPTER 4

Develop an "ROI" Framework: Key First Steps to Identifying the Right Dashboard Metrics

There's very little sense in creating a great, forward-looking dashboard for a poorly designed automobile. By that, we mean that a marketing dashboard is useless — without the solid mechanics of profitability management behind it.

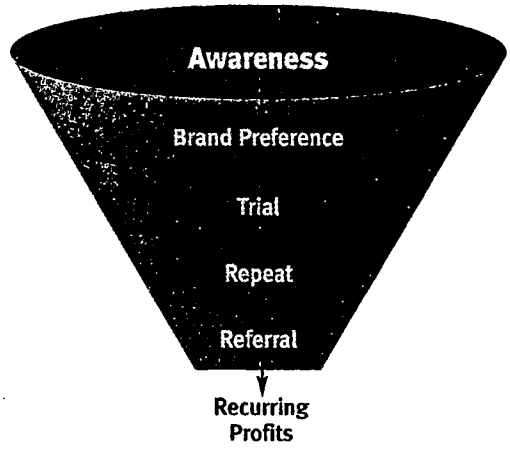
Actually, that might be overstating it a bit. You can certainly *create* a dashboard without this infrastructure — it just won't be worth much. This is exactly what we see time and again: Eager dashboard builders create elaborately layered charts and graphs of metrics that don't really provide any insight into the underlying causes affecting their business or the trajectory they're unknowingly committed to.

This chapter will zero in on two concepts necessary to bring the underlying discipline of profitability management into your marketing organization: funnel management and profit optimization. Together, they create a framework for measuring and improving marketing effectiveness. If they already exist in your company, dashboard construction will be primarily a methodical design exercise. If they do not, you have some work to do before you begin thinking about what your dashboard will look like.

Funnel management provides a structure for learning how awareness translates to attitudes, attitudes to preferences, preferences to behaviors, and behaviors to profits. It is a simple and efficient tool that blends the classic advertising "hierarchy of effects" model with elements of strategic sales management. Funnel management takes a large group of potential prospects and defines the stages through which the group is transformed into a valuable selection of

dedicated customers. Using such a tool allows marketing professionals the opportunity to monitor almost daily progress toward measurable profits.

FIGURE 4.1 — THE MARKETING FUNNEL



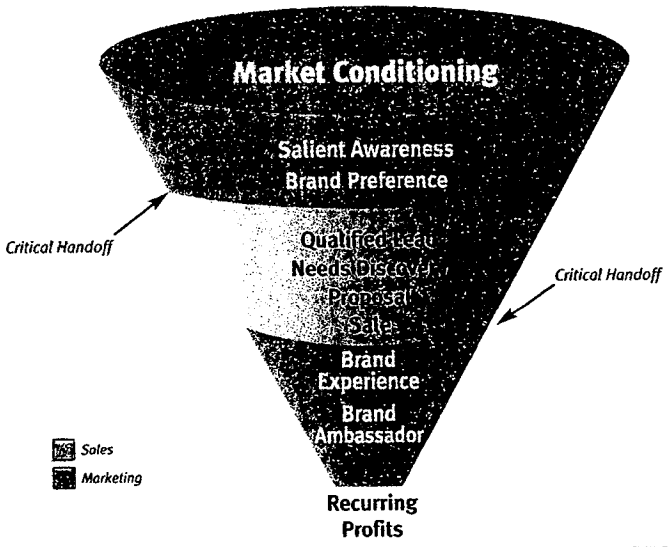
One of marketing's key objectives is to produce specific consumer or customer behaviors that lead to positive financial outcomes. A marketing program or initiative may have a specific purpose in moving prospects through one stage of the funnel — such as building brand preference or generating qualified leads. But these marketing investments only pay back when incremental profits are derived at the end of the funnel. We can create huge numbers of aware brand disciples in the marketplace, but if they're not buying from us (at profitable prices), the investment is wasted. This is why it is so critical to identify and plug the leaks in the funnel.

There's no practical way to build a 100% leak-proof funnel process. At each stage of the funnel, some prospects or customers will leak out as their needs or circumstances change or competitive entreaties lure them away from you. Nevertheless, the goal of funnel management is clear: Plug the leaks. When you find and plug leaks, you create incremental profits. If only one out of every 100 prospects who become aware of your product buy it, you have 99% leakage, or waste. Even if some of that spending is expected to pay back in the form of latent customer conversions, understanding and

plugging the leaks can substantially improve the return you derive from your investments in getting prospects into the top of the funnel.

Linking the marketing portion of the funnel to the sales portion is an excellent way to map and test the relationships between marketing's efforts at brand development and demand generation, and the sales force's ability to take that demand and turn it into profitable customer relationships. Too often, companies separate marketing from sales, creating a "handoff" mentality in which each department believes it is doing its part, but the other is not pulling its weight.

FIGURE 4.2 — INTEGRATED MARKETING/SALES FUNNEL



An integrated funnel (figure 4.2) provides an informative view of marketing performance at all stages. It represents the progression from unaware prospects to profitable "brand ambassadors." It also begins to dissect the process to enable linkage analysis in the search for correlations of how success in generating progress through certain stages of the funnel leads to further progression.

Once those links become clear, strategies and tactics can more easily be aligned and targeted to specific stages of funnel progression in which the effect would maximize impact from marketing investments. One way to measure this impact is using ROI.

The simple formula for calculating ROI is:

$$\text{ROI} = \frac{\text{NPV of Incremental Profits (Incremental Revenue – Expenses)}}{\text{Initial Expenses}}$$

"NPV" is the net present value of a series of profits realized over a period of time, discounted back to current dollars.

Many marketers and academics have denounced the use of an ROI formula in measuring marketing effectiveness as "too limiting" or possibly "misleading." We agree. Used in the wrong way or poorly manipulated, ROI calculations can be as imprecise and subject to misinterpretation as any other statistical or financial assessment tool. (See Expert View on the next page.)

However, when used properly in the context of driving more profit — not just getting the highest possible ROI score — ROI measurement is a reasonable way to standardize the process of gauging the *relative* value of one marketing investment against another.

If every marketing investment is held to the standard of ultimately creating some profitable change in customer or market behavior, then we can successfully compare *all* proposed investments using a standardized assessment process to identify those offering the greatest potential for driving profits. Sure, we might need to make some assumptions, but if we place some significant effort on trying to anticipate the intended behavior changes upfront in the planning stages, we can often identify ways to better structure our investments to help promote reliable measurement of results. This in turn helps us see where our assumptions were accurate, where they were less so, and why. Over time, our assumptions get better and better in planning our investments and achieving maximum return.

A consistent framework for assessing marketing returns allows marketing executives to:

- identify places where spending is most effective;
- correlate the individual and collective impact of marketing initiatives on prospect or customer behaviors, then link those behaviors to the financial value drivers;

- reallocate people or dollar resources towards greater impact — for example, this can include taking an underperforming initiative and retargeting it toward a high-value segment, eliminating unprofitable channel gaps and addressing identified leaks in the funnel progression; and
- extend campaign-level profitability to customer-level profitability across multiple acquisition, retention, and cross-sell campaigns that will optimize customer value.

EXPERT VIEW: MARKETING MEASUREMENT

TIM AMBLER
SENIOR FELLOW, LONDON BUSINESS SCHOOL

You're no fan of return on marketing investment (ROMI) as a metric are you?

AMBLER: *It's arithmetically flawed. If you're looking at the return from marketing, you would normally look to things such as net cash flow or shareholder value that subtract costs from revenue. But what ROMI does is divide revenue or profits by costs, and when you start dividing rather than subtracting, you open the door for some erroneous conclusions. For example, if you spend $1 million and generate $500,000 net incremental profit, you have a 50% ROI. But if you spend $100,000 and generate $200,000 incremental, you get a 200% ROI. Which is better for the company? ROI doesn't give you the whole picture. Free cash flow can be so much more important to most companies.*

Another concern is that marketers driven to increase ROMI can do so by cutting the "I," and that isn't generally an effective strategy for growth. ROI works when you have to make a choice between options that require the same amount of scarce capital and the choices are mutually exclusive. But discounted cash flow (DCF) would still be the preferred metric in such cases. Marketing is not a once-off capital sum (for which ROI was invented) but a continuous stream of expenditures which the company makes every year.

So are you advocating more of an NPV or DCF approach?

DCF is fine for measuring the future potential of any activity compared with another. Assuming you do DCF on a normal accounting

basis, you are evaluating alternative marketing initiatives against each other on the basis of expected cash flows for the current year and for several years into the future. That's fine. But that is quite different from trying to evaluate the results of the marketing you've done up to the present time.

If you're looking at actual results, you want to know what has happened up until now. You don't want to confuse that with what might take place in the future. So you have to take the short-term profit you've achieved and see if your brand asset (I call it brand equity) has gone up, in which case you want to take even more *credit for achieving both short-term profit and increase in brand assets. But if the brand assets have gone down, your short-term profits aren't viewed quite so positively. This is very important when looking at things like price promotions.*

Are you suggesting that organizations need to do a much better job of defining their objectives upfront?

I think that's true, but that's not what people do. The biggest predictor of what will be in this year's marketing plan is whatever was in last year's marketing plan, not some change in objectives.

Short-term profit is fairly easy to benchmark against other investments the company might make. But how do you measure "brand equity," as you define it?

This is difficult. In a perfect world, it would be nice to value brand equity at its present value, because then you could express brand equity in short-term dollars. Unfortunately, you can't do that. You need to look at a dashboard of key brand equity measures and be broad-minded enough to accept multiple components of your assessment instead of a single financial number — with the idea that a dashboard gives you a better idea of what the state of your marketing activity is.

That sounds like an approach intended to increase confidence in marketing's "accountability" vs. one intended to specifically measure return.

Yes, and therein lies the challenge when it comes to explaining how marketing really works to non-marketing people, particularly financial

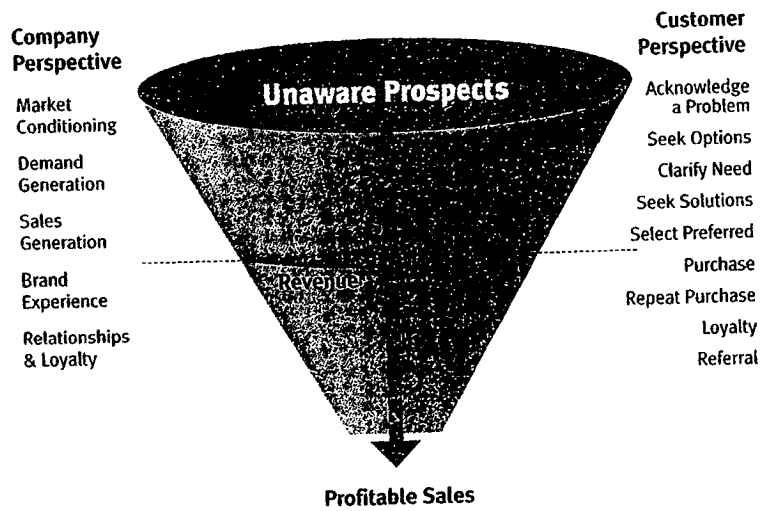
people. The financial people would like everything measured in dollars (as we all would), but it's just not practical. You would need to make too many assumptions along the way and the validity of your ultimate numbers would be suspect at best. Now, I'm all for marketing people becoming as financially literate as possible, but the financial people must become more marketing literate as well. And it comes back to the point about setting objectives. If the financial people are involved in the marketing planning process, as they should be, then they will come to understand that the dashboard is really the only way to do it.[1]

Mapping the Funnel

One of the most important roles for marketing is to motivate prospects to progress through stages in the funnel. The funnel tracks changes in customer behavior that result from a single activity or series of marketing activities to sales, which are then linked to financial outcomes. On your dashboard, this will be reflected in terms of:

- understanding where marketing performance is succeeding versus failing; and
- establishing links between funnel stages to help predict future outcomes.

FIGURE 4.3 — SAMPLE MARKETING/SALES FUNNEL



The marketing and sales funnel in figure 4.3 represents progressive stages that targeted prospects may pass through from initial awareness to forming an opinion to purchasing and then conducting an ongoing relationship with the company.

On the left side of the funnel is the company perspective of the progression path. On the right, there is the prospect/customer perspective. At corresponding points in each path, "interest" turns into a sale and economic value is created.

We could go into great depth of detail on what the various stages of funnel progression might look like, but first it might be helpful to have some background on these progression pathways.

Over 100 years ago, marketers first conceived a model for consumer purchasing behavior. Originally, it was suggested to be a very simple model of four stages:

Awareness ➤ Interest ➤ Desire ➤ Action

Conventional wisdom was that the consumer followed this progression in deciding what to purchase and when.

In the 1960s, the HOE (hierarchy of effects) model was developed upon the assumption of a three-stage process in consumer behavior:

Cognition ➤ Affect ➤ Behavior

"Cognition" represented the process of becoming specifically aware of a solution to fit one's need; "affect" was the process of becoming emotionally engaged in the purchase; and "behavior" was the resulting purchase.

Over the past 40 years, all this has proven time and again to be *wrong*.

The HOE model may be right for some categories and some consumers at some points in time, but it fails miserably as a predictor of how most people buy in most categories most of the time. It assumes a sequential linearity of the buying process that just isn't true in many (if not most) occasions. True, you are unlikely to buy

something you are not aware of. But, you might just become aware of it by seeing it on the shelf at the checkout counter and decide, on impulse, to pick it up. No emotional bonding required.

So why do we bring it up if it's so wrong?

The real value of the HOE model to marketers isn't in its accuracy as much as its existence. The mere fact that we have such a model as a starting point to begin to consider how our own categories work and what the linear or non-linear stages of progression might be among our own customers is highly beneficial in forcing us to think "outside-in" from the customer perspective. It encourages us to map out the models that work in our own business, see where the critical prospect/customer progressions might be, and better understand what causes those progressions to work or what obstacles prevent them.

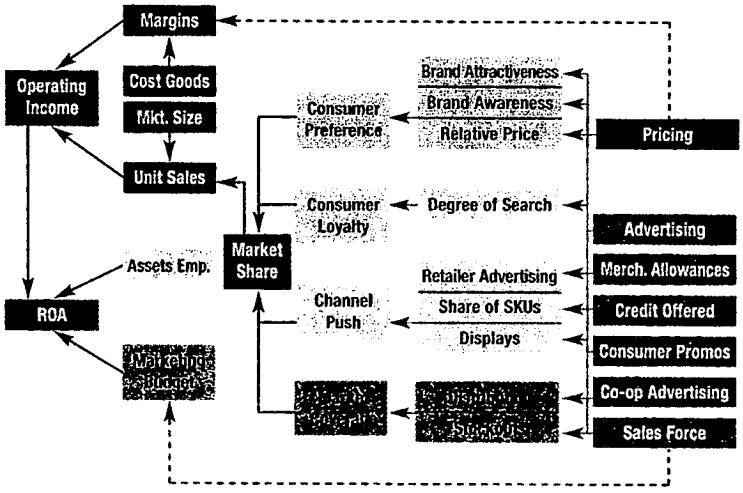
The funnel we've been discussing here is likewise just a conceptual tool to map the process of how customers become customers. Prospects may progress through the entire funnel in less than a minute (someone choosing an impulse item off a crowded shelf in a retail outlet) or extend over several years (a business making a major technology investment).

Chances are that these funnels do *not* accurately describe your business and the way your customers buy. However, by now you hopefully understand that the challenge is to map out the one that *does* work for you.

