13 Strategy, Balanced Scorecard, and Strategic Profitability Analysis

Learning Objectives

- 1. Recognize which of two generic strategies a company is using
- 2. Understand what comprises reengineering
- 3. Understand the four perspectives of the balanced scorecard
- Analyze changes in operating income to evaluate strategy
- Identify unused capacity and how to manage it

Olive Garden wants to know.

So do Barnes and Noble, PepsiCo, and L.L.Bean. Even your local car dealer and transit authority are curious. They all want to know how well they are doing and how they score against the measures they strive to meet. The balanced scorecard can help them answer this question by evaluating key performance measures. Many companies have successfully used the balanced scorecard approach. Infosys Technologies, one of India's leading information technology companies, is one of them.

Balanced Scorecard Helps Infosys Transform into a Leading Consultancy¹

In the early 2000s, Infosys Technologies was a company in transition. The Bangalore-based company was a market leader in information technology outsourcing, but needed to expand to meet increased client demand. Infosys invested in many new areas including business process outsourcing, project management, and management consulting. This put Infosys in direct competition with established consulting firms, such as IBM and Accenture.

Led by CEO Kris Gopalakrishnan, the company developed an integrated management structure that would help align these new, diverse initiatives. Infosys turned to the balanced scorecard to provide a framework the company could use to formulate and monitor its strategy. The balanced scorecard measures corporate performance along four dimensions—financial, customer, internal business process, and learning and growth.

The balanced scorecard immediately played a role in the transformation of Infosys. The executive team used the scorecard to guide discussion during its meetings. The continual process of adaptation, execution, and management that the scorecard fostered helped the team respond to, and even anticipate, its clients' evolving needs. Eventually, use of the scorecard for performance measurement spread to the rest of the organization, with monetary incentives linked to the company's performance along the different dimensions.

Over time, the balanced scorecard became part of the Infosys culture. In recent years, Infosys has begun using the balanced

¹ Source: Asis Martinez-Jerez, F., Robert S. Kaplan, and Katherine Miller. 2011. Infosys's relationship scorecard: Measuring transformational partnerships. Harvard Business School Case No. 9-109-006. Boston: Harvard Business School Publishing.

scorecard concept to create "relationship scorecards" for many of its largest clients. Using the scorecard framework, Infosys began measuring its performance for key clients not only on project management and client satisfaction, but also on repeat business and anticipating clients' future strategic needs.

The balanced scorecard helped successfully steer the transformation of Infosys from a technology outsourcer to a leading business consultancy. From 1999 to 2007, the company had a compound annual growth rate of 50%, with sales growing from \$120 million in 1999 to more than \$3 billion in 2007. Infosys was recognized for its achievements by making the *Wired* 40, *BusinessWeek* IT 100, and *BusinessWeek* Most Innovative Companies lists.

This chapter focuses on how management accounting information helps companies such as Infosys, Merck, Verizon, and Volkswagen implement and evaluate their strategies. Strategy drives the operations of a company and guides managers' short-run and long-run decisions. We describe the balanced scorecard approach to implementing strategy and methods to analyze operating income to evaluate the success of a strategy. We also show how management accounting information helps strategic initiatives, such as productivity improvement, reengineering, and downsizing.



What Is Strategy?

Strategy specifies how an organization matches its own capabilities with the opportunities in the marketplace to accomplish its objectives. In other words, strategy describes how an organization can create value for its customers while differentiating itself from its competitors. For example, Wal-Mart, the retail giant, creates value for its customers by locating stores in suburban and rural areas, and by offering low prices, a wide range of product categories, and few choices within each product category. Consistent with its strategy, Wal-Mart has developed the capability to keep costs down by aggressively negotiating low prices with its suppliers in exchange for high volumes and by maintaining a no-frills, cost-conscious environment.

In formulating its strategy, an organization must first thoroughly understand its industry. Industry analysis focuses on five forces: (1) competitors, (2) potential entrants into the market, (3) equivalent products, (4) bargaining power of customers, and (5) bargaining power of input suppliers.² The collective effect of these forces shapes an organization's profit potential. In general, profit potential decreases with greater competition, stronger potential entrants, products that are similar, and more-demanding customers and suppliers. We illustrate these five forces for Chipset, Inc., maker of linear integrated circuit

Learning Objective

Recognize which of two generic strategies a company is using

... product differentiation or cost leadership

² M. Porter, Competitive Strategy (New York: Free Press, 1980); M. Porter, Competitive Advantage (New York: Free Press, 1985); and M. Porter, "What Is Strategy?" Harvard Business Review (November–December 1996): 61–78.

devices (LICDs) used in modems and communication networks. Chipset produces a single specialized product, CX1, a standard, high-performance microchip, which can be used in multiple applications. Chipset designed CX1 with extensive input from customers.

