

Chapter Six

Defining the Organization's Strategic Direction

Tesla, Inc. in 2018

In 2018, Tesla was one of the most talked about companies in the world. What started as an unlikely and risky venture to produce an all-electric luxury sports car had grown into a company with almost \$12 billion in annual revenues that produced multiple car models, owned Solar City (a solar panel leasing company), and produced energy storage systems (e.g., Powerwall) and solar roofs (see Figure 1 below). Though it was not yet posting profits, it had a market capitalization of more than \$47 billion.

In 2017, Tesla delivered 103,020 cars (see Figure 2 below), a 35 percent rise over its 2016 figures. In the first quarter of 2018, Tesla delivered 29,980 cars, of which almost one-third were its newest model, the Model 3. The company also had a growing waiting list for all three cars, highlighting both a strength and a weakness of the company: people were enthusiastic about the cars and demand was high, but Tesla was having trouble ramping up production to meet that demand.

Some of the production capacity for Model S and Model X had been reallocated to production of the new Model 3 and getting the new model's production up and running had been rougher than expected. The company's CEO, Elon Musk, had forecasted producing 5000 Model 3 cars a week by the end of the first quarter of 2018, but instead production was closer to 1000 cars a week by the end of the first quarter, triggering an onslaught of criticism by analysts.

To make matters worse, the company's rapid expansion of production capacity meant that it would likely require additional capital within the year, causing stockholders to worry about dilution of their shares. Tesla had made bold moves and impressive progress, but there were lingering concerns over its viability. Would it be able to turn a sustainable profit on its auto-making operations? In the niche market of luxury automobiles for the "eco-wealthy," it had a privileged position with customers that were relatively price-insensitive and were seeking a stylish, high performance car that made an environmental statement. To compete for the

FIGURE 1

Source: Tesla 2018 10K.

2017 Select Items from Income Statement (figures in \$US thousands)	
Automotive Sales	8,534,752
Automotive Leasing	1,106,548
Total Automotive Revenues	9,641,300
Energy Generation and Storage	1,001,185
Services and Other	1,116,266
Total Revenues	11,758,751
Cost of Revenue	9,536,264
Gross Profit	2,222,487
R&D Expense	1,278,073
Sales, General and Admin.	2,476,500
Operating Income	(1,632,086)

FIGURE 2

Tesla Deliveries in 2017 and 2018

	Model S	Model X	Model 3	Total
2017				
Q1	13,450	11,550		25,000
Q2	12,000	10,000		22,000
Q3	14,065	11,865	220	26,150
Q4	15,200	13,120	1550	29,870
Total	54,715	46,535	1770	103,020
2018				
Q1	11,730	10,070	8180	29,980

mass market, the car would have to compete on value and efficiency with larger, more established rivals.

History of Tesla

In the year 2003, an engineer named Martin Eberhard was looking for his next big project. A tall, slim man with a mop of gray hair, Eberhard was a serial entrepreneur who had launched a number of start-ups, including a company called NuvoMedia, which he sold to Gemstar in a \$187 million deal. Eberhard was also looking for a sports car that would be environmentally friendly—he had concerns about global warming and U.S. dependence on the Middle East for oil. When he didn’t find the car of his dreams on the market he began contemplating building one himself,

even though he had zero experience in the auto industry. Eberhard noticed that many of the driveways that had a Toyota Prius hybrid electric vehicle (or “dork mobile” as he called it) also had expensive sports cars in them—making Eberhard speculate that there could be a market for a high performance environmentally friendly car. As explained by Eberhard, “It was clear that people weren’t buying a Prius to save money on gas—gas was selling close to inflation—adjusted all-time lows. They were buying them to make a statement about the environment.”^a

Eberhard began to consider a range of alternative fuel options for his car: hydrogen fuel cells, natural gas, diesel. However, he soon concluded the highest efficiency and performance would come from a pure electric vehicle. Luckily for Eberhard, Al Cocconi (founder of AC Propulsion and one of the original engineers for GM’s ill-fated EV-1) had concluded the same thing and had produced a car called the tzero. The tzero could go from 0 to 60 miles per hour in 4.1 seconds, but it was powered with extremely heavy lead-acid batteries, limiting its range to about 60 miles between charges. Eberhard approached Cocconi with the idea of using the lighter lithium-ion batteries, which offered six times more energy per pound. Cocconi was eager to try out the idea (he had, in fact, been experimenting with lithium-ion batteries himself), and the resulting lithium-ion based tzero accelerated to 60 miles per hour in 3.6 seconds, and could travel more than 300 miles. Eberhard licensed the electric-drive-train technology from AC Propulsion, and founded his company, Tesla Motors (named after Nikola Tesla, a late 19th century and early 20th century inventor who developed, among other things, the AC electrical systems used in the United States today).^b

Meanwhile, there was another entrepreneur—one with much deeper pockets—also interested in developing electric vehicles based on the tzero: Elon Musk. In 2002, Elon Musk was a 31-year-old South African living in California, who had founded a company that ultimately became PayPal. After selling PayPal to eBay in 2002 for \$1.5 billion, he started a company called SpaceX with the ambitious goal of developing cheap, consumer space travel. (SpaceX’s Dragon spacecraft ultimately made history in May of 2012 by becoming the first commercial vehicle to launch and dock at the International Space Station.^c) Musk’s assertive style, and his astonishing record of high-tech entrepreneurship, made him one of the inspirations for the portrayal of Tony Stark character in Jon Favreau’s *Iron Man* movies.

Like Eberhard, Musk thought electric cars were the key to the United States achieving energy independence, and he approached Cocconi about buying the tzero. Tom Gage, who was then AC Propulsion’s CEO, suggested that Musk collaborated with Eberhard. After a two-hour meeting in February of 2004, Musk agreed to fund Eberhard’s plan with \$6.3 million. He would be the company’s chairman and Eberhard would serve as CEO.