The model in figure 4.3 shows one way that awareness turns into attitudes that translate into behaviors. It has never actually been proven to be a fully accurate view of what really happens between the consumers' ears, but *testing* its applicability to or limitations within your industry/product may illuminate some clear correlations, positive or negative, that should help you continue to refine your understanding of the pathway from awareness to purchase and repurchase.

Figure 4.4 shows another method of mapping the marketing and sales inputs into the customer buying process and links those to financial outcomes.

FIGURE 4.4 — MAP OF MARKETING AND SALES INPUTS INTO THE CUSTOMER BUYING PROCESS WITH LINKS TO FINANCIAL OUTCOMES



Source: Copyright © 2005 Dave Reibstein and Paul Farris. The Wharton School of the University of Pennsylvania. Reprinted with permission.[2]

This is a good example of the challenge most marketing departments need to undertake to better correlate marketing investments to business outcomes.

Regardless of what your "funnel" looks like, by the time you get to the bottom, only a small portion of the initial prospects actually convert into sales. Those who leak out along the way generally fall into one of two main categories:

1. the wrong target — someone highly unlikely to ever convert to a sale; or
2. a good prospect that your marketing efforts haven't yet won.

Generally speaking, profitability will improve if you spend less budget and effort on trying to prevent the "wrong target" types from leaving and more on improving your effectiveness against the "good prospects." Diagnosing the nature of leakage helps ensure that you don't focus too much spending at the top of the funnel, only to lose prospects later when you have no formalized program in place to hold on to them.

Leakage is a particular problem in organizations in which marketing generates leads that are handed off to sales. Marketing may dramatically improve its effectiveness in increasing lead volume, but if sales can't close more deals, the entire process is of little value to the company. The same gap can occur in an organization in which brand spending is effective at increasing salient awareness and strong brand preference, but the marketing initiatives intended to convert brand preference to actual sales are ineffective.

A closer look at why the marketing-sales handoff most often fails reveals the most likely causes:

- Marketing increases lead volume beyond sales capacity.
- Marketing increases lead volume with the wrong target — a group that has a low incidence of closing.
- Marketing and sales are not aligned on the key value propositions and communication strategies.
- Sales has other priorities and isn't working the leads provided by marketing.

To adequately diagnose the areas for greatest improvement, we need to break down the funnel into as many discrete stages as possible from both the company and the buyer's perspectives — with the latter being most important.

Mapping the funnel from the company's perspective is the typical approach that will make sense as we build strategic and tactical plans. But the classic "supply-chain" marketing models often overlook the subtleties of the demand process in the marketplace. Mapping the funnel from the buyer's perspective can be much more insightful, helping marketers to better understand the market forces behind conversion and leakage.

Mapping Your Funnel Step by Step

1. **Map the funnel stages from the buyer's perspective for each important market segment that exhibits a unique buying process:** Apply what knowledge you have of your industry/category, and be sure to highlight your assumptions for future investigation through research. Try to isolate each stage in prospecting and relationship development in which portions

of the audience might fail to progress and the underlying causes (see Chapter 8 for some good tools to apply here).

2. **Define key measurement points within the funnel:** The percentage of successful conversions from one stage to the next is known as the conversion rate. Tracking conversion rates is useful for projecting performance and identifying key profit improvement opportunities. It might be tempting to measure progression through every stage in the funnel with regular frequency, but realistically, you may be limited to select points along the way based on measurability or cost constraints. The most important points are critical gateways that tend to accelerate or restrict the pace of flow through the funnel. For example, a chemical company we know has found that once a prospect orders a sample of some new chemical product, that prospect is five times more likely to become a customer. Consequently, they know how much they can spend to generate a sample request and how much the sample request is worth in potential customer value. These key prediction points are the highlights of the funnel.

3. **Track progression through the funnel:** You can do this by measuring general movement of groups of prospects period over period (the "pig in the python" method) or by tracking individual customers with whom a direct relationship exists. Measurement methodologies include database analysis, panel studies, and quantitative research. Your funnel should factor in lag time so the progression performance can be fully reflected in projections.

4. **Establish linkage patterns:** Funnel management requires an understanding of how changes at one stage in the funnel are likely to affect future stages. For example, if a marketing initiative increases consideration and purchase intent, does that appear to translate into more sales meetings and higher close rates, or are additional tactical initiatives required? Start with observations from experience if that's all you have. You might use some facilitated sessions to capture the experiences of a group of marketing and sales personnel and make your collective assumptions off this "tribal knowledge." If you have data, statistical regression approaches provide the greatest

degree of certainty. The point is, work with what you have and refine your thinking. Then, put the continuous improvement process in place to get more reliable estimates over time.

5. **Monitor and validate projections:** Making assumptions based on past performance is all we have at the beginning, but it's important to realize that marketing performance is subject to continual change in dynamic markets. Be on the watch for changes in conversion and leakage throughout funnel progression so you can initiate corrective actions quickly.

CMO View: Understanding the Funnel

Joe Tripodi
Chief Marketing Officer
The Allstate Corporation

Lately, we've been working on "remixing" our marketing. Instead of spending 100% of our marketing dollars in the last year on very general brand messages that attack very broad segments of the marketplace, we're getting much more focused in regards to fine-tuning and refining our programming and call-to-action marketing. We want to determine more directly and overtly the relationship between the spend and the results.

Allstate isn't likely to transform fully into a Geico model of 100% direct response marketing. We're not going to go there, but we're certainly going to move a long way toward getting people to better understand that if we spend X, the result will be Y.

At the end of the day, when you look at the process for how we build the business, marketing is there at the top of the funnel, driving demand generation. We're not there in an agent's office, nor is anyone from the marketing department closing the sale. So, we work hard to get everybody to understand what their roles are in the overall funnel. If someone in the agent network says, "This advertising isn't working — it's not driving incremental sales," marketing needs to be able to say, "Well, wait a minute. Look at all the incremental 'quoting' that we drove." All this extra quote volume is a reflection of driving consumer demand. The inquiries are there, but the sales aren't closing. Are the quality of the leads good? If not, maybe the advertising is broken. Otherwise, we may be looking at a distribution system issue,

> *not a marketing issue. Either way, it's important to find out fast and take the corrective actions.*
>
> *From a process point of view, deconstructing the sales funnel and then getting everyone to understand their role is critically important to continuous improvement in our business.*[3]

Strong Funnel Management Gives You:

- The baseline measures to assess how an event in one stage of the funnel will flow through to subsequent stages of the funnel, including the financial outcome. Supported with a structured measurement process, this type of analysis can guide budgeting based on the assumed results.
- An understanding of the lasting effect of funnel progression. If brand awareness or product interest is generated without follow up, at what point does that buyer's interest dissipate? Alternatively, if we believe that demand generation investments have a multi-year payout, the funnel helps us test that hypothesis and attempt to measure it specifically.
- Tighter integration of marketing tactics. The timing, message, and objective of each marketing tactic needs to be mapped to the funnel so that the performance of related programs can be assessed over independent initiatives to see if the whole is adding up to more than the sum of the parts.

Key Measurements from the Funnel That Feed into the Dashboard Include:

- actual progression rates from stage to stage;
- projected continued progression over future periods;
- expected profits from financial value drivers (tied to expected profits at the bottom of the funnel);
- cost per funnel progression; and
- frequency of leakage rates by reason.

Establishing an "ROI" Framework

Used appropriately, ROI can be one of the most helpful metrics for marketing. It illuminates the primary drivers of short-term financial

performance from your current portfolio of marketing investments and allows you to prioritize future budget allocations. It also creates a means to manage risk — perhaps for the first time — in your marketing plan.

An effective ROI framework includes a detailed marketing and sales funnel, financially sound ROI calculations, and profit-driven strategic and tactical planning processes. This is how you begin to talk the language of your CFO. But getting there may not be easy.

A 2004 survey conducted by Forrester Research and the ANA found "a lack of consensus among marketers on how to measure/define their return on investment (ROI) in marketing."[4] The top choices were Incremental Sales Revenue Generated by Marketing Activities (66%) and Changes in Brand Awareness (57%). Other top choices referred to purchase intentions, attitudes, market share, and leads.

None of these are correct.

Is there a right answer to how marketing ROI is defined? Yes. If you were to ask individuals how they defined and measured the ROI on their stock portfolio, what kind of responses would you expect? Most investors will not be satisfied if their stock portfolio returns are defined as "most popular stocks" or "most likely to grow." They also won't be satisfied if they get high growth rates that are more than offset by high commission fees.

ROI is an efficiency measure built on incremental profits. Not revenue. Profits. It's about the return (in new profits) you get from investing past profits. Calculating ROI on anything other than profits is misleading at best, and *will* undermine your credibility amongst your peers in finance.

The first step in creating your ROI framework is to standardize the ROI calculation and define the data points used in that calculation. The formula must be constructed with complete financial integrity to meet the standards of the CFO and other executives outside of marketing. Return on investment provides the ratio of incremental profits generated to the proposed marketing investment. The investment

and return must reflect the net present value (NPV) of the stream of future cash flows. Once again, the formula is:

$$\text{ROI} = \frac{\text{NPV of Incremental Profits (Incremental Revenue} - \text{Expenses)}}{\text{Initial Expenses}}$$

The ROI calculation should reflect the projected or actual impact of a specific marketing initiative you identified during funnel mapping. The marketing initiative may be a campaign, a subcomponent of a campaign, a series of integrated campaigns, or any initiative designed to profitably influence customer behaviors.

Remember that the goal is not to maximize ROI but to use ROI as a tool to maximize profits. Profitability is optimized for a marketing initiative when the point of diminishing returns is identified and the last dollar spent meets the threshold or hurdle rate set by the company.

To accomplish this, you must use a multilevel analysis consisting of independent, incremental, and aggregate ROI or NPV measures. The independent measure is done for a stand-alone marketing initiative at its smallest feasible design. From there, incremental measures are run as the target audience size is expanded, as new media channels are added, and/or as offers or other enhancements are made to the core initiative. An aggregate measure then encompasses the complete initiative and possibly multiple initiatives that together have a greater impact than when run independently. This multilevel approach is critical to reflecting the need for integrated campaigns to fully motivate prospects through the entire funnel.

Your financial model can exist in an Excel spreadsheet or more sophisticated software. You'll also have to figure out how to streamline access to data. Critical business intelligence is also required. The goal is to simplify the process so marketers can input the known and assumed values of the initiative, project the return and assess alternative scenarios, and modify the strategic and tactical plans to reflect the highest profit potential.

At every stage, think about how the findings might eventually look on your dashboard. If you can't visualize the findings on

a dashboard, ask yourself if you should really be doing these particular measurements.

The most challenging part of determining marketing effectiveness is often measuring the incremental impact that results from executing the marketing initiative. The key challenges include:

- identifying a reliable "baseline" of sales activity that would have resulted in the absence of marketing;
- getting access to necessary data;
- designing measurements that leverage the right mix of methodologies available;
- allocating the resources necessary for measurement and analysis; and
- establishing a measurement hierarchy based on profit potential.

The measurement hierarchy defines what gets measured, how often, through which methodology, and at what cost. This is done based on the reality that it is not practical or possible to measure everything. With the sales funnel and financial return model in place, you should know where the greatest profit impact exists and what measures will give the most insight. High priority measurements could include identification of customer-level profitability, assessing a specific media channel, optimizing a high frequency campaign, or measuring leakage rates at select points in the funnel.

The ideal measurement methodology is classic experimental design (test vs. control) in which the isolated independent variable can be proven to be the exclusive cause of changes in the ultimate outcome. Unfortunately, the conditions to conduct such pure tests are rarely present. So where marketplace realities complicate the assessment environment, marketing-mix modeling and agent-based modeling are popular approaches for assessing marketing performance. The former attempts to use statistical regression to find correlations between various elements of the marketing or media plan and the resulting sales or profits. The latter uses much more sophisticated multivariable techniques to measure the performance of entire markets and market segments in response to small changes in stimulus elements (marketing programs). There are also quantitative research surveys, panel studies, direct observations, and pre-/post-measurements. Strong measurement plans incorporate a blend of these methodologies.

Risk-Adjusted Returns

Globalization, multichannel marketing, supply-chain management, strategic alliances, regulations, corporate governance — marketing is riskier today than ever. To put their companies at competitive advantage, marketers need to take more calculated risks. Yet to most marketing departments, "risk management" is limited to customer credit and vetting vendors — functions usually handled by finance or purchasing.

For marketing executives, risk management is a trial-and-error evolution. Has this agency produced good work previously? Will this vendor deliver on time? Experience has fine-tuned our instincts to a point where we intuitively assess risks based upon a combination of hundreds of deliberately and subconsciously collected data points.

Many executive committee members still view marketing as the last bastion of significant risk exposure. Everyone else from finance to operations, HR to IT employs robust risk-assessment tools and processes and highly effective ways to demonstrate the risk-adjusted outcomes of their key projects. They talk in terms of "net present value" of "future returns" associated with an investment made today. They link their recommendations to the bottom line and present their cases in such a way as to reassure not just the CEO, but also their peers, that they have carefully analyzed the financial, operational, organizational, and environmental risks and are proposing the optimal solution with the best likely outcome.

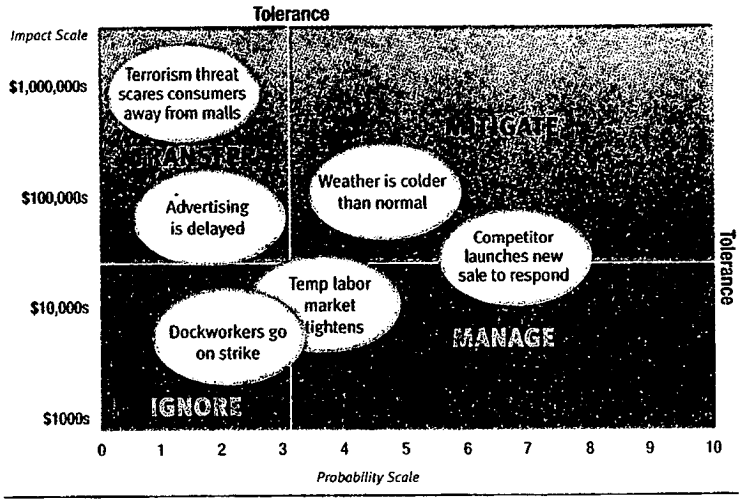
This process needs to be carried into the marketing measurement platform. Each proposed initiative or program should be evaluated not just on its total potential return, but on its risk-adjusted potential.

Here's an example: Let's say we're a retailer planning a holiday sale. We plan to run $1 million of TV advertising to drive traffic into stores during this one-day extravaganza. Using the reach and frequency data we get from our media department, combined with our assessment of the likely impact of the advertising copy, we estimate that about one million incremental customers will visit our stores on that day. If only 5% of them purchase at our average gross-margin per transaction of $20, we break even, right?

Unless, of course, it rains. In that case, our media will reach far more people watching TV inside, but far fewer will venture out to shop. Or maybe the weather will be fine, but one of our competitors will simultaneously announce a major sale event of their own featuring some attractive loss-leaders to entice traffic into their stores. Or maybe there will be some geopolitical news event that disturbs the normal economic optimism of our customers, causing them to cancel or postpone buying plans for a while.

Any or all of these things could happen. It only takes one to completely mess up the projected return on the $1 million investment in sale advertising.

FIGURE 4.5 — RISK MANAGEMENT MATRIX



A strong measurement framework requires that each marketing initiative be thoroughly risk-assessed to identify all the bad things that could happen, the likelihood of them happening, and the potential impact if they did. The project forecast is then reduced accordingly. So if rain would cause a 50% drop in estimated store traffic and the weather forecast shows a 30% probability of rain in the area, our forecast for the event should be reduced by 15% (50% x 30%).