- 1. Competitors. The CX1 model faces severe competition with respect to price, timely delivery, and quality. Companies in the industry have high fixed costs, and persistent pressures to reduce selling prices and utilize capacity fully. Price reductions spur growth because it makes LICDs a cost-effective option in new applications such as digital subscriber lines (DSLs).
- 2. Potential entrants into the market. The small profit margins and high capital costs discourage new entrants. Moreover, incumbent companies such as Chipset are further down the learning curve with respect to lowering costs and building close relationships with customers and suppliers.
- 3. Equivalent products. Chipset tailors CX1 to customer needs and lowers prices by continuously improving CX1's design and processes to reduce production costs. This reduces the risk of equivalent products or new technologies replacing CX1.
- 4. Bargaining power of customers. Customers, such as EarthLink and Verizon, negotiate aggressively with Chipset and its competitors to keep prices down because they buy large quantities of product.
- 5. Bargaining power of input suppliers. To produce CX1, Chipset requires high-quality materials (such as silicon wafers, pins for connectivity, and plastic or ceramic packaging) and skilled engineers, technicians, and manufacturing labor. The skill-sets suppliers and employees bring gives them bargaining power to demand higher prices and wages.

In summary, strong competition and the bargaining powers of customers and suppliers put significant pressure on Chipset's selling prices. To respond to these challenges, Chipset must choose one of two basic strategies: *differentiating its product* or *achieving cost leadership*.

Product differentiation is an organization's ability to offer products or services perceived by its customers to be superior and unique relative to the products or services of its competitors. Apple Inc. has successfully differentiated its products in the consumer electronics industry, as have Johnson & Johnson in the pharmaceutical industry and Coca-Cola in the soft drink industry. These companies have achieved differentiation through innovative product R&D, careful development and promotion of their brands, and the rapid push of products to market. Differentiation increases brand loyalty and the willingness of customers to pay higher prices.

Cost leadership is an organization's ability to achieve lower costs relative to competitors through productivity and efficiency improvements, elimination of waste, and tight cost control. Cost leaders in their respective industries include Wal-Mart (consumer retailing), Home Depot and Lowe's (building products), Texas Instruments (consumer electronics), and Emerson Electric (electric motors). These companies provide products and services that are similar to—not differentiated from—their competitors, but at a lower cost to the customer. Lower selling prices, rather than unique products or services, provide a competitive advantage for these cost leaders.

What strategy should Chipset follow? To help it decide, Chipset develops the customer preference map shown in Exhibit 13-1. The *y*-axis describes various attributes of the product desired by customers. The *x*-axis describes how well Chipset and Visilog, a competitor of Chipset that follows a product-differentiation strategy, do along the various attributes desired by customers from 1 (poor) to 5 (very good). The map highlights the trade-offs in any strategy. It shows the advantages CX1 enjoys in terms of price, scalability (the CX1 technology allows Chispet's customer to achieve different performance levels by simply altering the number of CX1 units in their product), and customer service. Visilog's chips, however, are faster and more powerful, and are customized for various applications such as different types of modems and communication networks.

CX1 is somewhat differentiated from competing products. Differentiating CX1 further would be costly, but Chipset may be able to charge a higher price. Conversely, reducing the cost of manufacturing CX1 would allow Chipset to lower price, spur growth, and increase market share. The scalability of CX1 makes it an effective solution for meeting



varying customer needs. Also, Chipset's current engineering staff is more skilled at making product and process improvements than at creatively designing new products and technologies. Chipset decides to follow a cost-leadership strategy.

To achieve its cost-leadership strategy, Chipset must improve its own internal capabilities. It must enhance quality and reengineer processes to downsize and eliminate excess capacity. At the same time, Chipset's management team does not want to make cuts in personnel that would hurt company morale and hinder future growth.

Building Internal Capabilities: Quality Improvement and Reengineering at Chipset

To improve product quality—that is, to reduce defect rates and improve yields in its manufacturing process—Chipset must maintain process parameters within tight ranges based on real-time data about manufacturing-process parameters, such as temperature and pressure. Chipset must also train its workers in quality-management techniques to help them identify the root causes of defects and ways to prevent them and empower them to take actions to improve quality.

A second element of Chipset's strategy is reengineering its order-delivery process. Some of Chipset's customers have complained about the lengthening time span between ordering products and receiving them. **Reengineering** is the fundamental rethinking and redesign of business processes to achieve improvements in critical measures of performance, such as cost, quality, service, speed, and customer satisfaction.³ To illustrate reengineering, consider the order-delivery system at Chipset in 2010. When Chipset received an order from a customer, a copy was sent to manufacturing, where a production scheduler began planning the manufacturing of the ordered products. Frequently, a considerable amount of time elapsed before production began on the ordered product. After manufacturing was complete, CX1 chips moved to the shipping department, which matched the quantities of CX1 to be shipped against customer orders. Often, completed CX1 chips stayed in inventory until a truck became available for shipment. If the quantity to be shipped was less than the number of chips requested by the customer, a special shipment was made for the balance of the chips. Shipping documents moved to the billing department for issuing invoices. Special staff in the accounting department followed up with customers for payments.