The Roadster

The first Tesla prototype, named the Roadster, was based on the \$45,000 Lotus Elise, a fast and light sports car that seemed perfect for the creation of Eberhard and Musk’s grand idea (see Figure 3A). The car would have 400 volts of electric potential, liquid-cooled lithium-ion batteries, and a series of silicon transistors

that would give the car acceleration so powerful the driver would be pressed back against their seat.^d It would be about as fast as a Porsche 911 Turbo, would not create a single emission, and would get about 220 miles on a single charge from the kind of outlet you would use to power a washing machine.^e

After a series of clashes between Musk and Eberhard that led to delays in launching the Roadster, Eberhard was pushed out of the company. The Roadster missed its deadline for beginning production at the Lotus facility, triggering a penalty built into the manufacturing contract Eberhard had signed with Lotus: a \$4 million fee. However, when the car finally launched in 2008, the enthusiastic response it received was astonishing—it boasted an all-star list of celebrities with reservations to buy, and everywhere the Roadster drove, people stopped to stare.^f

The Model S

Musk's ambitions did not stop at a niche high-end car. He wanted to build a major U.S. auto company—a feat that had not been successfully accomplished since the 1920s. To do so, he knew he needed to introduce a less expensive car that could attract a higher volume of sales, if not quite the mass market. In June of 2008, Tesla announced the Model S, a high performance all-electric sedan that would sell for a price ranging from \$57,400 to \$77,400, and compete against cars like the BMW 5 Series (see Figure 3B). The car would have an all-aluminium body and a range of up to 300 miles per charge.^g Estimates suggested that the Model S cost \$500 million to develop, however offsetting that cost was a \$465 million loan Tesla received from the U.S. government to build the car, as part of the U.S. government's initiative to promote the development of technologies that would help the United States to achieve energy independence.^h

By May of 2012, Tesla reported that it already had 10,000 reservations for customers hoping to buy the Model S, and Musk confidently claimed the company would soon be producing, and selling, 20,000 Model S cars a year. Musk also noted that after ramping up production, he expected to see "at least 10,000 units a year from demand in Europe and at least 5000 in Asia."ⁱ The production of the Model S went more smoothly than that of the Roadster, and by June of 2012 the first Model S cars were rolling off the factory floor. The very first went to Jeff Skoll, eBay's first president, and a major investor in Tesla. On the day of the launch, Skoll talked with Musk about whether it was harder to build a rocket or a car (referring to Musk's SpaceX company): "We decided it was a car. There isn't a lot of competition in space."^j

To build the car, Tesla bought a recently closed automobile factory in Fremont California that had been used for the New United Motor Manufacturing Inc. (NUMMI) venture between Toyota and General Motors. The factory, which was capable of producing 1000 cars a week, was far bigger than Tesla's immediate needs and would give the company room to grow. Furthermore, though the plant and the land it was on had been appraised at around \$1 billion before NUMMI was shut down, Tesla was able to snap up the idled factory for \$42 million.^k Tesla also used the factory to produce battery packs for Toyota's RAV4, and a charger for a subcompact Daimler AG electric vehicle. These projects supplemented Tesla's income while also helping it to build scale and learning-curve efficiencies in its technologies.

FIGURE 3A
Tesla Roadster

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FIGURE 3B
Tesla Model S

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FIGURE 3C
Tesla Model X

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FIGURE 3D
Tesla Model 3

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In the first quarter of 2013, Tesla announced its first quarterly profit. The company had taken in \$562 million in revenues, and reported an \$11.2 million profit. Then more good news came: the Model S had earned *Consumer Reports*' highest rating, and had outsold similarly priced BMW and Mercedes models in the first quarter.¹ In May of 2013, the company raised \$1 billion by issuing new shares, and then surprised investors by announcing that it had paid back its government loan. After repaying the loan, Tesla had about \$679 million in cash. Musk had announced confidently that he felt it was his obligation to pay back taxpayer money as soon as possible, and that the company had sufficient funds now to develop its next generation of automobiles without the loan, and without issuing further shares.^m

Model X

The Model X, unveiled in 2015, was designed as a high-end sport utility vehicle (SUV) that seats seven. It had several distinctive features that set it apart from the crowded luxury SUV market (Figure 3C). In addition to being all-electric and able to go from 0 to 60 miles per hour in just 3.2 seconds, it featured a panoramic windshield and distinctive gull wing doors (that open upward rather than swinging out) that open automatically in response to the driver's approach. "It will triangulate my position," Musk said, "It will open the front door without touching. When you sit down, it will close the door."ⁿ The Model X had a range of about 250 miles (like the Model S) but could tow 5000 pounds. Its selling price would start at \$70,000 but could exceed \$100,000 depending on the options selected.

In the United States, the mid-size luxury SUV market was about five times the size of the high-end luxury sedan market, and the Model X rapidly attracted a long waiting list of people who placed deposits for the car. Musk projected a fast production ramp up, with goals of producing 85,000 to 90,000 Model X and S vehicles in 2017. Analysts at the time doubted that production could be ramped up so quickly, but despite several supplier parts shortages, Tesla's estimates ended up being very close to the mark: The company produced a total of 83,922 cars in 2017.^o

Reviews of the car were mixed. *Consumer Reports* found the car disappointing, citing rear doors that were prone to pausing, the car's limited cargo capacity, and a ride that was "too firm and choppy for a \$110,000 car."^p *Car and Driver's* review also expressed some doubts about the wing doors, but gave the car overall a rating of five out of five stars, stating, "There are no other electric SUVs at the moment. And even against fossil-fuel-fed SUVs, the Tesla's effortless performance and efficiency can't be matched."^q