This structured risk-assessment approach will highlight investments that are more prone to external risk factors and modify their rosy expectations accordingly. In the end, high-risk, high-reward initiatives may be just what's required to achieve business goals, but wouldn't you rather know that's what you are approving, instead of finding it out later when high hopes are dashed?

The bibliography at the back of this book presents some excellent reading suggestions on risk-assessment and risk-management strategies. No marketing measurement framework is complete without the risk-management component in place.

Conclusion

Any discussion of dashboard development needs to begin with a thorough analysis of your ability to map and measure basic marketing performance. That means devotion to two critical concepts: funnel management and profit optimization.

While linear models linking awareness to perceptions to behaviors are rarely found to be accurate, they do provide a practical jumping-off point for beginning to ask the right questions. Mapping your funnel processes helps to clarify how marketing actions are intended to stimulate customer behaviors, which in turn create incremental cash flows. Exploding these processes out in detail helps create alignment while simultaneously drawing attention to some potentially powerful leading indicators for your dashboard.

The best dashboards are all about the infrastructure of an organization's measurement system. You can't see the inner workings, but without attention to their quality, the dashboard will be irrelevant from the start. We've found that many funnel and measurement efforts miss the boat by looking internally — focusing exclusively on financial results instead of buyer behavior. Focusing on buyers, even if it means developing entirely new ways to watch their behavior, leads you directly to the elements that produce profitability. And those are the areas worthy of priority consideration for your dashboard.

Sources

1. *MarketingNPV Journal*, vol. 1, issue 4.

2. Reibstein, Dave and Farris, Paul, The Wharton School of the University of Pennsylvania, 2005.

3. Tripodi, Joe, The Allstate Corporation.

4. ANA (Association of National Advertisers) and Forrester Research, "Marketing Accountability and Technology," 2004.

CHAPTER 5

The Obvious Types of Metrics (in Some Not-So-Obvious Forms)

When it comes to choosing metrics for a marketing dashboard, measurements are not only specific to industry, but to company, to division — right down to the specific department and the critical objectives at hand. As we've said, the marketing dashboard can be anything you want it to be as long as it shows the forward-looking information that benefits you most. In fact, the marketing dashboard should be tailored to meet the specific goals, objectives, and strategies of *your* company, its structure, and its unique culture.

Nevertheless, there are some categories of dashboard metrics that are appropriate in many circumstances. In this chapter and the next, we'll go over some of the more common ones. In Chapter 7, we'll take a look at some of the metrics you're likely to forget but shouldn't.

One note of terminology and philosophy as we begin our descriptions: Marketers show a tendency to use dashboard metrics that relate to revenue (topline sales) as opposed to profits (bottom line). This is a critical error that not only risks misleading decision makers about the effectiveness of marketing investments, but also perpetuates the cynicism with which other departments view marketing.

The potential to be misleading is relevant in that marketing costs must be allocated to the sales they generate *before* we determine the net incremental profits derived from the marketing investment. If we spend $5 million in marketing to generate $10 million in sales, fine. If the cost of goods sold (COGS, fully loaded with fixed cost allocations) is less than $4 million, we probably made money. But if the COGS is more than $4 million, we've delivered slightly better

than breakeven on the investment and more likely lost money when taking into account the real or opportunity cost of capital.

Presenting marketing effectiveness metrics in revenue terms is seen as naive by the CFO and other members of the executive committee for very much the same reason as outlined above. Continuing to do so undermines the credibility of the marketing department, particularly when profits, contribution margins, or even gross margins can be approximated.

Why Revenue Metrics Can Be Dangerous

In our experience, there are several common rationalizations for using revenue metrics, including:

- limited data availability;
- an inability to accurately allocate costs to get from revenue to profit; and/or
- a belief that since others in the organization ultimately determine pricing and fixed and variable costs, marketing is primarily a topline-driving function that does not influence the bottom line.

To the first of these, we empathize. Many companies suffer from legacy sales reporting infrastructures where only the topline numbers are available or updated with a minimum of monthly frequency. If you're in one of those, we encourage you to use either the last month's or a 12-month rolling average net or gross margin percentage to apply to revenue. Finance can help you develop reasonable approximations to translate revenues to profits in your predictive metrics. You can always calibrate your approximations later when the actual numbers become available.

If you suffer from the second of these, an inability to allocate costs precisely, consider using "gross margins after marketing" (revenue less COGS less marketing expenses). Most companies know what their gross margins are by product line, and most CFOs are willing to acknowledge that incremental gross margins after marketing that exceed the overhead cost rate of the company are likely generating incremental profits. This is particularly true in companies in which the incremental sales derived from marketing activities are not necessitating capital investments in expanding production or distribution capacity. In short, engage finance in the conversation and collectively work to arrive at a best guess.

If you find yourself in the third group, you need to get your head out of the sand. The reality is that the mission of marketing is to generate incremental *profits*, not just revenue. If that means working with sales to find out how you need to change customer attitudes, needs, or perceptions to reduce the price elasticity for your products and services, do it. Without effective marketing to create value-added propositions for customers, sales may feel forced to continue to discount to make their goals, leading the entire organization into a slow death spiral — which, ironically, will start with cuts in the marketing budget.

If you *identified* with this third group, this should be a wake-up call that your real intentions for considering a dashboard are to *justify* your marketing expenditures, not really measure them for the purpose of improving. If that's the case, stop here and return this book. You're wasting your time. Your CEO and CFO will soon see your true motivation and won't buy into your dashboard anyway.

But if reading this is bringing you some personal enlightenment, re-read Chapter 3 and commit yourself to developing an effective strategy map. Then, draft a role of marketing contract to review with your CEO before you read on.

Having said all that, there are some times when using revenue metrics is highly appropriate. Usually those relate to measurements of share-of-customer spending or share-of-market metrics that relate to the total pie being pursued, not those attempting to measure the financial efficiency or effectiveness of the marketing investment.

In addition, be especially careful with metrics featuring ROI. If ROI is a function of the net change in profit divided by the investment required to achieve it, it can be manipulated by either reducing the investment or overstating the net profit change beyond that directly attributable to the marketing stimulus. Remember that the goal is to increase the net profit by as much as we can, as fast as we can, not just to improve the ROI. That's just a relative measure of efficiency in our approach, not overall effectiveness.

So, speaking of marketing efficiency metrics, let's start our review of common dashboard metrics here. Remember, most of these metrics

are applicable to many industries. Try to extend our examples to your world to see if a given metric would be insightful for you.

Marketing Efficiency Metrics

Value/Volume Ratio

This is a basic calculation of marketing efficiency. It is the ratio of your estimated share of gross profits you're getting in your category compared to your share of the total volume sold in the category. For example, if you have a 19% share of volume by gallons of all the gas sold, but you only have a 14% share of total gross profits in the category, your value/volume ratio is 74% (14% divided by 19%). A ratio of less than 100% suggests you are buying your volume share through discounting and may need to course-correct by either reducing costs without reducing volume or by reducing the price elasticity of your customers through efforts to increase the perceived value of your product.

Marketing Cost Per Unit

Whatever your business, you sell "units" of something. It might be widgets or cases of widgets. It could be numbers of locomotive engines. Perhaps pounds of chemicals. Whatever your "units" are, you should be able to easily find out how many your company sells over a period of time. If you take the total marketing expense over that same period of time and divide by the number of units sold, you get a marketing cost per unit (MCPU). $1,000,000 in marketing expense divided by 250,000 units is $40 MCPU. Over time, you'd like to see the MCPU decline. You might also want to track your MCPU against your best estimates of your competitors.

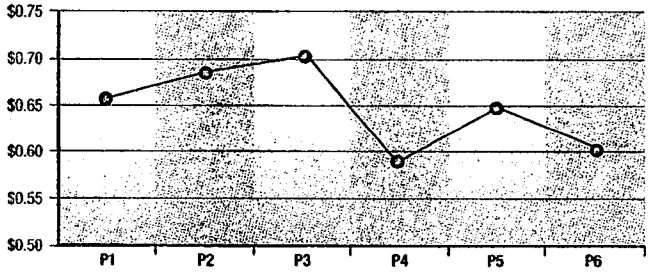
Lag time is an important consideration if you're using MCPU. A dollar spent today on marketing may not influence a unit sale for several weeks or months. There is a strong argument that some of the money you're spending in marketing today is intended to create a long-term effect on unit sales that might not even show up in the current year. Regardless, you can likely discuss the lag time factors as a group (including finance) and arrive at an agreement on the expected timeframe of impact of the components of your marketing plan. When those expenses with long lag times are laid out on a calendar like the one in figure 5.1, they begin to overlap with short-term program expenses to create a total marketing cost

in the current period. This provides the numerator for the calculation against the denominator of current period unit sales.

Over time, your accuracy at spreading marketing costs out over the proper period will increase, and hopefully your MCPU will improve as a reflection of increased efficiency.

FIGURE 5.1 — MARKETING COST PER UNIT

	P1	P2	P3	P4	P5	P6
Short-Term Programs	$2,435	$3,972	$2,889	$2,301	$3,253	$2,826
Amortized Long-Term Program A	$300	$300	$200	$100	$0	$0
Amortized Long-Term Program B	$0	$0	$2,150	$1,000	$400	$300
Total Marketing Investment	$2,735	$4,272	$5,239	$3,401	$3,653	$3,126
Total Units Sold (000s)	5738	5453	7539	5449	$5,823	$5,186
$ Marketing Per Unit	$0.66	$0.68	$0.69	$0.59	$0.63	$0.60



Marketing-Mix Productivity:

Marketing-mix models attempt to correlate investments in different communications media — broadcast, Internet, direct mail, print, outdoor — to actual sales volume. By using transactional data from all their points of sale, some companies can figure out the optimal mix for allocating marketing dollars. Unfortunately, most companies do their mix modeling on revenue, not profits. A dollar spent in one channel does not necessarily generate the same margin on a dollar in sales — so when discounting is done, sales may jump, but at the expense of profitability.

The scope of this book prohibits an in-depth discussion of mix models, but if you do have a mix model, consider reporting on the

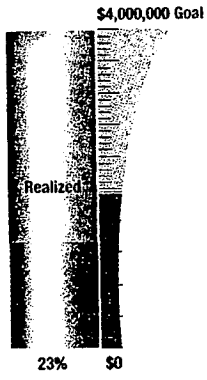
dashboard your overall contribution on total mix. If your modeling suggests you are getting $1.63 of contribution margin on each dollar of investment covered by the model, then your efficiency is 63%, before cost of capital. Showing how that efficiency improves over time will demonstrate good stewardship of company resources. Just be sure to keep the measurements consistent as market conditions (e.g., media rates, competitive activities, etc.) change.

Return on Important Initiatives

If there are one or more big-spending initiatives in your marketing plan like a substantial overhaul of your Web site, a new packaging launch, or just a big direct-marketing campaign, it may be appropriate to post the overall return for that project separately on your dashboard. If someone had to expend political capital to get the money to spend, you can underscore your commitment to getting the best return for the company's money by putting your progress right out where everyone can see it.

If the project has a target return that will take some time to achieve, consider reporting the work in progress, graphically comparing the present return to the goal in the form of a "thermometer" chart like the one in figure 5.2 below.

FIGURE 5.2 — PROFIT RETURN ON "PROJECT SPECTRE"



Program/Non-Program Ratio

This metric gives you the opportunity to look at the allocation of marketing resources to value-creating activities vs. overhead. Think about how charities are evaluated on the percentage of total funds raised that are distributed to the targeted recipients as opposed to salaries and overhead.

The higher the ratio, the more efficient the operation. The best charities are consistently in the 90%-plus range. What's your ratio? If the total marketing budget is $5 million, of which $4 million is allocated to specific program or campaign costs and $1 million to non-program costs, then your program/non-program ratio is 80%. There's your benchmark. Moving forward, you might set goals to increase that to 90% within two years.

It can be difficult to determine the line between value-creating activities and overhead, particularly when it comes to things like agency fees, payroll, staff development, or other issues. If this metric seems relevant to your situation, have a team develop a proposed delineation between program and non-program expenses and then try to apply it consistently over time. Consider breaking it into three categories instead of two:

- direct program resources;
- indirect program resources; and
- non-program resources.

Where you start from is less important than how well you progress toward your goal and keeping your definitions consistent.

Program/Payroll Ratio

This metric is a simpler form of the program/non-program ratio above. Take the total marketing budget and isolate the non-payroll-related expenses from the payroll dollars (fully loaded if applicable) to get a baseline of how the resources are allocated to customer-reaching activities vs. internal process management. Many marketing departments that do this for the first time are shocked at how high the percentage of total resources allocated to payroll are. It's not uncommon in some multidivisional B2B firms or others that don't do much advertising to find a 50/50 ratio.

Again, there's no particular benchmark for the right ratio beyond the target that you believe is reasonable given your marketing objectives. Importantly, everyone knows this metric can be easily manipulated by spending more money on existing advertising campaigns or shifting personnel from marketing into sales or operations. But if the metric is relevant to you, you'll find a way to define it in a manner that you can consistently apply in search of improvement in payroll leverage.

There might be 50 more metrics on this list based upon your company and industry. Understanding the purpose of marketing efficiency metrics is a good way to start the process of designing your own.

Customer Metrics

Here are a few thought-starters for how the customer might appear on the marketing dashboard.

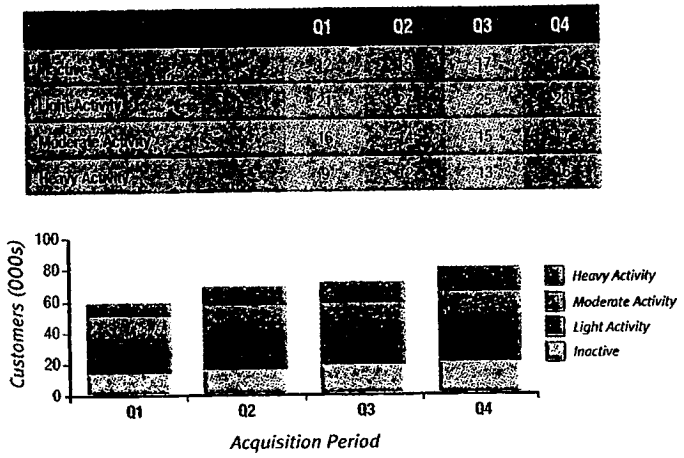
Active Customer Counts

How many of your customers are "active" — consistently purchasing above some minimally acceptable level over time? This measure of customer-base vitality may tell you quite a bit about who is responding to your marketing activities and who is not. Consider looking at cohort groups of active customers by longevity if relevant. For example, what percentage of customers who first bought from you three years ago are still buying at least quarterly? What about those whose first purchase occurred only in the past 12 months? What is the difference between the two and why does it exist? How much are the groups purchasing and what is the product/service mix?

This metric might be even more telling when looked at from a profitability perspective than from a revenue view, but if vitality is really the question, revenue may suffice. If you don't have customer-specific transaction data but find this metric insightful, consider initiating either a panel study or tracking study of customers. Just keep the methodology consistent from period to period and the change over time will be more relevant than the absolute levels. And remember to keep the orientation towards the predictive. For example, let's say that we knew there were 400 plastic-stamping companies who purchased a chemical compound from us that helped keep the plastics malleable. At any given point in time, we know how many of them

our company is doing business with and we have an action plan to increase that number. If we structure this correctly on the marketing dashboard, we will be able to monitor our results against our plan and see if we're projecting to close the gap on time and on budget.