The many transfers of CX1 chips and information across departments (sales, manufacturing, shipping, billing, and accounting) to satisfy a customer's order created delays. Furthermore, no single individual was responsible for fulfilling a customer order. To respond to these challenges, Chipset formed a cross-functional team in late 2010 and implemented a reengineered order-delivery process in 2011.

Decision Point

What are two generic strategies a company can use?

Learning **2** Objective

Understand what comprises reengineering

... redesigning business processes to improve performance by reducing cost and improving quality

³ See M. Hammer and J. Champy, Reengineering the Corporation: A Manifesto for Business Revolution (New York: Harper, 1993); E. Ruhli, C. Treichler, and S. Schmidt, "From Business Reengineering to Management Reengineering—A European Study," Management International Review (1995): 361–371; and K. Sandberg, "Reengineering Tries a Comeback—This Time for Growth, Not Just for Cost Savings," Harvard Management Update (November 2001).

Under the new system, a customer-relationship manager is responsible for each customer and negotiates long-term contracts specifying quantities and prices. The customer-relationship manager works closely with the customer and with manufacturing to specify delivery schedules for CX1 one month in advance of shipment. The schedule of customer orders and delivery dates is sent electronically to manufacturing. Completed chips are shipped directly from the manufacturing plant to customer sites. Each shipment automatically triggers an electronic invoice and customers electronically transfer funds to Chipset's bank.

Companies, such as AT&T, Banca di America e di Italia, Cigna Insurance, Cisco, PepsiCo, and Siemens Nixdorf, have realized significant benefits by reengineering their processes across design, production, and marketing (just as in the Chipset example). Reengineering has only limited benefits when reengineering efforts focus on only a single activity such as shipping or invoicing rather than the entire order-delivery process. To be successful, reengineering efforts must focus on changing roles and responsibilities, eliminating unnecessary activities and tasks, using information technology, and developing employee skills.

Take another look at Exhibit 13-1 and note the interrelatedness and consistency in Chipset's strategy. To help meet customer preferences for price, quality, and customer service, Chipset decides on a cost-leadership strategy. And to achieve cost leadership, Chipset builds internal capabilities by reengineering its processes. Chipset's next challenge is to effectively implement its strategy

Strategy Implementation and the Balanced Scorecard

Many organizations, such as Allstate Insurance, Bank of Montreal, BP, and Dow Chemical, have introduced a *balanced scorecard* approach to track progress and manage the implementation of their strategies.

The Balanced Scorecard

The **balanced scorecard** translates an organization's mission and strategy into a set of performance measures that provides the framework for implementing its strategy.⁴ The balanced scorecard does not focus solely on achieving short-run financial objectives. It also highlights the nonfinancial objectives that an organization must achieve to meet and sustain its financial objectives. The scorecard measures an organization's performance from four perspectives: (1) financial, the profits and value created for shareholders; (2) customer, the success of the company in its target market; (3) internal business processes, the internal operations that create value for customers; and (4) learning and growth, the people and system capabilities that support operations. A company's strategy influences the measures it uses to track performance in each of these perspectives.

Why is this tool called a balanced scorecard? Because it balances the use of financial and nonfinancial performance measures to evaluate short-run and long-run performance in a single report. The balanced scorecard reduces managers' emphasis on short-run financial performance, such as quarterly earnings, because the key strategic nonfinancial and operational indicators, such as product quality and customer satisfaction, measure changes that a company is making for the long run. The financial benefits of these longrun changes may not show up immediately in short-run earnings; however, strong improvement in nonfinancial measures usually indicates the creation of future economic value. For example, an increase in customer satisfaction, as measured by customer surveys and repeat purchases, signals a strong likelihood of higher sales and income in the future. By balancing the mix of financial and nonfinancial measures, the balanced scorecard

Decision Point

What is reengineering?

Learning 3 Objective

Understand the four perspectives of the balanced scorecard

... financial, customer, internal business process, and learning and growth

⁴ See R. S. Kaplan and D. P. Norton, *The Balanced Scorecard* (Boston: Harvard Business School Press, 1996); R. S. Kaplan and D. P. Norton, *The Strategy-Focused Organization: How Balanced Scorecard Companies Thrive in the New Business Environment* (Boston: Harvard Business School Press, 2001); R. S. Kaplan and D. P. Norton, *Strategy Maps: Converting Intangible Assets into Tangible Outcomes* (Boston: Harvard Business School Press, 2004); and R. S. Kaplan and D. P. Norton, *Alignment: Using the Balanced Scorecard to Create Corporate Synergies* (Boston: Harvard Business School Press, 2006).