By the end of 2016, the Model X had accumulated total sales of 25,524, ranking it seventh among the best-selling plug-in cars in the world (notably, cumulative sales of Tesla Model S reached 158,159 by the end of 2016, making it the second best-selling plug-in car in the world, behind only the Nissan Leaf).^r By the end of 2017, cumulative sales of the Model X reached approximately 72,059 units.^s

Model 3

To achieve Musk's goal of making a real dent in fossil fuel use, Tesla needed a truly mass-market car. Thus, in the fall of 2016, he announced the Model 3, a mid-size all-electric four-door sedan with a range of 220 to 310 miles (depending on the battery option), and a base price of \$35,000 (see Figure 3D). Within a week, Tesla had received 325,000 reservations for the car, ranking it among the most sought-after cars in the world. A review in *Road and Track* said that the "Model 3 proves that Tesla is thinking far beyond the edges of the Model S and X. Stepping out of the 3, you realize that, as far as the S and X pushed the envelope, they were always meant as intermediaries, stepping stones designed to draw people away from comfortable convention and into the future of the automobile."^t *Popular Mechanics* gave the car its 2018 Car of the Year award, and *Automobile Magazine* gave it the 2018 Design of the Year Award.

The company announced an extremely ambitious production ramp up plan, with a goal of being able to produce 500,000 total units (across all three models) by the end of 2018. This would require a massive expansion in production capacity that many experts viewed as unattainable in such a short time frame. The Model 3 would also incorporate new hardware and software to enable automated driving that created significant new design and production challenges. By early 2018, it was clear that Model 3 production was well behind Musk's initial ambitious projections, and criticism from analysts and the press were coming at a furious pace. As one analyst at Cowen and Co noted, "Tesla needs to slow down and more narrowly focus its vision and come up for a breath of fresh air. . . . Elon Musk needs to stop over promising and under delivering."^u

Other Projects

In 2016, Tesla opened Gigafactory 1—a giant lithium-ion battery factory built near Reno, Nevada with its partner Panasonic. Musk justified the vertical integration move by arguing that the Gigafactory 1 would ultimately drive battery production costs down by as much as 30 percent. In addition to producing batteries for Tesla automobiles, the factory would build Powerwall and Powerpack energy storage devices. The Powerwall was a device for consumers to store solar energy at home. The Powerpack enabled industrial users to manage variable energy needs and provided a source for backup power.

In August of 2016, Tesla also finalized a plan to acquire SolarCity, a company that leases and installs solar panels, for \$2.6 billion. Solar City was founded in 2006 by Peter and Lyndon Rive, Elon Musk's cousins. Musk had sketched out the concept for the company around the time of Tesla's founding and had helped his cousins start the company. He also served as its Chairman of the Board. The company had an innovative business model that enabled consumers to have solar panels installed on their roofs with no upfront costs, and to pay instead for the power generated by the panels at a price that was comparable to or less than the price they would normally pay for electricity.

In the same month that the Solar City acquisition plan was finalized, Elon Musk announced that the company would begin producing house roofs made entirely from solar panels. "I think this is a really fundamental part of achieving differentiated product strategy, where you have a beautiful roof," Musk said. "It's not a thing on the roof. It is the roof."^v By early 2018, Tesla had also built a new Gigafactory 2 in Buffalo, New York and reported that manufacture of solar roofs was already underway.

Tesla's Future

Tesla's cars had rapidly attracted a large and loyal fan base, and sales were growing at an impressive rate. However, designing and launching multiple major car platforms while building a large-scale battery company, a network of charging stations, and operating Solar City was a lot for a company to take on in its first fifteen years. This left some analysts scratching their heads. Was Tesla trying to do too much too quickly?

Discussion Questions

1. What were Musk's and Eberhard's goals in founding Tesla?
2. How would you characterize competition in the auto industry?
3. What do you think are Tesla's core competencies? Does it have any sources of sustainable competitive advantage?
4. What is your assessment of Tesla's moves into (a) mass-market cars, (b) batteries (car batteries and Powerwall), (c) solar panels? Please consider both the motivation for the moves, and the opportunities and challenges for Tesla to compete in these businesses.
5. Do you think Tesla will be profitable in all of these businesses? Why or why not?
6. What do you think Tesla's (or Elon Musk's) strategic intent is?

^a Copeland, M. V., Tesla's Wild Ride. *Fortune*, 158, no. 2 (2008):82–94.

^b Ibid.

^c Boudreau, J. In a Silicon Valley Milestone, Tesla Motors Begins Delivering Model S Electric Cars. *Oakland Tribune* (June 24, 2012), Breaking News Section.

^d Copeland, M. V., Tesla's Wild Ride. *Fortune*, 158, no. 2 (2008):82–94.

^e Williams, A. Taking a Tesla for a Status Check in New York. *New York Times* (July 19, 2009):ST.7.

^f Ibid.

^g Ramsey, M., Tesla Sets 300-Mile Range for Second Electric Car. *Wall Street Journal (Online)* (March 7, 2011).

^h Overly, S. This Government Loan Program Helped Tesla at a Critical Time. Trump Wants to Cut It. *Washington Post*, March 16, 2017.

ⁱ Sweet, C., Tesla Posts Its First Quarterly Profit. *Wall Street Journal (Online)* (May 9, 2013).

^j Boudreau, J. In a Silicon Valley Milestone, Tesla Motors Begins Delivering Model S Electric Cars. *Oakland Tribune* (June 24, 2012), Breaking News Section.

^k Anonymous. Idle Fremont Plant Gears Up for Tesla. *Wall Street Journal (Online)* (October 20, 2010).