FIGURE 5.3 — ACTIVE CUSTOMERS BY INCEPTION COHORT



Segment Mobility

You can do frequency distributions of customers by *value* — the percentage or actual number of customers contributing different levels of profit or gross margin. Even if you can only define groups of customers in terms of low, moderate, and high profitability, these categories will give you more insight than topline revenue breaks.

You could also do frequency distribution of customers *across product lines*, meaning that you'll begin to track customers that are only buying one product during a time period vs. others who are buying two or more. Customer longevity is another option that gives you a broader picture of how well you're keeping customers in the fold.

Some companies develop combinations of value metrics that place customers into multidimensional segments that describe current and potential future value. RFM (recency, frequency, and monetary) analysis is the most common approach. Others use different combinations specific to their own circumstances. If you have a segmentation

scheme that provides insights into future customer value (particularly in bottom-line terms), use it. Show how the customer base is migrating from one segment to another (hopefully more profitable) one. This is called segment mobility. See the example in figure 5.4.

FIGURE 5.4 — SEGMENT MOBILITY

Net Change in Segment Count vs. Forecast

From Segment: \ To Segment:	A	B	C	D	E
Segment A	1	4	8	2	1
Segment B	0	4	12	4	-4
Segment C	0	1	0	1	2
Segment D	0	0	1	0	4
Segment E	0	0	0	5	-1

Some even prefer to focus on the velocity of segment mobility — the rate at which customers are migrating from one segment to another. All of these can become tremendously insightful, predictive metrics that forecast the health of the business.

The bottom line here is that frequency distributions are preferable to statements of average numbers because a simple frequency distribution graph implicitly tells you a lot more than an average ever can.

Share of Customer

Share of customer is your percentage of the total business that a customer does in your category. If the customer spends $3,600 a year on groceries and spends $1,200 a year in your grocery store, you have a 33% share of customer. This is another metric that works best in the form of a frequency distribution demonstrating mobility.

Share of customer is relatively easy to apply in categories in which the total annual purchase volume is more certain. For example, in retail gasoline, history has shown that the vast majority of consumers purchase between 1,000 and 1,200 gallons per year. So it's not that difficult to estimate share of customer if you know how much they purchased from you. But if you don't have transactional data on your customer's purchases or don't know what the likely total

consumption volume is, you'll need to explore panel studies or survey techniques to develop estimates and then measure improvements over time using a consistent methodology.

Customer Loyalty, Repurchase, or Referral

There are lots of ways you can define "loyalty." Loyalty can be defined transactionally, meaning a person purchased from your company a certain number of times in a given period — a.k.a. the repurchase rate. Or loyalty can be defined emotionally, pointing to those customers who express a preference to do business with you in the future.

In the case of the former, you might choose to use dashboard metrics that portray the number or percentage of customers who purchased once, twice, or three-plus times in the last quarter vs. forecast and the prediction for the next few quarters. Or, if you are limited to survey data on attitudes and intentions, you might choose to highlight the percentage of respondents indicating top box or top two box answers to purchase intentions and look at:

- how this most recent survey compares with prior surveys and the forecast response for this time period; and
- how the expectation for the future may change.

Customer Experience Monitors

Here we get into the measurement of how consumers tell us they're happy or unhappy with what we're doing. They include the following:

- **Satisfaction levels:** Satisfaction measures are always great candidates for a dashboard because they demonstrate information everyone wants to know. The trick, though, is to express this information predictively. Some companies are finding that one simple question is accurately predicting customer repurchase rates: "How likely are you to refer a friend or family member to do business with us in the next few months?" If that simplicity works for you, the answer to that one survey question can be a very predictive dashboard metric once calibrated.
- **Quality perceptions:** Perceptions of quality are a terrific way to measure part of the customer experience. Understanding where you are meeting, exceeding, or falling short of expectations can help identify ways to improve the price/value relationship and decrease customer price elasticity.

- **Order-cycle completion:** This is the time it takes from the minute you receive an order from a customer to the time that order leaves your factory or reaches your customer's hands — depending on how you define the cycle. Across industries, order-cycle completion tends to be highly correlated with customer satisfaction. It's a common dashboard metric because faster completed order times with accuracy can be easily calibrated over time as being predictive of reorders.
- **Involvement/engagement levels:** Beyond just transactional behavior, profitable customers might have a tendency to be more involved with you or engaged in the relationship. This engagement can take many forms, including responses to customer surveys, providing testimonials, completing customer comment cards, or other alternatives. If you can establish that involvement among your customers and it's predictive of increasing customer profitability, reporting involvement and engagement levels on your dashboard is very appropriate.
- **Repurchase intentions:** Survey-driven findings indicate how likely customers are to repurchase and how much they'll spend when they do. It is important to know that these findings contain margins of error because there is a tendency for the consumer to either overstate or understate their intentions. However, if you survey consistently with the right methodology over time and are able to track the stated intention to the subsequent actual behavior, you can develop a correction factor that you can apply to a stated intention. That will give you a fairly accurate, highly predictive view of how much you're likely to sell to that customer or segment of customers in the future.
- **Compliments/complaints:** This is a test for your inbound channels — call centers, Web sites, etc. The nature, frequency, and magnitude of compliments or complaints are worth tracking on an ongoing basis as long as you can add some predictive value to the measurement.
- **Resolution turnaround times:** When you have a problem, how fast do you fix it? If your company is in a turnaround situation in which you know you have customer issues that need repair, this is a worthy subject to measure.

No company is going to find all of these measures appropriate. But depending upon where you are in organizational sophistication and capability, some of these may be effective metrics for your

dashboard. The whole area of customer experience monitors is often overlooked as dashboard metrics because of concerns that self-reported responses are methodologically suspect. But if you spend the time to develop a good methodology and you apply it consistently, the error factor normalizes over time. In other words, you see the same type and magnitude of error in each iteration of the survey, thereby eliminating the error and leaving only the real trend.

For example, if your Uncle Ernie consistently overestimates the number of loud teenage kids on his block by 5% to 10%, you can rely on his estimates in the future by subtracting 5% to 10% from whatever number he gives you. Likewise, if you find the error rate in self-reported purchase activity among customers is consistent over time, you can calibrate it to actual purchase activity with a high degree of confidence. You can use it to be very predictive with respect to future sales.

Return on Customer℠

Your customers are assets. Properly nurtured, they'll improve in profitability over time as they look to you to meet more of their needs. They'll hopefully purchase from you more efficiently and with less price elasticity.

You spend a certain amount of money to attract, retain, and nurture these customers. They in turn not only buy from you, but also refer others to do the same. In some industries, the lifetime value of these customer relationships can be ascertained within reason. When that lifetime value per customer is multiplied by the number of customers, you get a total value of the customer base. The investment you make in securing and defending those customers can then be compared to the change in the value of the base to get a "Return on Customer." For example, if you spent $25 million last year and achieved a net change in customer value of $50 million, your Return on Customer would be 100%.

This is an emerging thought process in gauging asset value. It has many potential challenges for most businesses. But if your company is oriented toward customer value creation, it might be a direction worthy of consideration for your dashboard with two caveats: First, as with most ROI metrics, be careful not to focus on the percentage return. It can be manipulated by reducing spend or claiming growth

associated with marketing that would have occurred without the marketing stimulus. Second, believing that any single all-encompassing metric can consistently and accurately gauge marketing effectiveness is wishful thinking at best.

Brand management is a crucial aspect of marketing effectiveness and we'll dedicate ourselves to brand scorecard metrics in Chapter 6. In Chapter 7, we'll explore some less traditional dashboard metrics that may nevertheless be highly relevant for you.

Conclusion

Marketing efficiency metrics are very common starting places for marketing dashboards. Likewise, most dashboards include some perspective on customer profitability evolution. We've presented some examples of effective metrics in these categories as thought-starters to help you identify relevant metrics for your industry and company. We also underscored the importance of incorporating customer experience metrics as the voice of the customer on your dashboard.

Sources

CHAPTER 6

Putting the Brand on the Dashboard: Building a Brand Scorecard within Your Dashboard

The marketing dashboard is intended to track both the inputs — the marketing activities being undertaken — and the outputs — the financial results generated. If you've followed closely so far, you can see that leaves the possibility of a gap in the middle, which is the asset that's being created beyond the P&L in the mind of the customer.

Measuring the long-term value of marketing in creating customer preference and loyalty for your brand(s) is critically important in determining the return from the investment. Depending upon your industry or category, 50%, 60%, 70%, or more of your marketing expenditures may be in support of programs and initiatives that cannot be shown to have short-term effects on incremental profits, but *can* be shown to improve the health of the brand in the marketplace. But if this "brand health" isn't something we can easily translate into forecast profits this year, we need to treat it as an asset — something that generates positive returns over a longer period of time.

This is where a brand scorecard comes in. The brand scorecard tracks the health of the brand in the minds of the customers. Whereas the marketing dashboard tends to look at things more from the company's point of view — "What investments are made in programs and initiatives and what I should expect to get out in terms of customer behavior?" — the brand scorecard asks, "What do our major constituencies of interest think and feel about our brand and how well is our brand supporting our desired value propositions?"[1]

In a comprehensive marketing dashboard, the brand scorecard stands somewhere in the middle between the inputs and the outputs.

Let's take a look at what the critical elements of a brand scorecard are, how many constituencies it should reflect, and why it deserves to be treated specially within the dashboard.

The Problem with Brand Scorecards Today

There aren't enough of them. That's the problem with brand scorecards today.

If you ask 100 companies to show you their brand scorecard (and we have), 20 will look at you quizzically, another 20 will show you elaborate consumer surveys of brand attribute ratings, and the remaining 60 will pull out a research summary of the latest scores on the classic "hierarchy of effects" waterfall:

- 74% of consumers are aware of the brand on an unaided basis
  - 61% indicate an overall favorable impression of the brand
    - 47% indicate a willingness to try the product

... and so on.

The problem with this typical waterfall is that it never actually connects awareness or preferences to value creation, and as such is seen by the CFO and the rest of the finance department as "marketing mumbo jumbo" used to justify spending money.

Awareness is a not an achievement unto itself. Each of us is personally aware of a great many companies that we know nothing about. We don't know what they make or do, and even if we do, we have no clue as to why we might want to buy their product or service. We may have an awareness of these companies, but no *salience* to that awareness that places it into a proper context for us.

Salience itself may have multiple levels. I may know IBM makes computers, but I may not know they make the kind of Web servers I need for my company. Or maybe I know they make Web servers, but I think they offer solutions only in the high-performance/high-priced end of the market.

Preference also has many potential dimensions and degrees. I may prefer to drive a Jaguar, but have no realistic hope of ever being able to afford one. I might thereby "prefer" the Hyundai to the Kia, but do I really "prefer" the Hyundai?

The aforementioned example indicates how brand preference is of little value absent the proper context. My preference for a given brand should be measured within the context of those that are physically available to me and within my affordability zone. Preference should also be measured in a temporal context — relative to the point in time when I am most likely to translate my attitudes into behavior and buy.

When it comes to willingness to try the brand, the wheels really come off. Just because I'm willing to try it doesn't mean I ever actually will. Maybe if I get a coupon for 50% off I'll consider it, but if it's not available where I normally buy, my willingness is strictly theoretical.

Purchase intentions are only valid when the prospective customer has the appropriate salient awareness, knows where to buy the product, understands what the tradeoffs are within the competitive set, and has the money and desire to act. Only then are the intentions appropriately qualified.

There's little doubt that salient awareness, contextual preference, and qualified purchase intentions *can* be valuable indicators of the potential economic value of the brand. But until they are unlocked and flowing freely from the minds and hearts of the customers to their wallets and into our company treasury, we must find a way to measure them for what they are: Assets. Good intentions. Accumulated goodwill toward the brand that has not yet translated into a financial outcome.

> *A brand is a reservoir of future cash flows not yet realized.*
>
> — Tim Ambler, Senior Fellow, London Business School[2]

The role of the brand scorecard within the marketing dashboard is to reflect the evolution of these brand assets and continually gauge the potential value of the demand they represent. For this unique reason, we recommend setting up the brand scorecard as a separate-but-linked portion of the overall marketing dashboard. Doing so helps to highlight both the input/output importance of the dashboard and the asset-nurturing insights of the brand scorecard.

To begin, let's look at the potential cornerstones of any consumer/customer brand scorecard.

Four Key Attributes for the Brand Scorecard

Every company and possibly every brand will have its own view of the most crucial components of the customer's brand decision process. Some choose to use syndicated approaches to brand measurement like Young & Rubicam's BrandAsset® Valuator or Millward Brown's Brand Tracker. Others have developed an exhaustive battery of brand attributes they measure through elaborate tracking studies. Regardless of the approach you are using (or if you're just starting out), the key consideration is to find the elements that are most predictive of the future behavior of prospects and customers.

In general, there are four dimensions of brand measurement that tend to bind the customer to the brand:

- the functional performance of the underlying product or service;
- the convenience and ease of accessing the product or service;
- the personality of the brand (a.k.a. "the one for me"); and
- the pricing and value component.

The functional dimension seeks to measure the customer's (or prospect's) perceptions of the more tangible aspects of their brand experience. Is the product of sufficient quality? Does it work as promised? Is it more durable, more flexible, more efficient, more yellow, more professional, more appropriate to the intended task than perceived substitutes? Each brand is intended to deliver a combination of functional benefits to the user, be it a toothpaste, financial services, or silicone polymers. The brand scorecard should reflect how well these functional elements are perceived by the experience of regular customers vs. the newly acquired customers and how they compare to the perceptions of the imminent prospects vs. those in the target audience at large.

Each brand also has, as part of its fundamental equity structure, perceptions and knowledge about where to buy the product or try the service. Can I get it at my local mass merchant store? Do I buy it on the Web? Will an agent come to my home? The degree to which the prospects are aware of how they would acquire or access the brand

and their perceptions of the acceptability of that avenue are important components of the brand asset value. Likewise, the perspectives of the current customers of the ease of access through the present distribution channels provide an important opportunity to validate or question the current business process.

Brand personality is very important in many categories. As marketers, we all understand how one soft drink might have a different "personality" than another. For many years now, marketing researchers have used personification exercises to get consumers to describe a product as male/female, young/old, progressive/conservative, outgoing/shy. Corporate brands also tend to have key personality traits like "reliable," "trustworthy," "innovative," etc. If you can establish that certain personality profiles, when attached to your brand, increase the likeliness of prospects becoming customers and customers buying more, then those critical elements should be on your brand scorecard.

Last, but certainly not least, brands often exist for one primary purpose — to differentiate competitive offerings and prevent commoditization of the market. Brands are used to imbue certain companies or products with a premium value perception that commands a premium price. In other categories, brands are used to capture the consumer gratitude for being the lowest price provider. In either extreme, or at any point in the middle of that spectrum, every brand has a price/value component to it that is either the bedrock of its success or a competitive requirement to compete effectively. This "absolute price" perception is often worthy of tracking on the brand scorecard.

The second dimension of pricing is the "relative price" — a measure of the extent to which prospects and customers perceive that your brand offers good "value for the money." Continuously gauging the relative price perceptions is an effective way to quickly identify opportunities for market or margin share increases.

The combination of functional, accessibility, personality, and value attributes of the brand often provide a well-rounded picture of how well the brand asset is growing and how much untapped cash flow is waiting to be unlocked.