For simplicity, this chapter, and much of the literature, emphasizes long-run financial objectives as the primary goal of for-profit companies. For-profit companies interested in long-run financial, environmental, and social objectives adapt the balanced scorecard to implement all three objectives.

broadens management's attention to short-run *and* long-run performance. Never lose sight of the key point. In for-profit companies, the primary goal of the balanced scorecard is to sustain long-run financial performance. Nonfinancial measures simply serve as leading indicators for the hard-to-measure long-run financial performance.

Strategy Maps and the Balanced Scorecard

We use the Chipset example to develop strategy maps and the four perspectives of the balanced scorecard. The objectives and measures Chipset's managers choose for each perspective relates to the action plans for furthering Chipset's cost leadership strategy: *improving quality* and *reengineering processes*.

Strategy Maps

A useful first step in designing a balanced scorecard is a *strategy map*. A *strategy map* is a diagram that describes how an organization creates value by connecting strategic objectives in explicit cause-and-effect relationships with each other in the financial, customer, internal business process, and learning and growth perspectives. Exhibit 13-2 presents Chipset's strategy map. Follow the arrows to see how a strategic objective affects other strategic objectives. For example, empowering the workforce helps align employee and organization goals and improves processes. Employee and organizational alignment also helps improve processes that improve manufacturing quality and productivity, reduce customer delivery time, meet specified delivery dates, and improve post-sales service, all of which increase customer satisfaction. Improving manufacturing quality and productivity



grows operating income and increases customer satisfaction that, in turn, increases market share, operating income, and shareholder value.

Chipset operates in a knowledge-intensive business. To compete successfully, Chipset invests in its employees, implements new technology and process controls, improves quality, and reengineers processes. Doing these activities well enables Chipset to build capabilities and intangible assets, which are not recorded as assets in its financial books. The strategy map helps Chipset evaluate whether these intangible assets are generating financial returns.

Chipset could include many other cause-and-effect relationships in the strategy map in Exhibit 13-2. But, Chipset, like other companies implementing the balanced scorecard, focuses on only those relationships that it believes to be the most significant.

Chipset uses the strategy map from Exhibit 13-2 to build the balanced scorecard presented in Exhibit 13-3. The scorecard highlights the four perspectives of performance: financial, customer, internal business process, and learning and growth. The first column presents the strategic objectives from the strategy map in Exhibit 13-2. At the beginning of 2011, the company's managers specify the strategic objectives, measures, initiatives (the actions necessary to achieve the objectives), and target performance (the first four columns of Exhibit 13-3).

Chipset wants to use the balanced scorecard targets to drive the organization to higher levels of performance. Managers therefore set targets at a level of performance that is achievable, yet distinctly better than competitors. Chipset's managers complete the fifth column, reporting actual performance at the end of 2011. This column compares Chipset's performance relative to target.

Four Perspectives of the Balanced Scorecard

We next describe the perspectives in general terms and illustrate each perspective using the measures chosen by Chipset in the context of its strategy.

- 1. Financial perspective. This perspective evaluates the profitability of the strategy and the creation of shareholder value. Because Chipset's key strategic initiatives are cost reduction relative to competitors' costs and sales growth, the financial perspective focuses on how much operating income results from reducing costs and selling more units of CX1.
- 2. Customer perspective. This perspective identifies targeted customer and market segments and measures the company's success in these segments. To monitor its customer objectives, Chipset uses measures such as market share in the communication-networks segment, number of new customers, and customer-satisfaction ratings.
- 3. Internal-business-process perspective. This perspective focuses on internal operations that create value for customers that, in turn, help achieve financial performance. Chipset determines internal-business-process improvement targets after benchmarking against its main competitors using information from published financial statements, prevailing prices, customers, suppliers, former employees, industry experts, and financial analysts. The internal-business-process perspective comprises three subprocesses:
 - Innovation process: Creating products, services, and processes that will meet the needs of customers. This is a very important process for companies that follow a product-differentiation strategy and must constantly design and develop innovative new products to remain competitive in the marketplace. Chipset's innovation focuses on improving its manufacturing capability and process controls to lower costs and improve quality. Chipset measures innovation by the number of improvements in manufacturing processes and percentage of processes with advanced controls.
 - Operations process: Producing and delivering existing products and services that will meet the needs of customers. Chipset's strategic initiatives are (a) improving manufacturing quality, (b) reducing delivery time to customers, and (c) meeting specified delivery dates so it measures yield, order-delivery time, and on-time deliveries.
 - Postsales-service process: Providing service and support to the customer after the sale of a product or service. Chipset monitors how quickly and accurately it is responding to customer-service requests.