^l Levi, M. How Tesla Pulled Ahead of the Electric-Car Pack. *Wall Street Journal* (June 21, 2013):A.11.

^m White, J. B., Corporate News: Electric Car Startup Tesla Repays U.S. Loan. *Wall Street Journal* (May 23, 2013):B.3.

ⁿ Hirsch, J., and R. Mitchell, Model X: Under the Hood of Tesla's SUV Strategy. *Los Angeles Times* September 29th, 2015.

^o Tesla Q4 Production and Delivery Report (January 3, 2016).

^p Tesla Model X Review: Fast and Flawed. *Consumer Reports* (2016).

^q Tesla Model S. *Car and Driver* (May, 2016).

^r Cobb, J., Tesla Model S Is world's Best-Selling Plug-in Car for Second Year in a Row. *HybridCars* (January 26, 2017).

^s Estimate based on Tesla quarterly production and delivery reports for quarter 1-4 in 2017. In some years Tesla only provides rounded numbers for breakdown between Model X and Model S, thus only an approximate number can be given here.

^t Sorokanich, B., Tesla Model 3: The Road & Track Review. *Road and Track* (January 12, 2018).

^u Panchadar, A., Tesla Must Stop Overpromising, Could Need More Finance: Analysts. *Reuters Business News* (November 2, 2017).

^v Milman, O., Elon Musk Leads Tesla Effort to Build House Roofs Entirely Out of Solar Panels. *The Guardian* (August 19, 2016).

OVERVIEW

The first step in formulating a company's technological innovation strategy is to assess its current position and define its strategic direction for the future. This chapter reviews some of the basic tools used in strategic analysis to assess the firm's current position and help chart its direction for the future. These tools help the manager answer such questions as:

- What threats and opportunities are most pressing in the firm's environment?
- What are the firm's key strengths and weaknesses?
- Does the firm have any sources of sustainable competitive advantage?
- What are the firm's core competencies, and what kind of value propositions do those core competencies offer to customers? How do managers want those value propositions to evolve?
- What key resources and capabilities does the firm need to develop or acquire to meet its long-term objectives?

The outputs of the analytical tools in this chapter are crucial inputs for the tools used in Chapter Seven, Choosing Innovation Projects. A coherent technological innovation strategy both leverages and enhances the firm's existing competitive position, and it provides direction for the future development of the firm. Formulating a technological innovation strategy first requires an accurate appraisal of where the firm currently is. It then requires articulating an ambitious strategic intent—one that creates a gap between a company's existing resources and capabilities and those required to achieve its intent.¹ The ability of the firm to cohesively leverage all its resources around a unified vision can enable it to create a competitive advantage that is very difficult for competitors to imitate.²

ASSESSING THE FIRM'S CURRENT POSITION

To assess the firm's current position in the marketplace, it is useful to begin with some standard tools of strategic analysis for analyzing the external and internal environment of the firm.

External Analysis

The two most commonly used tools for analyzing the external environment of the firm include Porter's five-force model and stakeholder analysis.

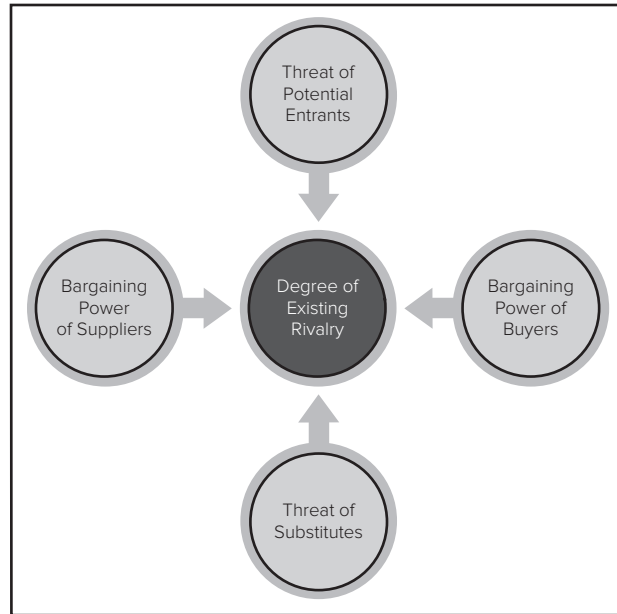
Porter's Five-Force Model

In this model, the attractiveness of an industry and a firm's opportunities and threats are identified by analyzing five forces (see Figure 6.1).³

While the five-force model was originally developed to assess industry attractiveness (i.e., "Is this a desirable industry in which to compete?"), in practice the model is often used to assess a specific firm's external environment (i.e., "What factors in the firm's external environment create threats and opportunities for the firm?"). The difference between these two approaches is subtle but important. In the former approach,

FIGURE 6.1
Porter's Five-
Force Model

Source: Michael Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors*.



the analysis focuses on the industry level, treating all competitors as roughly the same, and its objective is to ascertain whether the industry as a whole will tend to be profitable. In the latter approach, the analysis may take the perspective of a particular firm, often identifying ways in which the external forces differentially affect the firm vis-à-vis its competitors, and its objective is to identify threats and opportunities for the firm.⁴ For example, an external analysis of the discount retailing industry that is focused only on industry attractiveness might conclude that the industry is relatively unattractive given high price competition and limited opportunities to differentiate. An external analysis of the discount retailing industry focused on Walmart, on the other hand, might conclude that while the industry is a difficult one in which to be profitable, Walmart is likely to be more profitable than its competitors because its scale, its use of advanced technology for inbound and outbound logistics, and its location strategies give it considerable bargaining power over both suppliers and buyers. The latter approach will be emphasized here because it better suits our purpose of helping a particular firm to chart its strategic direction.