But you have to do the spade work to understand the links between brand equities and financial success in your category. What is often thought to cause people to purchase — Brand A seems to do the job better than Brand B — quickly goes out the window when the choice is guided by, "I really can't be bothered to think about it. Brand A is available now, and Brand B isn't." If this is common in your category, then some kind of distribution weight or availability of the product can be a more important scorecard metric than one that measures the degree to which the customers believe your brand has a special functional characteristic or has a personality "like me."

Sometimes it's sufficient to have your brand just penetrate the competitive set and then out-execute the competition on distribution or packaging. Knowing what *really* drives your brand category is critical to selecting the scorecard metrics that will be both most diagnostic and most predictive of future success.

This generic framework can be applied across different categories, although the weight of the individual components may actually vary dramatically.

Timing Your Measurements

Another important thing to consider is that brand perceptions aren't static — consumer loyalties can last over a lifetime or end in a few short days. And that often runs counter to a company's own brand perception, which can remain pointlessly unchanged. Most companies, even many with huge research budgets, don't carefully monitor the clarity, or lack of clarity, their brand has with customers and prospects at any given point in time. A brand value proposition that made a lot of sense under one set of industry circumstances may degrade to irrelevance and become a commodity position if it stays too long in one place.

Most often, brand attributes are monitored in large-scale tracking studies conducted in "waves" three, six, or 12 months apart. If your category evolves faster than the frequency of your tracking studies, these periodic reads may provide irrelevantly historical information and present a picture that bears little resemblance to today's reality

— especially when you consider that it often takes four to six weeks from the end of survey fielding until the report gets on your desk.

Many organizations are today migrating towards "continuous" brand tracking, with smaller samples fielded each week or each month that are then read in the aggregate over a rolling six, eight, or 12 weeks. While a bit more expensive, this approach can provide much more timely insights into the shifts of the marketplace, not to mention the potential to measure the impacts of marketing stimulus programs on brand attributes with greater reliability.

The bottom line is you need to clearly know what your brand is and what it means to the target customer. If you don't, you are prone to serious over- or underestimations of your brand strength. One such failure was Reebok's attempt to market a Reebok brand of water. Reebok thought that Reebok stood for health. In reality, it stood for running shoes. Why would anyone want to drink water out a shoe?

Without an effective brand scorecard, you might not have an accurate picture of where your brand stands or where it's headed. With one, you have no excuses not to.

In Search of a Reliable Measure of Brand Equity

By Jonathan Knowles, Senior Strategist, Wolff Olins

Accountability is the new black for marketers. According to a survey taken earlier this year by the Association of National Advertisers (ANA) of 1,000 marketing executives, 66% ranked the accountability of marketing as their number-one concern. A similar study by the CMO Council revealed that 80% of respondents were "dissatisfied" with their ability to measure ROI.

While the desire of marketers to demonstrate that they are allocating marketing investments as efficiently as possible is admirable, they are doing themselves a disservice with their current obsession with ROI. By interpreting marketing accountability solely in terms of a metric of short-term payback, marketers are reinforcing the impression of marketing as a merely tactical discipline.

The bigger question — and the one that will earn marketers a seat at the boardroom table in a way that no amount of ROI measurement can — is whether brands truly are assets that enable the business to generate superior returns over time.

The first point for marketers to recognize is that, to qualify as an "asset" in financial terms, a brand needs to be measured in terms of its ability to generate future cash flow.

The second point is even more important: Value can only be created by changes in customer behavior. Changes in customer attitudes are nice, but in and of themselves they do not generate cash flow.

This means that many of the traditional metrics favored by marketers — awareness, familiarity, and quality — are no longer suitable as measures of brand equity. They still do a good job of measuring the scale of a brand's market presence and the likelihood that the brand will make it into a given customer's consideration set. However, they do a poor job of explaining the final purchase decision, and therefore do not provide a reliable measure of the brand's ability to generate cash flow.

The reason for this is that Total Quality Management (TQM) has driven genuinely bad products and services out of the market. Those that remain are all of satisfactory quality, meaning that the customer now faces a bewildering array of good alternatives. In response to this, the basis for the final purchase decision has expanded from simply, "What will you do for me?" to, "What will you do for me — and mean to me?"

So the third point is that brand equity needs to be measured in a way that captures the source and scale of this emotional augmentation that the brand provides to the underlying

functionality of the product or service. Only such a definition of brand equity will identify the extent of the customer utility that the brand has created.

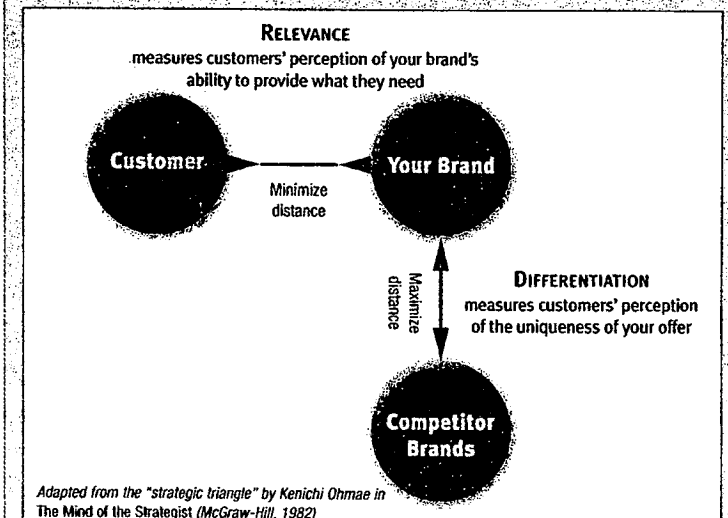
There are two promising candidates for how this equity can be measured:

- The first type of approach measures equity in terms of "outcomes," such as the extent to which customers are prepared to stake their personal or professional reputation behind a brand by recommending it to others or the price premium they are prepared to pay.
- The second type of approach measures equity in terms of the scale and nature of the utility that the brand delivers to customers.

One of the best known examples of the "outcome" type of approach is the work of Fred Reichheld, the author of *The Loyalty Effect* (1996) and *Loyalty Rules* (2001). His simple premise is that "willingness to recommend to a friend" is the single most reliable measure of brand equity. Specifically, your "net promoter" score (the number of people willing to recommend your brand minus those who are not willing to do so) provides an accurate predictor of your company's growth prospects.

In similar vein are approaches that stress "willingness to pay a price premium" as the truest test of the existence of brand equity. And the advantage of these approaches is that they provide a direct input into a valuation model like the "revenue premium" methodology advocated by Professor Don Lehmann of Columbia University.

The limitation of "outcome" approaches is that, while they may accurately quantify how much brand equity you enjoy, they provide limited insight into what creates this equity.



Adapted from the "strategic triangle" by Kenichi Ohmae in The Mind of the Strategist *(McGraw-Hill, 1982)*

The second type of approach tries to quantify the extent of brand equity that a brand enjoys by measuring the degree of "relevant differentiation" provided (although most do not explicitly use this term). Relevant differentiation is an important metric because it measures the success of marketing in terms of the extent to which two goals have been achieved — maximization of the perceived fit between your brand and your customer's needs, and maximization of the perceived differentiation of your brand vs. its competitors. A high relevant differentiation score provides insight into why a certain brand is perceived to be uniquely capable of meeting customer needs.

Following are profiles of a number of well-established brand equity models that seek to identify the scale and sources of brand equity.

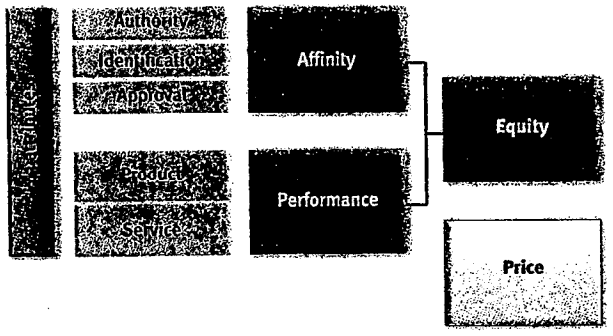
Equity Engine℠

Equity Engine℠, developed by Research International, is one of the most elegantly parsimonious models of brand equity. Essentially, it expresses brand equity as a combination of the functional benefits delivered by the brand (performance) and the emotional benefits (affinity). Underlying each

of these macro constructs is a further layer of analysis that expresses performance as a function of product and service attributes, and affinity as a function of the brand identification (the closeness customers feel to the brand), approval (the status the brand enjoys among a wider social context of family, friends, and colleagues), and authority (the reputation of the brand).

Equity Engine℠ incorporates a form of conjoint methodology that establishes the price premium that a brand's equity will support while still maintaining a "good value for money" rating from customers.

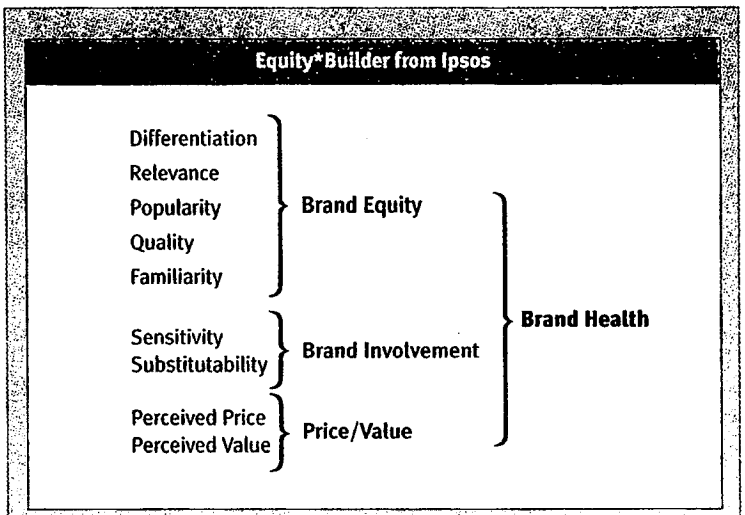
Equity Engine℠ from Research International



*Equity*Builder*

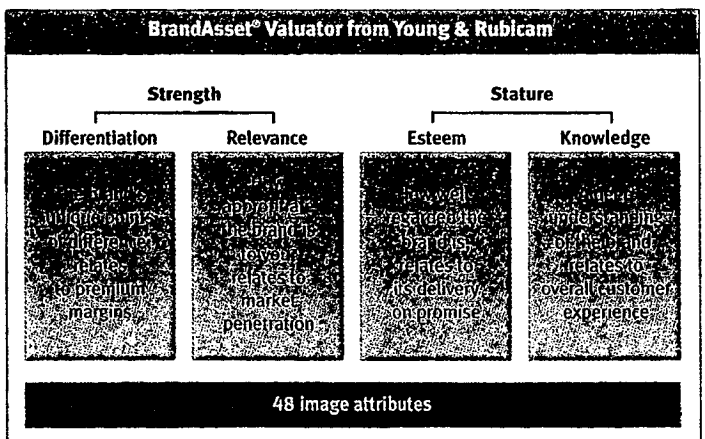
Equity*Builder, the methodology developed by the Ipsos Group, is more uniquely focused on establishing the emotional component of brand equity. Importantly, it situates a brand's attitudinal equity (measured in terms of differentiation, relevance, popularity, quality, and familiarity) in the context of the degree of customer involvement with the category in question.

Similar to Equity Engine℠, Equity*Builder also explicitly addresses how brand equity translates into perceived value and price.



BrandAsset® Valuator

The BrandAsset® Valuator, developed by Young & Rubicam, is noteworthy in that it eschews the category-specific approach taken by other brand equity methodologies and seeks to establish a pure measure of brand equity independent of category context. All 2,500 brands in its U.S. survey are rated on the same 48 attributes and four macro constructs of differentiation, relevance, esteem, and knowledge (curiously similar to the Ipsos approach, which it pre-dates).

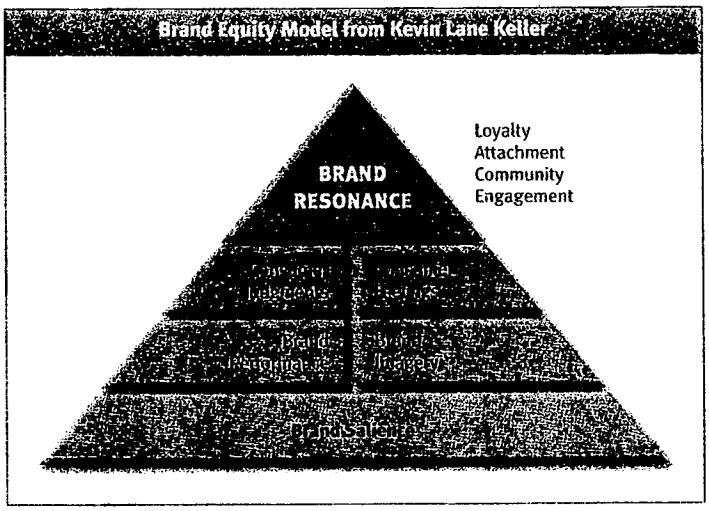


The constructs of differentiation and relevance are then combined into a single metric of brand strength that, through Young & Rubicam's collaboration with the financial consultancy Stern Stewart, has been shown to provide a powerful explanation of superior market value. The constructs of esteem and relevance are combined to form brand stature that, interestingly, is correlated to current market share but not potential for growth.

Kevin Lane Keller's Model

Although not available as a commercial methodology, Kevin Lane Keller's brand equity model is worthy of mention because of his authority within the brand equity measurement arena. (He is professor of marketing at the Tuck School of Business at Dartmouth and recently co-authored the 12th edition of *Marketing Management* with Philip Kotler.)

Kevin Lane Keller mirrors the Equity Engine℠ approach by seeing the brand as a blend of the rational and the emotional, measured in terms of performance characteristics and imagery. Customers' relationship to a brand can be plotted in terms of their altitude on the pyramid of engagement and their relative bias towards a rationally dominant or emotionally dominant relationship.

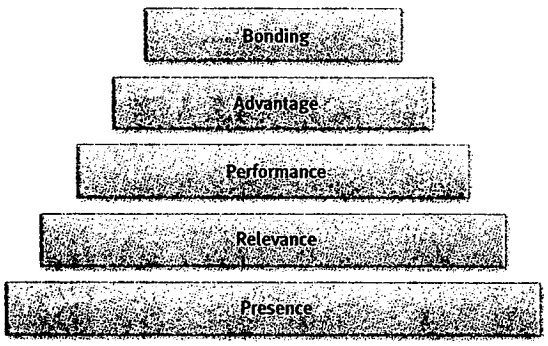


BrandDynamics™

The notion of a pyramid of engagement is echoed in the BrandDynamics™ methodology developed by Millward Brown. This approach characterizes the relationship that a customer has with a brand into one of five stages: presence, relevance, performance, advantage, and bonding. "Presence" customers have only a basic awareness of the brand, while "bonded" customers are intensely loyal, at least in their attitudes. The underlying premise is that the lifetime value of customers increases the higher up they are in the pyramid.