Exhibit 13-3

The Balanced Scorecard for Chipset, Inc., for 2011

Strategic Objectives	Measures	Initiatives	Target Performance	Actual Performance			
Financial Perspective	Operating income from	Manage costs and	\$1,850,000	\$1,912,500			
	Operating income from	Build strong customer	\$2,500,000	\$2,820,000			
Increase shareholder value	Revenue growth	relationships	9%	10% ^a			
Customer Perspective							
Increase market share	Market share in communication-	Identify future needs of customers	6%	7%			
Increase customer	Number of new	Identify new target-customer	1	1 ^b			
Sutoruotion	Customer-satisfaction	Increase customer focus of	90% of	87% of			
	ratings	sales organization	customers give top two ratings	customers give top two ratings			
		4					
Internal-Business-Process	Perspective						
Improve postsales service	Service response time	Improve customer-service process	Within 4 hours	Within 3 hours			
Improve manufacturing quality and productivity	Yield	Identify root causes of problems and improve quality	78%	79.3%			
Reduce delivery time to customers	Order-delivery time	Reengineer order-delivery process	30 days	30 days			
Meet specified delivery dates	On-time delivery	Reengineer order-delivery process	92%	90%			
Improve processes	Number of major improvements in manufacturing and business processes	Organize teams from manufacturing and sales to modify processes	5	5			
Improve manufacturing capability	Percentage of processes with advanced controls	Organize R&D/manufact- uring teams to implement advanced controls	75%	75%			
		_					
Learning-and-Growth Persp	ective						
Align employee and organization goals	Employee-satisfaction ratings	Employee participation and suggestions program to build teamwork	80% of employees give top two ratings	88% of employees give top two ratings			
Empower workforce	Percentage of line workers empowered to manage processes	Have supervisors act as coaches rather than decision makers	85%	90%			
Develop process skill	Percentage of employees trained in process and quality management	Employee training programs	90%	92%			
Enhance information- system capabilities	Percentage of manufacturing processes with real-time feedback	Improve online and offline data gathering	80%	80%			
a(Revenues in 2011 – Revenues in 2010) ÷ Revenues in 2010 = (\$25,300,000 – \$23,000,000) ÷ \$23,000,000 = 10%. ^b Number of customers increased from seven to eight in 2011.							

4. Learning-and-growth perspective. This perspective identifies the capabilities the organization must excel at to achieve superior internal processes that in turn create value for customers and shareholders. Chipset's learning and growth perspective emphasizes three capabilities: (1) information-system capabilities, measured by the percentage of manufacturing processes with real-time feedback; (2) employee capabilities, measured by the percentage of employees trained in process and quality management; and (3) motivation, measured by employee satisfaction and the percentage of manufacturing and sales employees (line employees) empowered to manage processes.

The arrows in Exhibit 13-3 indicate the *broad* cause-and-effect linkages: how gains in the learning-and-growth perspective lead to improvements in internal business processes, which lead to higher customer satisfaction and market share, and finally lead to superior financial performance. Note how the scorecard describes elements of Chipset's strategy implementation. Worker training and empowerment improve employee satisfaction and lead to manufacturing and business-process improvements that improve quality and reduce delivery time. The result is increased customer satisfaction and higher market share. These initiatives have been successful from a financial perspective. Chipset has earned significant operating income from its cost leadership strategy, and that strategy has also led to growth.

A major benefit of the balanced scorecard is that it promotes causal thinking. Think of the balanced scorecard as a *linked scorecard* or a *causal scorecard*. Managers must search for empirical evidence (rather than rely on faith alone) to test the validity and strength of the various connections. A causal scorecard enables a company to focus on the key drivers that steer the implementation of the strategy. Without convincing links, the scorecard loses much of its value.

Implementing a Balanced Scorecard

To successfully implement a balanced scorecard requires commitment and leadership from top management. At Chipset, the team building the balanced scorecard (headed by the vice president of strategic planning) conducted interviews with senior managers, probed executives about customers, competitors, and technological developments, and sought proposals for balanced scorecard objectives across the four perspectives. The team then met to discuss the responses and to build a prioritized list of objectives.

In a meeting with all senior managers, the team sought to achieve consensus on the scorecard objectives. Senior management was then divided into four groups, with each group responsible for one of the perspectives. In addition, each group broadened the base of inputs by including representatives from the next-lower levels of management and key functional managers. The groups identified measures for each objective and the sources of information for each measure. The groups then met to finalize scorecard objectives, measures, targets, and the initiatives to achieve the targets. Management accountants played an important role in the design and implementation of the balanced scorecard, particularly in determining measures to represent the realities of the business. This required management accountants to understand the economic environment of the industry, Chipset's customers and competitors, and internal business issues such as human resources, operations, and distribution.