The five forces are:

1. **The degree of existing rivalry.** An industry's degree of rivalry is influenced by a number of factors. First, the number and relative size of competitors will shape the nature of rivalry. In general, the more firms competing that are of comparable size, the more competitive the industry will be. There are, however, exceptions to this generality. For example, **oligopolistic industries** (those that have a few large competitors) can be fiercely competitive if firms choose to engage in price wars (as happened in the personal digital assistant industry). On the other hand, oligopolistic industries can have a low degree of rivalry if the competitors choose to avoid competing head-to-head in the same market segments, or if they engage in

oligopolistic industries

Highly consolidated industries with a few large competitors.

tacit price collusion. Rivalry is also influenced by the degree to which competitors are differentiated from each other. For example, if competitors are highly differentiated, they will experience less direct rivalry because their products are likely to appeal to different market segments. For example, even though Genzyme operated in the extremely competitive biotech industry, its unique focus on orphan drugs meant that it typically was not competing head-on with other rivals for its customers. This enabled it to charge much higher margins on its products. Demand conditions also influence degree of rivalry. When demand is increasing, there are more revenues to go around and firms will experience less competitive pressure. On the other hand, when demand is declining, firms have to compete for a shrinking pool of revenues, and competition can become very aggressive. In declining industries, high **exit barriers** (fixed capital investments, emotional attachment to the industry, etc.) can also intensify rivalry by making firms reluctant to abandon the industry.

exit barriers

Costs or other commitments that make it difficult for firms to abandon an industry (large fixed-asset investments, emotional commitment to the industry, etc.).

entry barriers

Conditions that make it difficult or expensive for new firms to enter an industry (government regulation, large start-up costs, etc.).

2. **Threat of potential entrants.** The threat of potential entrants is influenced by both the degree to which the industry is likely to attract new entrants (e.g., is it profitable, growing, or otherwise alluring?) and the height of **entry barriers**. Entry barriers can include such factors as large start-up costs, brand loyalty, difficulty in gaining access to suppliers or distributors, government regulation, threat of retaliation by existing competitors, and many others. While profitability and growth may attract new entrants, entry barriers will deter them. For example, while high projected growth in the smart phone market attracts potential entrants to this market, the challenge of competing against large, well-established, and efficient competitors such as Nokia and Ericsson deters many entrants. To effectively compete against these companies requires that an entrant be able to manufacture, advertise, and distribute on a large scale, suggesting significant start-up costs for an entrant to achieve a competitive position. However, some of these capabilities could be obtained through partnerships with other firms, such as having contract manufacturers handle production and having mobile phone service providers handle distribution, thereby lowering start-up costs.
3. **Bargaining power of suppliers.** The degree to which the firm relies on one or a few suppliers will influence its ability to negotiate good terms. If there are few suppliers or suppliers are highly differentiated, the firm may have little choice in its buying decision, and thus have little leverage over the supplier to negotiate prices, delivery schedules, or other terms. On the other hand, if suppliers are very abundant and/or are not highly differentiated, the firm may be able to force the suppliers to bid against one another for the sale. The amount the firm purchases from the supplier is also relevant. If the firm's purchases constitute the bulk of a supplier's sales, the supplier will be heavily reliant upon the firm and the supplier will have little bargaining power. Likewise, if the supplier's sales constitute a large portion of the firm's purchases, the firm will be heavily reliant upon the supplier and the supplier will have more bargaining power. For example, manufacturers that sell to Walmart often have little bargaining power because Walmart's enormous volume often makes its purchases a significant portion of a manufacturer's yearly sales. Walmart's suppliers typically have little bargaining power. When Intel sells to personal computer manufacturers, on the other hand, it typically wields

switching costs

Factors that make it difficult or expensive to change suppliers or buyers, such as investments in specialized assets to work with a particular supplier or buyer.

vertical integration

Getting into the business of one's suppliers (backward vertical integration) or one's buyers (forward vertical integration). For example, a firm that begins producing its own supplies has practiced backward vertical integration, and a firm that buys its distributor has practiced forward vertical integration.

complements

Products or services that enhance the usefulness or desirability of another product.

considerable supplier bargaining power. When computer manufacturers consider potential suppliers for microprocessors, they often have little choice but to go with Intel—many consumers demand that their systems include Intel microprocessors, and the majority of personal computer hardware and software has been optimized for the Intel architecture. If the firm faces **switching costs** that make it difficult or expensive to change suppliers, this will also increase the supplier's bargaining power. Finally, if the firm can backward **vertically integrate** (i.e., produce its own supplies), this will lessen supplier bargaining power, and if the supplier can threaten to forward vertically integrate into the firm's business, this will increase the supplier's bargaining power.

4. **Bargaining power of buyers.** Many of the same factors that influence the bargaining power of suppliers have an analogous role with the bargaining power of buyers. The degree to which the firm is reliant on a few customers will increase the customer's bargaining power, and vice versa. If the firm's product is highly differentiated, buyers will typically experience less bargaining power, and if the firm's product is undifferentiated, buyers will typically experience greater bargaining power. If buyers face switching costs, this is likely to lower their bargaining power, and if the firm faces switching costs to work with other buyers, this will increase the buyer's bargaining power. Finally, if the buyers can threaten to backward vertically integrate, this will increase their bargaining power, and if the firm can threaten to forward vertically integrate, it will lower customer bargaining power.
5. **Threat of substitutes.** Substitutes are products or services that are not considered competitors, but fulfill a strategically equivalent role for the customer. For example, Starbucks may consider other coffeehouses as competitors, but other social destinations (such as bars or restaurants) or beverages (such as soft drinks or beer) as substitutes. The more potential substitutes there are, and the closer they are in function to the firm's product or service, the greater the threat of substitution. Furthermore, the threat of substitutes will also be shaped by the relative price. For example, while traveling by bus versus air is not particularly comparable in terms of speed, traveling by bus is often considerably less expensive; thus, it poses a threat of substitution, particularly for shorter distances to be traveled. Note that distinguishing between a competitor and a substitute depends on how the industry is defined. For example, if one considers the *airline* industry as the unit of analysis, then bus service is a substitute for airlines. However, if one were considering the *transportation* industry as the unit of analysis, then bus services would be competitors of airlines.