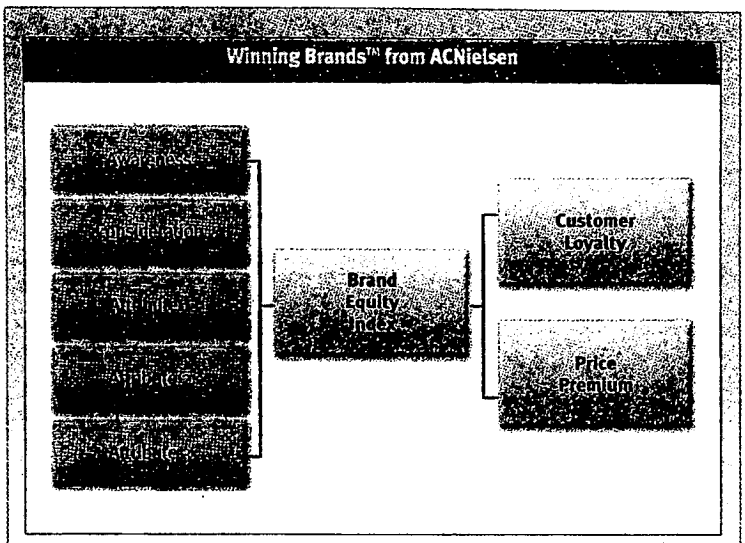
All of the aforementioned approaches suffer from the fact that they are attitudinal in nature and have yet to establish the definitive relationship between measures of attitudinal engagement/loyalty and observed behavior.

BrandDynamics™ from Millward Brown



Winning Brands™

Winning Brands™ is the methodology developed by ACNielsen. In contrast to the attitudinal approach to brand equity measurement embodied in the other approaches described, Winning Brands begins from a behavioral observation of brand equity. Brand equity is measured in terms of a customer's frequency of purchase and the price premium paid. Once favorable behavior is observed, the methodology seeks to analyze the attitudinal characteristics of those customers.



The strategic component of brand development involves the creation and nurturing of a long-lived corporate asset. Of potentially greater importance than a credible ROI model for marketers is the development of a robust methodology for defining and measuring brand equity in a way that meets the financial requirement for an asset, namely that it represents a source of incremental cash flow over time. This means that the focus needs to be on the metrics that capture and explain customer behavior, not simply customer attitudes.

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Brand Value vs. Brand Valuation

To be a useful tool for organizational planning and resource allocation, the brand scorecard needs to go beyond attribute ratings and incorporate a second key measurement — an understanding of brand value.

There's a difference between "brand value" and "brand valuation." Brand value is the strategic and financial value of the brand to your company today. Brand valuation is a financial exercise intended to put a price on the brand over and above the discounted future cash

flows. The difference can be subtle. Tim Ambler of the London Business School uses this metaphor to describe the two: "Since I live in my house and plan to do so for some time, its *value* to me is the shelter and comfort I derive from it. When I'm prepared to consider selling it, I'll be interested in the valuation." Brands work much the same way.

Let's look first at brand value.

Brands create value for companies in several ways:

- They create customer loyalty, resulting in a lower cost of customer reacquisition and greater likelihood of future sales from existing customers.
- They lower the perception of risk the company presents to the financial marketplace, resulting in lower borrowing or financing costs.
- They establish negotiating leverage with suppliers and vendors who seek to be associated with them.
- They establish the perception of continuity of cash flows into the future amongst investors, thereby increasing the multiple over the company book value that investors are willing to pay for stock.

If these dimensions of brand value are relevant ways for you to gauge the potential return you will create by investing in brand development activities, then they should be reflected on your brand scorecard. You may choose to reflect it in competitive comparisons of expected customer lifetime value, perceptions of company "quality" amongst investors and analysts (either through syndicated methods like CoreBrand® or through proprietary research among targeted analysts), an index of company borrowing costs that isolates brand contributions from other marketplace and company variables, or a survey of brand influence within the vendor community.

The most common measure of brand value is one of the difference between market capitalization and either "book value" — the value of the company's total balance sheet assets — or the net present value of expected future cash flows. Unfortunately, it's not often reasonable to assume that the difference is mostly attributable to brand value. Channel dominance, patents and technical advantages,

sales force effectiveness, and other non-brand elements can be responsible for a big portion of the "intangible" value of the company.

Nevertheless, if your category is one in which investments in brand development are less directly justifiable in terms of customer financial behavior in the near term, you may need to incorporate some element of brand value in your analysis. The best advice we can offer is to sit down with your CFO and discuss the ways you might agree on measuring the brand asset. Typically those fall into two classes. The first is made up of top-down models that seek to explain valuation in terms of the lift in share price that the brand gives you over and above what the company would trade at without a brand. The second approach comes at it from the bottom up. Often called the "economic use" approach, this is an attempt to measure how much incremental cash flow the brand provides over and above what you would get with a "generic" product. The two are philosophically very well aligned. One comes from the macro and hopes to explain the micro, and the other hopes to aggregate the micro to explain superior valuation for the company.

"Brand valuation," on the other hand, may be relevant to you if your portfolio of brands includes some acquired from other companies, or if you anticipate selling one or more brands at some point in the not-too-distant future.

Accounting regulations in the United States and many other countries require companies to keep close tabs on the "goodwill" assets they carry on their balance sheets from past acquisitions. If the CFO has reason to believe that any acquired brand is no longer worth its carrying value on the balance sheet, she must take a write-down against earnings on the P&L to revise the estimate of value in a process called "asset impairment."

As a result, companies with acquired brands often need to continually monitor the value of those brands on their brand scorecard to prevent any sudden surprises in earnings.

Similarly, if your company anticipates selling itself in the whole or just selling one or more brands in its portfolio, you may want to begin tracking brand valuation over the period leading up to the sale to understand which potential investments help increase the

valuation and which might actually detract from it. The brand scorecard can be useful in this regard, too.

If you're not marketing acquired brands or planning on selling your own, the remaining reasons to do brand valuation are mostly tax-related or technical/financial and likely not important for a brand scorecard.

DON'T WASTE TIME WITH BRAND VALUATION

By David Haigh, Founder and CEO, Brand Finance, and Jonathan Knowles, Senior Strategist, Wolff Olins

There is widespread acceptance among senior management that strong brands represent significant assets of a business. With high levels of competition and excess capacity in virtually every industry, strong brands enable companies to differentiate themselves and to provide a basis for ongoing customer loyalty.

At the same time, there is a widespread but erroneous assumption that brands need to be valued. The publication of tables of brand values in magazines such as *BusinessWeek*, *Forbes*, and a number of marketing publications has raised the profile of brand valuation but unfortunately has done so without clarifying its purpose.

It is an obvious point but one that bears repeating — the mere act of valuing an asset, whether financial, tangible, or intangible, does nothing to improve its quality. Most companies do not need an answer to the question "What is the value of my brand?" except for the specific purpose of accounting for goodwill after an acquisition. Rather they need an answer to the question "How — and by how much — does my brand contribute to the overall success of my business?" It is this insight into the sources of customer value and the economic cost of delivering that value that will enable them to run more successful businesses. Brand value on its own provides nothing more than bragging rights at corporate cocktail parties.

In light of this, we suggest that companies should begin from the position that they do not need to value their brand(s)

unless they have compelling answers to the following:

- What commercial objective will be served by a brand valuation?
- What is the asset we will be measuring if we do a brand valuation?

What Commercial Objective Will Be Served by a Brand Valuation?

In our experience, there are three basic reasons why a brand valuation may be justified:

1. It is required for accounting purposes.
2. It will inform the terms of a prospective transaction.
3. It will enhance our management of the brand.

Accounting purposes

Since March 31, 2004, gone are the significant differences that previously had separated international and U.S. rules on accounting for business acquisitions. Both U.S. and international rules (respectively Financial Accounting Standard 141 in the United States and International Financial Reporting Standard 3 from the International Accounting Standard Board) require that all identifiable intangible assets of the acquired business be recorded at fair value. This ends the previous practice of treating the excess of the purchase price over the net tangible assets acquired as a single goodwill figure.

Now there is a requirement that this single goodwill figure will be broken down into a number of specific intangible assets, leaving only a small residual amount of unidentified goodwill. The types of intangible assets that are now to be expressly recognized include technology-based assets, such as patents; contract-based assets, such as leases and licensing agreements; artistic assets, such as plays and films; customer-based assets, such as customer lists; and marketing-related assets, such as trademarks and brands.

If you acquired a number of brands as a result of an acquisition, U.S. and international rules now require you to report a

value for these brands on your balance sheet. A recent example is the acquisition of the Miller Brewing Co. by South African Breweries. The Miller brands represent $4.5 billion of the $6.5 billion of intangible assets that appear on the SAB Miller balance sheet for 2003.

Transactional purposes

The second circumstance in which a brand valuation may be justified is to inform the terms of a prospective transaction. The transaction may be internal or external.

The two most common types of internal transactions involving brands are securitization or tax planning. Securitization involves raising funds against the security of future revenues, such as the $55 million that David Bowie raised in 1997. The "Bowie bonds" were backed by the future royalties anticipated on his pre-1990 records. Despite a lot of discussion, brands have rarely been used as the collateral in asset-backed securities.

Brand-based tax planning is, by contrast, a relatively common practice. Companies transfer the ownership of their brand and other intellectual property assets to a central holding company. The central IP holding company then charges a royalty for the use of these assets to the operating companies, enabling a portion of the profits of these operating companies to be shielded from local taxes. Obviously, the fiscal authorities require demonstration of the value of the brand asset that provides the basis for these royalty payments.

External transactions involving brands usually take the form of acquisitions of branded companies or of licensing of brands from third parties. In each case, commercial due diligence is required to verify the economic value of the asset being acquired or licensed and to inform the discussion over the deal terms. In the case of acquisitions, the knowledge that accounting rules now require allocation of the purchase price between the different types of assets acquired has heightened the significance of the preacquisition due diligence process.

Management of the brand

The third commercial purpose that can be served by a brand valuation is the one that offers both the most opportunity for value enhancement and the greatest danger of wasted effort and expense.

In contrast to the technical and financial applications of brand valuation outlined here, in this case, the purpose of the valuation is purely to improve marketing's effectiveness. In theory its goal is to measure the extent to which brands enhance the underlying business performance and valuation of the company. In practice, the valuation model often gets subverted and used for defending marketing budgets.

The second major source of danger is that a brand valuation for marketing purposes requires greater thought about the nature of the asset being valued. Brand valuations for technical and financial purposes generally focus on a narrow definition of brand as the bundle of legally enforceable intellectual property rights that the brand owner has established. These center on the trademark itself but frequently also encompass the associated goodwill that the brand enjoys among its customers.

The specific details of the extent of the assets covered in the acquisition of a branded company were powerfully illustrated by Volkswagen's acquisition of Rolls Royce Motors for $667 million in 1988. The acquisition included all of the physical assets of the production of Rolls Royce and Bentley automobiles. But BMW, in a separate transaction, acquired the rights to use the Rolls Royce trademark in automobiles for $62 million.

Where a brand valuation is being contemplated for marketing purposes, considerable emphasis should be placed on determining the nature of the asset being valued.

What Is the Asset We Will Be Measuring If We Do a Brand Valuation?

In our experience there are three distinct definitions of the asset, all of which are sometimes referred to as the brand.

A logo and associated visual elements. This is the most specific definition of brand, focusing on the legally protectable, visual, and verbal elements that are used to differentiate one company's products and services from another's and to stimulate demand for those products and services. The main legal elements covered by this definition are trade names, trademarks, and trade symbols.

However, in order to add value, trademarks and trade symbols need to carry "associated goodwill" in the minds of customers based on the experience or reputation of high-quality products and good service.

A valuation based on this definition of brand is more properly called a trademark valuation.

A larger bundle of trademark and associated intellectual property rights. Under this definition, "brand" is extended to encompass a larger bundle of intellectual property rights such as domain names, product design rights, trade dress, packaging, copyrights in associated colors, smells, sounds, descriptors, logotypes, advertising visuals, and written copy.

Some commentators have interpreted the intellectual property rights included in the definition of brand to encompass tangible as well as intangible property rights (for example, to include the recipe and production process in the case of Guinness). This more holistic view is consistent with the opinion that brand is a much broader and deeper experience than the logo and associated visual elements.

This is the definition of brand that is generally intended when talking about a brand valuation in a marketing context.

A holistic company or organizational brand. The debate as to which intellectual property rights should be incorporated into the definition of "brand" often leads to the view that brand refers to the whole organization within which the specific logo and associated visual elements plus the larger bundle of "visual

and marketing intangibles" and the "associated goodwill" are deployed.

A combination of all these legal rights, together with the culture, people, and programs of an organization, all provide a basis for differentiation and value creation by that organization. Taken as a whole, they represent a specific value proposition and foundation for strong customer, supplier, and staff relationships. This definition of brand serves as the basis for a branded business valuation. This broader perspective on the business is of significant value to those with strategic planning responsibilities. It illuminates the principal value drivers of the business and identifies how brand perceptions and preferences affect consumer purchase behavior and enrich staff and supplier relationships. As such, it makes a substantive contribution to understanding the sources and scale of a company's competitive position. It quantifies the size of the asset that the brand represents and — perhaps more important — identifies ways in which the value can be enhanced.

Going for Substance over Style

It comes as a surprise to many business professionals that the majority of brand valuations are performed for purposes other than marketing. But, as we have outlined here, there is a demonstrated commercial purpose for brand valuation in the context of accounting, tax planning, and commercial due diligence. Brand valuation for marketing purposes suffers from some muddled thinking.

Most senior marketers embrace the idea of value-based brand strategy and see brand valuation as a means to this end (and a basis for a compelling presentation to the C-suite). We applaud this goal but still advise caution before valuable resources are committed to a brand-valuation exercise. The process of valuing intangible assets such as human capital or brands is fraught with issues of definition, methodology, and measurement, with the result that the exercise frequently fails to deliver the expected benefits. For this reason, we recommend that significant thought be given to the interrelated issues of the

commercial goal that will be supported by the brand valuation and the definition of "brand" to be used in the valuation.

Doing so will avoid some of the most frequent issues that arise due to the need to reconcile the economic, management reporting, and accounting perspectives on brand. It will also clarify whether the goal of value-based brand strategy and management might not be better served by devoting resources to better understanding the sources of customer value and the relative strength of a brand's equity rather than to brand valuation.

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Measuring All the Relevant Constituencies

As you might tell from the previous discussion of brand value and valuation, when we set up a brand scorecard we need to monitor the health of the brand with at least four key audiences: customers, employees, relevant society at large, and investors. Your circumstances might dictate including additional constituencies such as channel partners, agents, regulators, etc.

A good scorecard should cover employee perspectives on the brand, as well as customers and prospects. It's particularly important in service and retail industries, as associates are increasingly asked to play ambassadorial roles. Many companies consider the entire associate population to be "brand managers" as they define the ultimate customer brand experience in their attitudes and actions. Elements like brand understanding, pride of association, and referral willingness or behavior are terrific indicators of the quality of brand equity amongst the employee population.

Depending on the nature of the product or the company, you might also look at societal perspectives on the brand. Society is the place where the brand and corporate reputation intersect. Is the brand considered to be a good corporate citizen? Is it known as an active, contributing member of the community? These measures are often seen to be like placing water into buckets in advance of a fire breaking out. When something adverse happens in the marketplace — like

a chemical truck overturning, a microscopic contamination of a food supply chain, or product tampering on a wide scale — the media will relentlessly whip consumers into a frenzied call for heads to roll. If you haven't stored up goodwill within the community, one minor event can spiral out of control and cost billions in lost sales and market value.

Similarly, you may need to keep water in the bucket of regulatory agencies just in case a fire breaks out in the legislature. If your long-term plan anticipates petitioning these bodies for permission to do business in new ways or raise rates at some point in the future, you'll want to ensure the field has been suitably fertilized before you plant those seeds. This can be a significant value lever for the company and a very tangible competitive advantage.

The investor perspective is also often critical. Not only is it related to the short-term cost of borrowing as we discussed above, but somewhere built into the investor's perspective is the quality of management. This is where lists like *Fortune*'s "Most Admired Companies" come in. While this is often a lagging indicator (behind customers and employees), it is nevertheless highly correlated with premium company valuation.