Managers made sure that employees understood the scorecard and the scorecard process. The final balanced scorecard was communicated to all employees. Sharing the scorecard allowed engineers and operating personnel, for example, to understand the reasons for customer satisfaction and dissatisfaction and to make suggestions for improving internal processes directly aimed at satisfying customers and implementing Chipset's strategy. Too often, scorecards are seen by only a select group of managers. By limiting the scorecard's exposure, an organization loses the opportunity for widespread organization engagement and alignment.

Chipset (like Cigna Property, Casualty Insurance, and Wells Fargo) also encourages each department to develop its own scorecard that ties into Chipset's main scorecard described in Exhibit 13-3. For example, the quality control department's scorecard has measures that its department managers use to improve yield—number of quality circles, statistical process control charts, Pareto diagrams, and root-cause analyses (see Chapter 19, pp. 675–677 for more details). Department scorecards help align the actions of each department to implement Chipset's strategy.

Companies frequently use balanced scorecards to evaluate and reward managerial performance and to influence managerial behavior. Using the balanced scorecard for performance evaluation widens the performance management lens and motivates managers to give greater attention to nonfinancial drivers of performance. Surveys indicate, however, that companies continue to assign more weight to the financial perspective (55%) than to the other perspectives—customer (19%), internal business process (12%), and learning and growth (14%). Companies cite several reasons for the relatively smaller weight on nonfinancial measures: difficulty evaluating the relative importance of nonfinancial measures; challenges in measuring and quantifying qualitative, nonfinancial data; and difficulty in compensating managers despite poor financial performance (see Chapter 23 for a more detailed discussion of performance evaluation). Many companies, however, are giving greater weight to nonfinancial measures in promotion decisions because they believe that nonfinancial measures (such as customer satisfaction, process improvements, and employee motivation) better assess a manager's potential to succeed at senior levels of management. For the balanced scorecard to be effective, managers must view it as fairly assessing and rewarding all important aspects of a manager's performance and promotion prospects.

Aligning the Balanced Scorecard to Strategy

Different strategies call for different scorecards. Recall Chipset's competitor Visilog, which follows a product-differentiation strategy by designing custom chips for modems and communication networks. Visilog designs its balanced scorecard to fit its strategy. For example, in the financial perspective, Visilog evaluates how much of its operating income comes from charging premium prices for its products. In the customer perspective, Visilog measures the percentage of its revenues from new products and new customers. In the internal-business-process perspective, Visilog measures the number of new products introduced and new product development time. In the learning-and-growth perspective, Visilog measures the development of advanced manufacturing capabilities to produce custom chips. Visilog also uses some of the measures described in Chipset's balanced scorecard in Exhibit 13-3. For example, revenue growth, customer satisfaction ratings, order-delivery time, on-time delivery, percentage of frontline workers empowered to manage processes, and employee-satisfaction ratings are also important measures under the product-differentiation strategy. The goal is to align the balanced scorecard with company strategy.⁵ Exhibit 13-4 presents some common measures found on company scorecards in the service, retail, and manufacturing sectors.

Features of a Good Balanced Scorecard

A well-designed balanced scorecard has several features:

- It tells the story of a company's strategy, articulating a sequence of cause-and-effect relationships—the links among the various perspectives that align implementation of the strategy. In for-profit companies, each measure in the scorecard is part of a causeand-effect chain leading to financial outcomes. Not-for-profit organizations design the cause-and-effect chain to achieve their strategic service objectives—for example, number of people no longer in poverty, or number of children still in school.
- 2. The balanced scorecard helps to communicate the strategy to all members of the organization by translating the strategy into a coherent and linked set of understandable and measurable operational targets. Guided by the scorecard, managers and employees take actions and make decisions to achieve the company's strategy. Companies that have distinct strategic business units (SBUs)—such as consumer

⁵ For simplicity, we have presented the balanced scorecard in the context of companies that have followed either a cost-leadership or a product-differentiation strategy. Of course, a company may have some products for which cost leadership is critical and other products for which product differentiation is important. The company will then develop separate scorecards to implement the different product strategies. In still other contexts, product differentiation may be of primary importance, but some cost leadership must also be achieved. The balanced scorecard measures would then be linked in a cause-and-effect way to this strategy.