Recently, Porter has acknowledged the role of **complements**.⁵ As has been discussed in several of the earlier chapters, complements are products that enhance the usefulness or desirability of a good. For example, software is an important complement for computers, and gasoline is an important complement for automobiles. The availability, quality, and price of complements will influence the threats and opportunities posed by the industry. It is important to consider (1) how important complements are in the industry, (2) whether complements are differentially available for the products of various rivals (impacting the attractiveness of their goods), and (3) who captures the value offered by the complements. For example, desktop printer manufacturers such as

Hewlett Packard and Lexmark make a considerable portion of their desktop printing profits from the ink cartridges that consumers have to replace when empty. The printer manufacturers thus design the printer cartridges to be specific to each printer model, avoiding standardized designs that would facilitate consumers purchasing printer cartridges from other vendors for their Hewlett Packard and Lexmark printers. The market for ink cartridges is so lucrative, however, that a number of third-party vendors have emerged that either clone Hewlett Packard and Lexmark cartridges or offer to refill the consumer's empty cartridges with ink.

Stakeholder Analysis

stakeholder
Any entity that has an interest ("stake") in the organization.

Stakeholder models are often used for both strategic and normative purposes. A strategic *stakeholder analysis* emphasizes the stakeholder management issues that are likely to impact the firm's financial performance, while a *normative stakeholder analysis* emphasizes the stakeholder management issues the firm ought to attend to due to their ethical or moral implications.⁶ Typically, the first step of a stakeholder analysis is to identify all the parties that will be affected by the behavior of the firm (and thus have a "stake" in the firm). For each party, the firm identifies what that stakeholder's interests are, what resources they contribute to the organization, what claims they are likely to make on the organization, and which will be most important from the firm's perspective. Stakeholders include (but are not limited to) stockholders, employees, customers, suppliers, lenders, the local community, government, and rivals (see Figure 6.2).

Internal Analysis

The analysis of the internal environment of the firm most often begins with identifying the firm's strengths and weaknesses. Sometimes this task is organized by examining each of the activities of the value chain (see Figure 6.3).⁷ In Michael Porter's model of a value chain, activities are divided into primary activities and support activities.

FIGURE 6.2
Stakeholder
Analysis

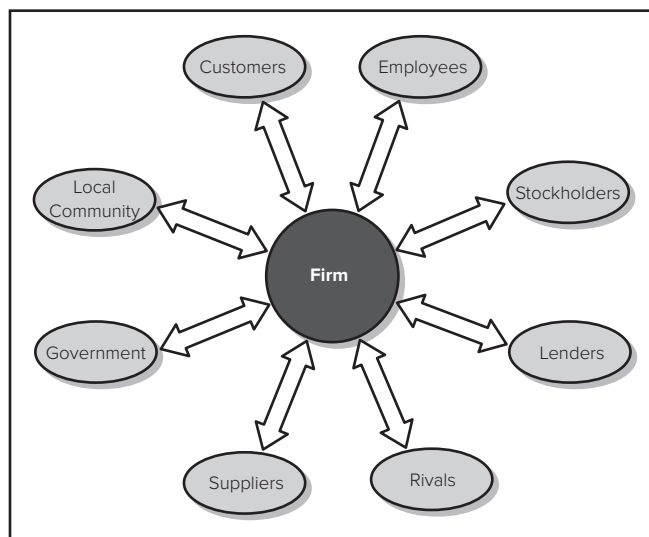
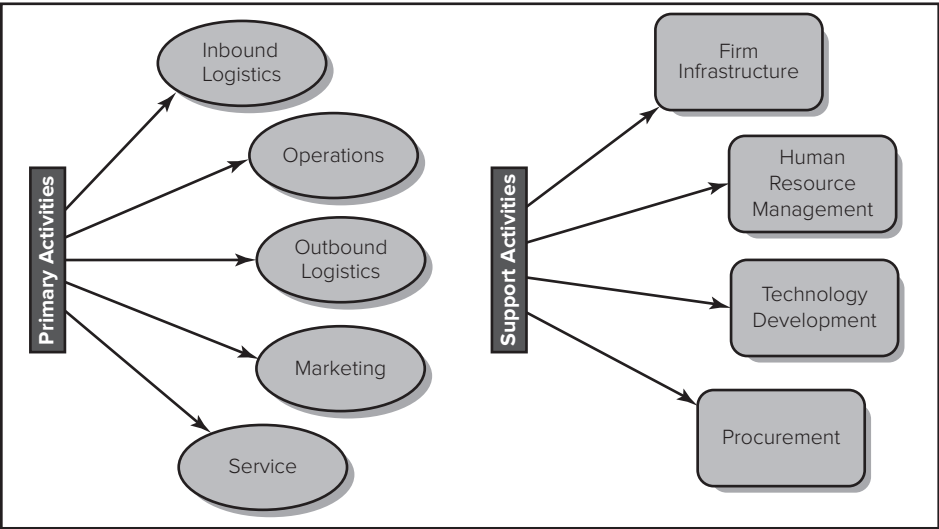


FIGURE 6.3
Porter's Value Chain

Source: Michael Porter, *Competitive Advantage: Creating and Sustaining Superior Performance*.