Companies who depend upon their broadly known corporate brand (e.g., Home Depot, Wal-Mart, or Citigroup) should constantly measure the societal corporate reputation space. It doesn't matter too much how Tootsie Roll is regarded by society at large, but if you have 300,000 employees, you are very visible in the community and will need to have public opinion on your side at one point or another.

In regulated industries, it may be government agency opinions that count. Brand equity represents a very pragmatic understanding of how much influence this company has among people that matter. And those people may matter because they're able to influence regulation or they may matter because they influence decision making in terms of investments. Arthur Andersen is a good example. This was a company that had spent all their energy generating goodwill with their customers. But when they found themselves in the midst of a public relations firestorm, they had no water in the buckets of positive brand equity among the societal and investor communities.

When you look at the strategy General Electric described in a recent article in *Fortune* magazine, Jeff Immelt, the chairman, identified three things he wants GE remembered for: innovation, efficiency, and virtue.[3] Here's a company that understands the multidimensional game in which it is engaged. When the stakes are that high, reputation becomes a kind of currency that gives you permission in a corporate sense in the same way your corporate brand gives you permission in a consumer sense. If your CEO has emphasized the importance of any or all of these additional constituencies in your company's success plan, be sure to reflect the important diagnostic and predictive elements of it on your brand scorecard.

CASE STUDY

THE ELI LILLY APPROACH: USING A BRAND SCORECARD TO ADVANCE THE CORPORATE BRAND

There's no doubt that pharmaceutical brands have become household names, especially since drug manufacturers started advertising their latest cures directly to consumers. Any TV watcher can tick off a list of popular medicinal remedies, from Allegra to Viagra, from Prevacid to Prozac. But the labs behind labels rarely come to the consumer's mind. Why? Because pharmaceutical marketers have neglected corporate branding.

Eli Lilly and Co. decided to put an internal push behind its corporate brand as products like Cialis, an erectile dysfunction medication, entered the dialect of drug therapies and other promising pharmaceuticals filled the company's R&D pipeline. Their reasoning was that a strong corporate brand lends credibility to new and competitive products, and few industries today experience the cutthroat competition that pharmaceuticals do. Pressure comes not only from other pharmaceutical developers but from the Food and Drug Administration and Medicare, as well as the managed-care organizations and health insurance providers that control its marketshare.

For four or five years, Lilly executives counted the building of a corporate reputation among their top organizational initiatives and discussed the coming brand-to-action process with employees at all levels.

Constituency Research

In 2002, Lilly conducted research about the perception of its brand

from the inside out. It wanted to use employees to activate the corporate brand, so it supplemented standard customer satisfaction results with the insight of Lilly's workforce. Once it set its aims against employee reports, it launched internal training sessions led by senior managers across the business to teach employees how to act in accordance with the emerging corporate brand. It wanted their behaviors to reflect customer desires of an experience with Lilly.

Additional research conducted through this process gathered the impressions of physicians and managed-care organizations to understand how close Lilly was to delivering on its newly defined brand promise and where its commitment didn't seem evident at all.

The Eli Lilly & Co. corporate brand has four platforms on which it acts:

- *developing breakthrough products;*
- *owning medical expertise;*
- *listening and responding actively to customers; and*
- *being reliable and trustworthy in all business practices.*

The Brand-to-Action Process

Once employees completed the brand-to-action training, they went forth with new objectives that were measured by group and accessible to brand managers and the 27 top executives on a brand health scorecard. The findings were reviewed quarterly.

Employee surveys solicited information on the effectiveness of the training, asking:

- *Have you heard about Lilly's corporate branding initiative?*
- *Have you attended training on it?*
- *Has the training made an impact on the way you do your job? If so, how?*

The results exposed the brand champions and the slackers among senior management to Sherrie Bossung, manager of the corporate brand, and the corporate suite. Eighty percent of employees responded positively to the survey, confirming their exposure to the brand plan and their involvement in bringing it to the market. But that alone did not signal improvement in the organization's branding.

Employees subsequently answered questions on the value of the training to their everyday responsibilities and on their ability to make a difference in market perception of the brand.

Governance Structure and Rollout

What surprised the corporate branding team was that the more employees learned and understood the corporate brand, the more they challenged their managers and the senior executives on corporate brand strategy and implementation. Front-line employees long had seen where the Lilly brand fell short on meeting customer expectations but had little success in convincing senior management of external

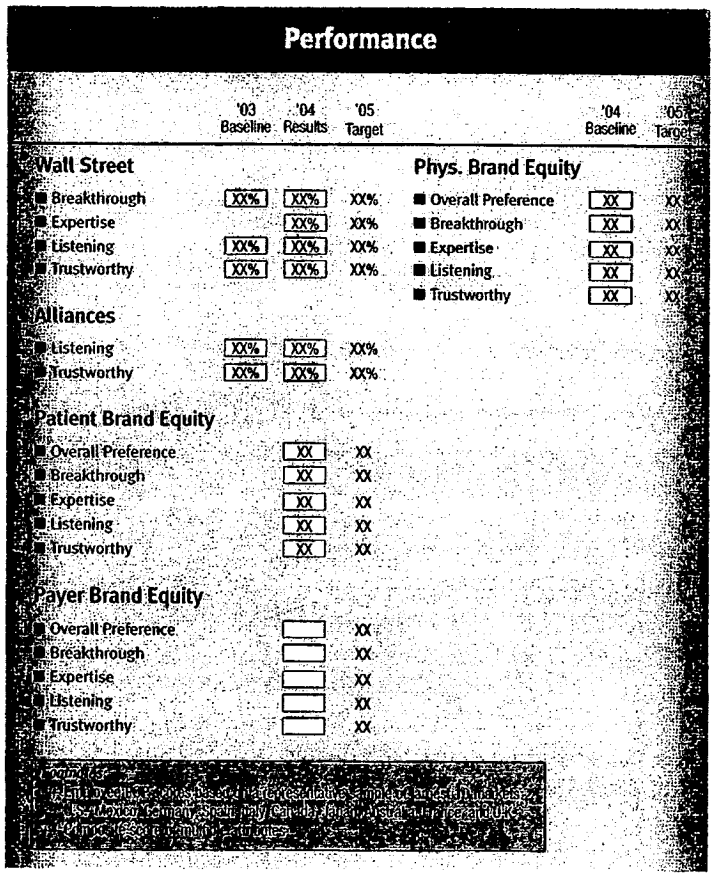
FIGURE 6.1 — ELI LILLY'S BRAND SCORECARD

Outputs

	(% favorable) '02 Research	Dec. '03 Results	'04 Target Revised
Employee Awareness/Perceptions			
■ Recall All Four Attributes+		XX%	XX%
■ Recall of Breakthrough Products+		XX%	
■ Recall of Medical Expertise+		XX%	
■ Recall of Active Listening and Responding+		XX%	
■ Recall of Reliable and Trustworthy+		XX%	
■ Recall of Tagline+	XX%	XX%	XX%
■ Belief Lilly Is Living the Brand++		XX%	XX%
■ Perceived Value and Impact++	XX%	XX%	XX%
Employee Brand Action			
■ Seen Changes in Int'l/Ext'l Interactions++	XX%	XX%	XX%
■ Brand Event Participation		XX%	XX%
■ Impact of Brand Emphasis on Job		XX%	XX%
External Focus			
■ External Focus Metric		XX%	XX%

disappointments with the company. Once Lilly defined its identity and enlisted employees to build it in the marketplace, reps and researchers and all the others whose input was sloughed off previously had a greater ear into which to shout the complaints they heard.

The corporate branding initiative not only enlarged the ear of Lilly's leadership but the eye of it, too. Where the company once saw only numbers — sales revenue — it began to see the progression of the sales process. And this eye-opening led to expanded metrics, including measures of the impact of product success and the influence of the brand on customer relationships. Lilly realized that while it may



have made its numbers with some accounts in the past, it had hurt its customer equity.

Looking Inward: Eli Lilly's Scorecard

Senior management has changed its focus as a result. The company of scientists and analytical thinkers had to see data and numbers attached to brand influence before they took brand and customer equity seriously. Just a couple of years ago, Lilly didn't measure corporate brand equity at all and rationalized each weakness exposed by customer satisfaction surveys as a market fault, not a Lilly problem. The use of a dashboard has cemented dedication to the corporate brand and Lilly has launched additional workshops that attempt to change market perceptions of the company through better employee training and empowerment.

More recently, Lilly's marketing strategy folks have merged the brand health scorecard onto a dashboard that also tracks product equities. In this first marketing cycle with the tool, they look in tandem at what people think of their products as well as what they think of Lilly, mapping both to sales trends, and develop strategies that advance the performance of the entire equation rather than improving product sales at the expense of long-term customer and brand value. These strategies include customer segmentation and account-specific marketing messages that reflect the needs and wants of individual customer relationships.

This new, personalized voice motivates greater sales and encourages customers to see value in Lilly, not just its products. It has turned the process of marketing products into the practice of marketing the corporation, which can be leveraged to build product brands.

Lilly's corporate brand speaks to several constituencies, not just customers. It has acted as an internal change agent, affecting employees and increasing their confidence in and loyalty to Lilly. It has benefited Lilly's recruiting efforts, drawing potential employees to Lilly as a caring, innovative, ethical place to work. It has aided the formation of new alliances with biotech firms. And it has engaged managed-care directors who now see Lilly as a trustworthy and reputable firm.

Finding the Drivers of Success

Now that you have the framework for the many dimensions of brand equity that might be important in creating asset value, how do you tell which ones are the most predictive of financial outcomes? The most common approach is attribute correlation and covariance.

To begin, let's say you have a tracking study out in the market in which you've identified 15 key brand attributes and have a sampling of customers and prospects rating your brand vs. competitors on each attribute. You survey 100 people each month and read the results on a rolling three-month basis.

Your tracking study should include gathering self-reported information on the volume (and/or type) of purchase activity each respondent has had in the category for the past month, quarter, year — whatever timeframe is relevant to purchase cycles in your category. You are interested in understanding the purchase patterns across you and your competitors.

Now, using statistical regression techniques, you can correlate brand attribute ratings to purchase activity or purchase intentions to identify the attributes that are most strongly associated with increased category or brand purchase behavior.

Simple, right? Hardly.

There are a great many places where this approach can get derailed or become seriously misleading.

First off, self-reported purchase behavior can be significantly different from actual purchase behavior. Sometimes, people forget how much they bought and which brands. Other times they tell little white lies to protect themselves from the judgment of others (even the interviewer). If you can connect a specific individual's survey responses back to that person's actual purchase behavior as reflected in your transactional files, you can close the gap somewhat. If not, you might consider conducting a separate study specifically among a group of category consumers and check to see how self-reported behavior varies from actual purchases, then use that as an error factor to adjust what you get from your tracking studies.

Second, attributes are commonly "lumped" together by consumers into positive and negative buckets, making it difficult to see any one attribute as a real driver to a greater degree than others. This is the covariance effect — a statistical term indicating the extent to which two or more elements move in the same direction. Sometimes it's helpful to group attributes with high covariance into "factors," or higher-level descriptions. For example, the attributes "offers good value for the money" and "is priced competitively" might be grouped into a factor called "price appeal." As long as you aren't grouping so many attributes together into a few still undistinguishable factors, you can still get a strong feeling for which elements of the brand scorecard might be most important.

There are many more ways that this process can become subtly misleading. If you're not a research professional or statistician, you might consider consulting one of each in your methodology design. But, time and again, interviews with researchers suggest that the best approaches start with exhaustive qualitative research among customers and prospects to identify the possible list of driver attributes and articulate them in ways that are clear and distinct to survey respondents.

Done correctly, this effort can help focus the brand scorecard on the specific aspects of brand equity that have the greatest potential to drive incrementally profitable customer relationships. Find those nuggets, and you've got the makings of a powerful brand scorecard.

Permission: The Brand Frontier

One final candidate for a well-rounded brand scorecard is brand permission. Permission is the degree to which the target customers would be receptive to seeing the brand associated with new or related products or services. Earlier, we raised the example of Reebok and water. Reebok had no consumer permission in the water category, but they may have had a great deal of it in exercise equipment, non-apparel sporting goods, or even publishing.

If you have a desire to identify ways to extend a powerful brand into new areas, your brand scorecard should measure the degree to which the target customer is receptive to the idea. This is also captured through surveys, and subject to the same challenges as the surveys discussed above. Just because the consumer says they think

your brand could add value to their perceptions of diesel engines doesn't mean they'll switch. But if it's critically important to develop permission in one or more areas of strategic interest, then it's probably worthy of including on your brand scorecard (along with volumetrics) as a leading indicator of potential developing sectors.

Conclusion

The brand scorecard tracks asset development that often lies between spending and profit realization. It points to the leading indicators of future profits to be realized in terms as specific as possible. This uniquely complex responsibility warrants a separate-but-linked position within the marketing dashboard where the predictive elements can be refined in the context of all the other critical learning, and not isolated as a series of "intermediary" metrics expressed in marketing mumbo jumbo.

An effective brand scorecard includes:

- customer and prospect perceptions of the most meaningful brand attributes, often including those relating to functional attributes, availability, personality, and price/value;
- perspectives of other important constituencies including employees, the community, regulators, and the investment community;
- measures of brand value to gauge the longer-term component of value created by brand investments; and
- some reflection of brand valuation monitoring for acquired brands or those likely to be sold at some point in the foreseeable future.

Sources

1. *MarketingNPV Journal*, vol. 2, issue 3.

2. Ambler, Tim, Senior Fellow, London Business School.

3. Gunther, Marc, *Money and Morals at GE*, *Fortune* magazine, November 15, 2004.

CHAPTER 7

The Metrics You're Most Likely to Forget

The greatest insight often comes from unexpected places. We think that's true of the mixture of metrics you'll eventually select for your marketing dashboard. In Chapter 5, we covered the more conventional examples of metrics that you might install after customizing them to fit your business. In Chapter 6, we discussed the brand metrics best depicted on the brand scorecard. In this chapter, we'll examine some critical metrics you may not have considered for your marketing dashboard but that may be among the most insightful and predictive you'll install.

There are quite literally hundreds of prospective dashboard metrics to consider, but only a few that will provide any leading-indicator insight. The goal here is to point out some of the places where we normally find high correlations to company profitability. Some of these measures are often viewed as tangential to "marketing" but are, in fact, very much related to the quality and effectiveness of marketing activities. Others are frequently dismissed as "softer" measures, but are nonetheless critical to a foundation of success. Keep in mind, only you can determine which of these are right for your dashboard.

Let's begin with one of the most often overlooked areas: channel management.

Channel Metrics

If you have various distribution channels for your products, then your success is largely dependent upon the strength of those channels. The right channel metrics can monitor your progress at shaping,

influencing, and managing your business to ensure the end customer is getting the best brand experience and you are getting the best return on your channel investments. Here are a few potential channel metrics to consider.

Channel Coverage

If you're selling wireless phones through independent retailers, you'll want to make sure you're covering all the places where people are buying those phones. Companies that manage their distribution chains contractually — through independent agents, sales representatives, or other partners that help them get business done — can get clarity on prospect reach and market penetration from a dashboard metric on this issue. It can be even more forward-looking if coverage incorporates prospective channel partners in various stages of finalizing agreements and building out facilities.