Exhibit 13-4

Frequently Cited Balanced Scorecard Measures

Financial Perspective

Income measures: Operating income, gross margin percentage

Revenue and cost measures: Revenue growth, revenues from new products, cost reductions in key areas *Income and investment measures:* Economic value added ^a(EVA®), return on investment *Customer Perspective*

Market share, customer satisfaction, customer-retention percentage, time taken to fulfill customers' requests, number of customer complaints

Internal-Business-Process Perspective

Innovation Process: Operating capabilities, number of new products or services, new-product development times, and number of new patents

Operations Process: Yield, defect rates, time taken to deliver product to customers, percentage of on-time deliveries, average time taken to respond to orders, setup time, manufacturing downtime

Postsales Service Process: Time taken to replace or repair defective products, hours of customer training for using the product

Learning-and-Growth Perspective

Employee measures: Employee education and skill levels, employee-satisfaction ratings, employee turnover rates, percentage of employee suggestions implemented, percentage of compensation based on individual and team incentives

Technology measures: Information system availability, percentage of processes with advanced controls

^aThis measure is described in Chapter 23.

products and pharmaceuticals at Johnson & Johnson—develop their balanced scorecards at the SBU level. Each SBU has its own unique strategy and implementation goals; building separate scorecards allows each SBU to choose measures that help implement its distinctive strategy.

- 3. In for-profit companies, the balanced scorecard must motivate managers to take actions that eventually result in improvements in financial performance. Managers sometimes tend to focus too much on innovation, quality, and customer satisfaction as ends in themselves. For example, Xerox spent heavily to increase customer satisfaction without a resulting financial payoff because higher levels of satisfaction did not increase customer loyalty. Some companies use statistical methods, such as regression analysis, to test the anticipated cause-and-effect relationships among nonfinancial measures and financial performance. The data for this analysis can come from either time series data (collected over time) or cross-sectional data (collected, for example, across multiple stores of a retail chain). In the Chipset example, improvements in non-financial factors have, in fact, already led to improvements in financial factors.
- 4. The balanced scorecard limits the number of measures, identifying only the most critical ones. Chipset's scorecard, for example, has 16 measures, between 3 and 6 measures for each perspective. Limiting the number of measures focuses managers' attention on those that most affect strategy implementation. Using too many measures makes it difficult for managers to process relevant information.
- 5. The balanced scorecard highlights less-than-optimal trade-offs that managers may make when they fail to consider operational and financial measures together. For example, a company whose strategy is innovation and product differentiation could achieve superior short-run financial performance by reducing spending on R&D. A good balanced scorecard would signal that the short-run financial performance might have been achieved by taking actions that hurt future financial performance because a leading indicator of that performance, R&D spending and R&D output, has declined.

Pitfalls in Implementing a Balanced Scorecard

Pitfalls to avoid in implementing a balanced scorecard include the following:

1. Managers should not assume the cause-and-effect linkages are precise. They are merely hypotheses. Over time, a company must gather evidence of the strength and timing of the linkages among the nonfinancial and financial measures. With experience,

organizations should alter their scorecards to include those nonfinancial strategic objectives and measures that are the best leading indicators (the causes) of financial performance (a lagging indicator or the effect). Understanding that the scorecard evolves over time helps managers avoid unproductively spending time and money trying to design the "perfect" scorecard at the outset. Furthermore, as the business environment and strategy change over time, the measures in the scorecard also need to change.

- 2. Managers should not seek improvements across all of the measures all of the time. For example, strive for quality and on-time performance but not beyond the point at which further improvement in these objectives is so costly that it is inconsistent with long-run profit maximization. Cost-benefit considerations should always be central when designing a balanced scorecard.
- 3. Managers should not use only objective measures in the balanced scorecard. Chipset's balanced scorecard includes both objective measures (such as operating income from cost leadership, market share, and manufacturing yield) and subjective measures (such as customer- and employee-satisfaction ratings). When using subjective measures, though, managers must be careful that the benefits of this potentially rich information are not lost by using measures that are inaccurate or that can be easily manipulated.
- 4. Despite challenges of measurement, top management should not ignore nonfinancial measures when evaluating managers and other employees. Managers tend to focus on the measures used to reward their performance. Excluding nonfinancial measures when evaluating performance will reduce the significance and importance that managers give to nonfinancial measures.

Evaluating the Success of Strategy and Implementation

To evaluate how successful Chipset's strategy and its implementation have been, its management compares the target- and actual-performance columns in the balanced scorecard (Exhibit 13-3). Chipset met most targets set on the basis of competitor benchmarks in 2011 itself. That's because, in the Chipset context, improvements in the learning and growth perspective quickly ripple through to the financial perspective. Chipset will continue to seek improvements on the targets it did not achieve, but meeting most targets suggests that the strategic initiatives that Chipset identified and measured for learning and growth resulted in improvements in internal business processes, customer measures, and financial performance.

How would Chipset know if it had problems in strategy implementation? If it did not meet its targets on the two perspectives that are more internally focused: learning and growth and internal business processes.