Primary activities include *inbound logistics* (all activities required to receive, store, and disseminate inputs), *operations* (activities involved in the transformation of inputs into outputs), *outbound logistics* (activities required to collect, store, and distribute outputs), *marketing and sales* (activities to inform buyers about products and services and to induce their purchase), and *service* (after-sales activities required to keep the product or service working effectively). Support activities include *procurement* (the acquisition of inputs, but not their physical transfer, as that would be covered in inbound logistics), *human resource management* (activities such as recruiting, hiring, training, and compensating personnel), *technology development* (activities involved in developing and managing equipment, hardware, software, procedures, and knowledge necessary to transform inputs into outputs), and *infrastructure* (functions such as accounting, legal counsel, finance, planning, public affairs, government relations, quality assurance, and general management necessary to ensure smooth functioning of the firm). This generic model can be adapted to better fit a particular firm's needs. For example, for a biotechnology firm or software developer, research and development is likely to be a primary activity and inbound logistics may be insignificant.

Each activity can then be considered from the point of view of how it contributes to the overall value produced by the firm, and what the firm's strengths and weaknesses are in that activity. For example, Figure 6.4 illustrates what a value-chain analysis might look like for Take-Two Interactive Software, which produces the Grand Theft Auto video game. In the figure, research and development is considered a primary activity, but the support activity of the technology development is not considered. Because all the game manufacturing is performed by the console producers rather than by Take-Two its primary technology activities center on design of the games, which is covered in the research and development section.

FIGURE 6.4
Example of Value-Chain Analysis for Take-Two Interactive Software

Value-Chain Activity	Strengths	Weaknesses
Inbound Logistics Insignificant; few inputs necessary.		
Research & Development Ability to incorporate state-of-the-art graphics capabilities, sound, and innovative themes significantly differentiates the product in the eyes of the consumer.	Take-Two game maximized the polygon processing potential of the video game console, making play more lifelike. Parallel development processes kept the development cycles short.	Lack of experience in developing online games could become major liability if the market for playing games over the Internet takes off.
Operations Company focuses on producing a few very high-quality games, introducing a new version every year. Once designed, games are manufactured by the video game console producers (e.g., Sony).	Concentrating on a few games enables firm to focus significant resources on ensuring that the game is a hit.	Concentrating on a few games could be risky—if a game fails, the company may have no revenues to support operations. Take-Two is completely reliant on console manufacturers for the right to develop compatible games and for manufacture of games.
Outbound Logistics Products are sold through game retailers (e.g., Gamestop), general merchandisers (e.g., Best Buy), and occasionally through bundling arrangements with video console producers, avoiding expense of maintaining the company's own retail stores. On initial launch, Take-Two had signed an exclusive deal with Sony to offer Grand Theft Auto exclusively for PlayStation 2.	Existing retailers already have excellent market penetration, providing rapid and wide deployment of the games. Since Sony PlayStation 2 was the No. 1 video game console, signing an exclusive with Sony enabled Take-Two to tap a large market.	Using retailers gives company little discretion over store placement, promotion, and pricing.
Marketing Helps build customer awareness of products, builds brand image, accelerates sales. Uses Web sites, advertisements in gaming magazines, billboards. Grand Theft Auto is targeted toward the adult market.	GTA had successfully established an image as being leading edge, and was the No. 1 game in 2002. In 2008, Grand Theft Auto: San Andreas made the "Top 20 console games of all times" list by selling 12 million copies.	Some consumers, retailers, and regulatory agencies criticized Grand Theft Auto's violence and sexual images, potentially tarnishing the company's image.
Service Phone line for technical support helps customers resolve problems in using the product.	Take-Two has had relatively few returns or warranty problems.	

continued

concluded

Value-Chain Activity	Strengths	Weaknesses
Firm Infrastructure Legal department negotiates license rights for games.		Copyright infringement suits by other game producers are becoming more frequent.
Human Resource Management Hiring and retaining skilled and creative developers is crucial for the production of high-quality games. Company had 2002 full-time employees in 2007.	Employees are not unionized. Employee stock option plan improves loyalty and morale.	
Procurement Necessary to acquire rights to use copyright-protected characters and music.	Thus far, Take-Two has been very successful in obtaining rights to use copyrighted materials.	
Sources: S. Balasubramanian, A. Kim, L. Lei, and S. Singh, "Beyond the Mayhem: Take-Two Interactive Software," New York University teaching case, 2003; www.Take2games.com.		

tacit resources

Resources of an intangible nature (such as knowledge) that cannot be readily codified.

socially complex resources

Resources or activities that emerge through the interaction of multiple individuals.

causal ambiguity

The relationship between a resource and the outcome it produces is poorly understood (the causal mechanism is ambiguous).

Once the key strengths and weaknesses are identified, the firm can assess which strengths have the potential to be a source of sustainable competitive advantage. This helps the firm gain valuable perspective on which of its activities and resources should be further leveraged in its articulation of its strategic intent for the future.

To be a potential source of sustainable competitive advantage, resources must be *rare, valuable, durable, and inimitable*.⁸ Resources that are rare and valuable may yield a competitive advantage, but that advantage will not be sustainable if the firm is incapable of keeping the resources, or if other firms are capable of imitating them. For example, a positive brand image can be a rare and valuable resource, but it requires ongoing investment to sustain. If a firm lacks the capital to reinvest in its brand image, it will erode. Furthermore, many valuable resources are quickly imitated by other firms. Technological advances are reverse-engineered, skillful marketing campaigns are copied, innovative human resource practices are adopted by imitators, and so on. Some resources, however, are not readily imitable. For example, if valuable resources are **tacit** (i.e., they cannot be readily codified in written form), **socially complex** (i.e., they arise through the complex interaction of multiple people), or **causally ambiguous** (i.e., it is unclear how the resource gives rise to value), they will be extremely difficult to imitate.⁹ For example, *talent* is typically considered to be a tacit and causally ambiguous resource. It is thought to be an inherent trait that cannot be trained, and the mechanisms by which individuals acquire it or tap it are poorly understood. A first-mover advantage is a path-dependent advantage that cannot be copied—once a firm has become the first mover in a category, other firms no longer have the opportunity to be first. Once the firm has established a baseline internal analysis, it can move on to identifying its core competencies and formulate its strategic intent.