Channel Relationship Mix

With the level of decentralization and outsourcing in business today, companies may not have full control over the players who staff their distribution channels downstream. Major oil companies like Shell and ExxonMobil don't manage every stop on their distribution chains anymore, but they still have to keep track of how their products are selling at the consumer level. Monitoring the evolving mix of channel relationship types helps to keep the focus on the strategic importance of channel leverage strategies.

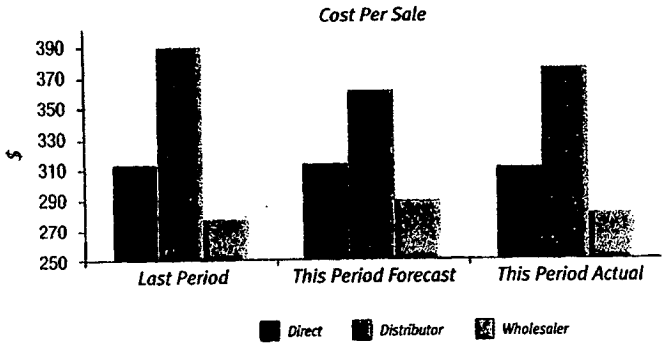
Relative Channel Performance

When you have multiple types of channels, you can often structure ways to look at marketing returns by channel — which gives you a view toward opportunities to optimize investments across channels. You might, for example, find that the cost-per-sale in one channel is significantly lower than the others. This raises the question of how much more money could be spent in selling through that channel before the returns begin to diminish (an optimization challenge). Monitoring these relative channel performance measures can provoke key questions about how resources are being allocated and help forecast the need for revitalizing efforts or planning capital investments.

Channel Stock Positions

Stock-outs can be a critically limiting factor to growth. Customers get annoyed when they go out of their way to come in only to find

FIGURE 7.1 — RELATIVE CHANNEL PERFORMANCE



you're out of something they think you should have. The loss can be permanent. If monitoring and forecasting in- and out-of-stock ratios is crucial to your business, then it's relevant for your dashboard. The forward-looking component of this measurement relies on good sales forecasting (see Chapter 3) to help you spot problems with your inventory before they happen. It can also help you better manage the range of merchandise you carry and watch your inventory turns more closely.

Channel Perceptions of Marketing

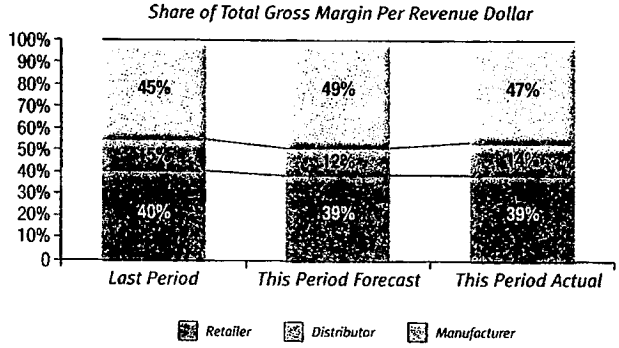
There's been very little dashboard activity in this area to date, but this is a measurement category worthy of careful consideration. Many of the same companies that spend millions on research to understand customer and employee views spend nothing on capturing channel perspectives. This is not only crucial to businesses like fast food franchisors and automobile manufacturers who must coordinate local marketing activity with regional co-ops of franchisees, but can be equally important to manufacturers of all types selling through Lowe's, Target, or other retailers for which the opinions of the category buyers and the sales floor associates can make or break marketing effectiveness. It's also important to industries that distribute through agent networks, wholesalers, or independent sales organizations.

Channel Power Measures

There are a number of different ways you can measure channel power, but the most compelling is how much margin you're keeping

vs. your channel partners. If the markup to the final consumer is greater than the wholesale markup, it stands to reason that you have ceded some significant power to the channel. Reclaiming some of that margin is a worthy pursuit for marketing and monitoring and forecasting channel power gives you some sense of how effective you are at changing bottom-line performance through brand building or product innovation.

FIGURE 7.2 — CHANNEL POWER



Organizational Metrics

In Chapter 3, we introduced you to the strategy map as a tool for aligning the role of marketing with the company and clarifying the requisite business processes, information flows, and organizational skills, tools, and culture.

It seems paradoxical, therefore, that the same companies that spend millions of dollars each year on training and development completely overlook marketing organizational effectiveness on their marketing dashboards. We don't hear too many arguments that the relationship between employees and customers is critical to the business, nor do we hear anyone bemoan the value of a better-skilled, more efficient workforce. So if it's really important to you that your organization is staffed with the right people with the right skills focused on the right things, you should be looking for dashboard elements to measure your progress.

But which organizational dashboard metrics tell you the most? The following are just a few examples.

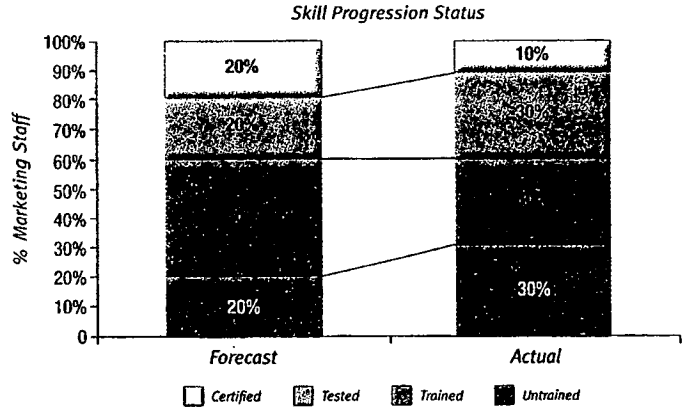
Staffing Considerations

A dashboard can highlight whether you're working at full complement and deploying the available capital effectively. You might elect to reflect this as a simple percentage of approved headcount filled, or perhaps segmented on a percentage basis by newly filled vs. trained vs. highly experienced people. Or you might choose to be more forward-looking by monitoring hours worked by current staff vs. approved complement as a means of forecasting overtime costs or just highlighting potential staff burnout by correlating total hours to historical and forecast turnover or tenure rates.

Another important dimension of staffing is skill sets. Many companies emerge from the strategy-mapping process with great clarity on the skills their department will need to hit its objectives. They then engage a training company or university to develop a curriculum to improve the specific desired skills either broadly across the marketing organization or in narrow pockets of specific expertise. Using the dashboard to monitor penetration of your target employees that have achieved the requisite or desired level of training, education, certification, or skill proficiency is mission critical and very appropriate. Skill proficiency is actually a great metric for the dashboard if you believe that training is a forerunner for success.

Succession eligibility is another great monitoring metric for the overall health of the organization. There are two ways to view succession eligibility: first, as the percentage of your senior staff who have

FIGURE 7.3 — SKILL PROFICIENCY



groomed replacements ready to step in for them, or second, as the overall percentage of marketing staff who are ready to step up to the next job if they had to. Either of these can be presented in stages of readiness ranging from not-at-all to ready-to-go, which will give you a more dimensional feeling for the progress your organization is making.

If success in your organization is directly related to employee proficiency and satisfaction, then monitoring employee feedback on your dashboard can be a terrific leading indicator. Many organizations have formal voice of the employee (VOE) programs that survey the employee population frequently on their knowledge, understanding, and enthusiasm for the company's mission and strategy. Others choose to measure overall job satisfaction as the likelihood of referring a friend or family member to buy from or work for the company in the next 90 days. These make strong dashboard metrics to the degree they can be correlated to marketplace success.

Innovation

As we write this book, growth is the predominant component of most CEOs' strategies. They are looking for new products, new customers, new markets, and new sources of profitable revenue. So why aren't more CMOs putting metrics for their product pipeline on a dashboard?

FIGURE 7.4 — VOICE OF THE EMPLOYEE

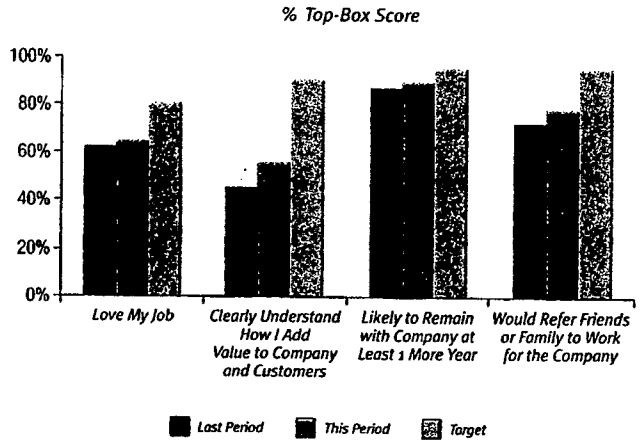
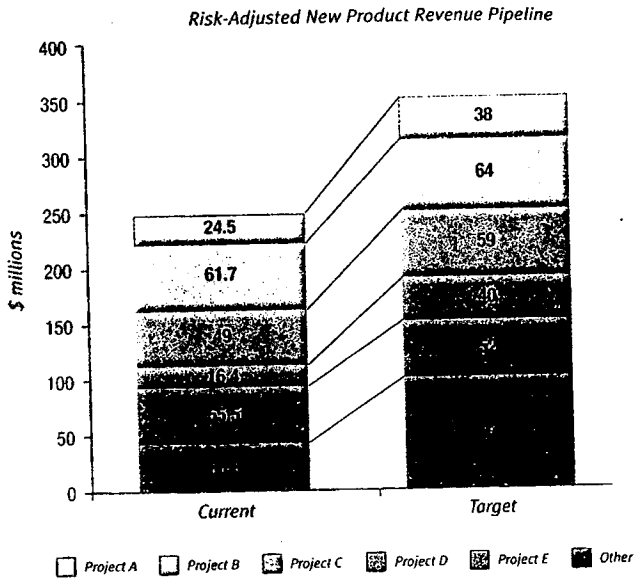


FIGURE 7.5 — INNOVATION PIPELINE



You can use a dashboard effectively to monitor the risk-adjusted revenue forecasts for products or services in various stages of market readiness. At a glance, this will give you terrific insight into the probability of meeting your long-term organic growth objectives. If the pipeline looks like it's stalling, you'll get an early warning indicator with sufficient time to put more resources on solving the problems or expanding the search for new opportunities.

Your dashboard is also an excellent way to track the percentage of marketing resources being spent on new product work. It helps to forecast the expected return from product development and compare it, at a glance, to the return derived from other marketing initiatives. In the end, the dashboard helps determine if innovation is being taken seriously in your organization.

Critical Project Progress

If you're building a data warehouse to transform your marketing process and strategy, you should consider monitoring that project

plan on your dashboard. If you're consolidating multiple brands, sales forces, or distribution channels during a merger, then metrics that describe the stage-gates in those processes are terrific candidates to include. Whatever is important — really important — should appear on your dashboard, if you can dissect it into stages of completion, dollars, timelines, or all of the above.

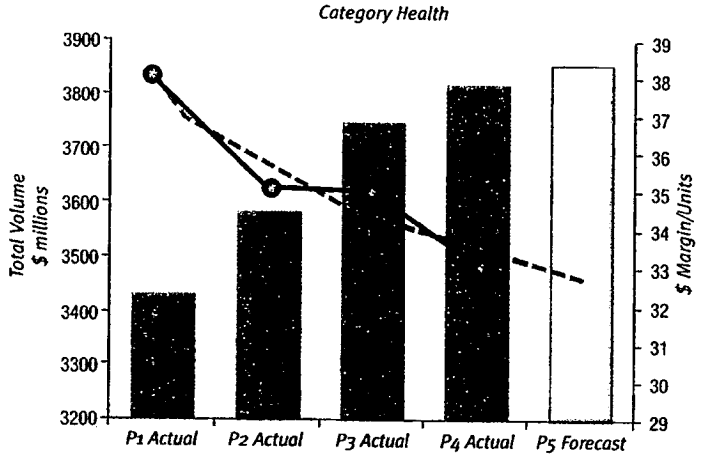
Environmental Metrics

There are many variables in the business environment that can mean the difference between success and failure. Obviously, the environmental variables affecting your business will be different from those in another industry or category. Here are a few of the more common considerations worthy of dashboard inclusion.

Market Growth

The health of your current markets is a critical barometer of future performance. How fast is your category growing? How many net new customers are coming into the category each day/week/month? Is the consumption pattern per customer changing for the better? Are they changing for the worse? Category health metrics like these should give you a clear sense of any rising or falling tides that may lift or crash your boat.

FIGURE 7.6 — CATEGORY HEALTH



Competitive Health

Start tracking the margins of your competitors with every source of information you have. A dashboard is perfect for a constant reading on the ratio between how fast your products are growing and how fast your category is growing overall. It may be nice to know that the sales of a particular product of yours were growing by 8% a year, but a shock to find out that the category was growing by 12% and you were losing share all along.

You also need to find a way to track pricing at retail (or the final sale to end users) across you and your competitors. Keeping an eye on category price elasticity can be a strong leading indicator of purchase trends and keep you in a proactive stance on margin management. While you're at it, consider burrowing into the overall category pricing structure. This goes further than comparisons at retail to monitor how wholesale prices are moving and how raw material pricing projections might create a threat to your product pipeline and ultimately affect future costs.

Also keep an eye out for potential mergers among competitors that may decimate your channel power or shut you out of key customers.

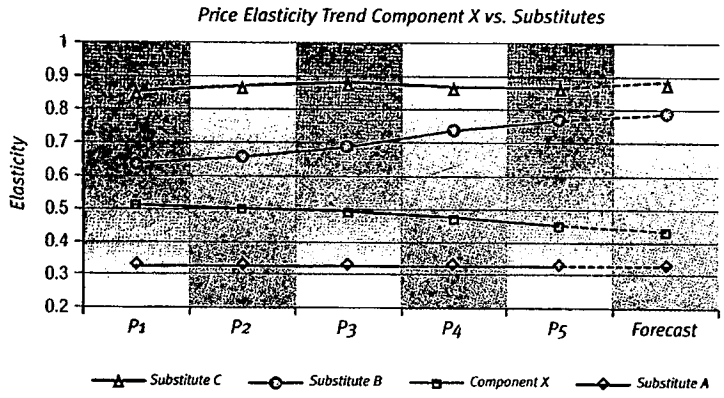
Monitor your substitute categories of products closely to help forecast market tightening. In the chemical business, for example, there's often more than one compound that a manufacturer can use to reach a certain end result. Knowing how prices are moving in each compound class can keep you ahead of the demand curve for your own products.

You might also monitor the entry/exit barriers to your business. If the cost to enter your business starts to fall, be prepared for more competition. If it rises, better times could be ahead.

Weather

This should be self-explanatory. If weather has a big impact on your business, track weather forecasts closely. Not that we're suggesting weather is a good dashboard metric, but the long-range temperature and precipitation indices are often important elements of sales forecasts and even more often very insightful diagnostic tools.

FIGURE 7.7 — SUBSTITUTION PRICE ELASTICITIES



There are dozens of companies specializing in providing detailed weather forecast data. Find the one that offers it in a form most applicable to your needs.

Trends and Demographics

Looking at the evolution of the world around you is critical. You might want to know the demographic data on who's been buying your product and whether that information is likely to undergo significant change. Changes in fashion, hairstyles, automobile engineering, family dynamics, music, and many other facets of life can have definitive impacts on businesses selling raw materials or component parts far upstream from the end consumable.

Tracing your product or service from your point of delivery through to its very end user can be extremely helpful in identifying the potentially disruptive forces at work around you and focusing attention on how to monitor them most effectively.

Macroeconomics

Consumer confidence and energy price forecasts are important to most companies, but depending on your business, public health projections, savings rates, or interest-rate forecasts might have more relevant meaning.