What if Chipset performed well on learning and growth and internal business processes, but customer measures and financial performance in this year and the next did not improve? Chipset's managers would then conclude that Chipset did a good job of implementation (the various internal nonfinancial measures it targeted improved) but that its strategy was faulty (there was no effect on customers or on long-run financial performance and value creation). Management failed to identify the correct causal links. It implemented the wrong strategy well! Management would then reevaluate the strategy and the factors that drive it.

Now what if Chipset performed well on its various nonfinancial measures, and operating income over this year and the next also increased? Chipset's managers might be tempted to declare the strategy a success because operating income increased. Unfortunately, management still cannot conclude with any confidence that Chipset successfully formulated and implemented its strategy. Why? Because operating income can increase simply because entire markets are expanding, not because a company's strategy has been successful. Also, changes in operating income might occur because of factors outside the strategy. For example, a company such as Chipset that has chosen a cost-leadership strategy may find that its operating-income increase actually resulted from, say, some degree of product differentiation. To evaluate the success of a strategy, managers and management accountants need to link strategy to the sources of operating-income increases.

Decision Point

How can an organization translate its strategy into a set of performance measures? For Chipset to conclude that it was successful in implementing its strategy, it must demonstrate that improvements in its financial performance and operating income over time resulted from achieving targeted cost savings and growth in market share. Fortunately, the top two rows of Chipset's balanced scorecard in Exhibit 13-3 show that operating-income gains from productivity (\$1,912,500) and growth (\$2,820,000) exceeded targets. The next section of this chapter describes how these numbers were calculated. Because its strategy has been successful, Chipset's management can be more confident that the gains will be sustained in subsequent years.

Chipset's management accountants subdivide changes in operating income into components that can be identified with product differentiation, cost leadership, and growth. Why growth? Because successful product differentiation or cost leadership generally increases market share and helps a company to grow. Subdividing the change in operating income to evaluate the success of a strategy is conceptually similar to the variance analysis discussed in Chapters 7 and 8. One difference, however, is that management accountants compare actual operating performance over two different periods, not actual to budgeted numbers in the same time period as in variance analysis.⁶

Strategic Analysis of Operating Income

The following illustration explains how to subdivide the change in operating income from one period to *any* future period. The individual components describe company performance with regard to product differentiation, cost leadership, and growth.⁷ We illustrate the analysis using data from 2010 and 2011 because Chipset implemented key elements of its strategy in late 2010 and early 2011 and expects the financial consequences of these strategies to occur in 2011. Suppose the financial consequences of these strategies had been expected to affect operating income in only 2012. Then we could just as easily have compared 2010 to 2012. If necessary, we could also have compared 2010 to 2011 and 2011 and 2012 taken together.

Chipset's data for 2010 and 2011 follow:

		2010	2011
1.	Units of CX1 produced and sold	1,000,000	1,150,000
2.	Selling price	\$23	\$22
3.	Direct materials (square centimeters of silicon wafers)	3,000,000	2,900,000
4.	Direct material cost per square centimeter	\$1.40	\$1.50
5.	Manufacturing processing capacity (in square centimeters of silicon wafer)	3,750,000	3,500,000
6.	Conversion costs (all manufacturing costs other than direct material costs)	\$16,050,000	\$15,225,000
7.	Conversion cost per unit of capacity (row 6 ÷ row 5)	\$4.28	\$4.35

Chipset provides the following additional information:

- 1. Conversion costs (labor and overhead costs) for each year depend on production processing capacity defined in terms of the quantity of square centimeters of silicon wafers that Chipset can process. These costs do not vary with the actual quantity of silicon wafers processed.
- 2. Chipset incurs no R&D costs. Its marketing, sales, and customer-service costs are small relative to the other costs. Chipset has fewer than 10 customers, each purchasing roughly the same quantities of CX1. Because of the highly technical nature of the product, Chipset uses a cross-functional team for its marketing, sales, and customer-service activities. This cross-functional approach ensures that, although marketing, sales, and customer-service costs are small, the entire Chipset organization, including manufacturing engineers, remains focused on increasing customer satisfaction and

Learning Objective

Analyze changes in operating income to evaluate strategy

... growth, price recovery, and productivity

⁶ Other examples of focusing on actual performance over two periods rather than comparisons of actuals with budgets can be found in J. Hope and R. Fraser, *Beyond Budgeting* (Boston, MA: Harvard Business School Press, 2003).

⁷ For other details, see R. Banker, S. Datar, and R. Kaplan, "Productivity Measurement and Management Accounting," *Journal of Accounting, Auditing and Finance* (1989): 528–554; and A. Hayzen and J. Reeve, "Examining the Relationships in Productivity Accounting," *Management Accounting Quarterly* (2000): 32–39.