IDENTIFYING CORE COMPETENCIES AND DYNAMIC CAPABILITIES

Core Competencies

A company's core competencies are typically considered to be those that differentiate it strategically. A core competency is more than just a core technology. A core competency arises from a firm's ability to combine and harmonize multiple primary abilities in which the firm excels into a few key building blocks of specialized expertise. Competencies often combine different kinds of abilities, such as abilities in managing the market interface (e.g., advertising, distribution), building and managing an effective infrastructure (e.g., information systems, logistics management), and technological abilities (e.g., applied science, process design).¹⁰ This combination and harmonization of multiple abilities make core competencies difficult to imitate. Consider, for example, Sony's core competency in miniaturization.¹¹ This competency arises from the harmonization of multiple technologies (liquid crystal displays, semiconductors, etc.) and is leveraged into multiple markets (televisions, radios, personal digital assistants, etc.). A firm's core competencies also depend on building high-quality relationships across different functions and business units.

Prahalad and Hamel compare core competencies to roots, from which grow core products such as major components or subassemblies. Core products, in turn, give rise to business units, whose fruits are the various end products of the company (see Figure 6.5).

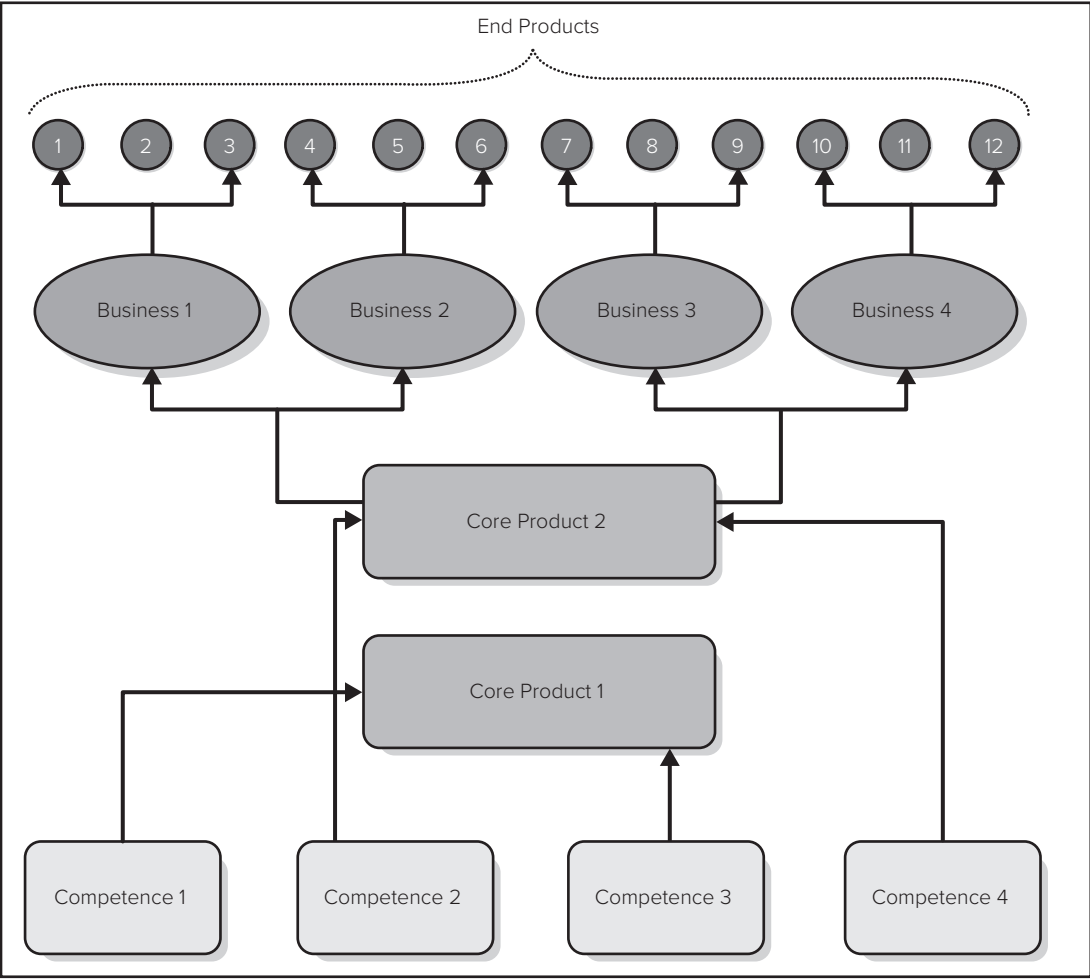
Several core competencies may underlie an individual business unit, and several business units may draw upon the same core competency. This indicates the organization's structure and incentives must encourage cooperation and exchange of resources across strategic business unit boundaries. If managers or resources are wed too closely to their business units, there will be underinvestment in the development and leverage of core competencies.¹² Prahalad and Hamel go so far as to argue that strategic business units should be expected to bid for people in the firm who have particular skills to contribute to a project. Instead of viewing individuals as being employed by a particular strategic business unit, individuals should be considered corporate assets that can be redeployed across the organization.

Prahalad and Hamel offer the following tests to identify the firm's core competencies:

1. Is it a significant source of competitive differentiation? Does it provide a unique signature to the organization? Does it make a significant contribution to the value a customer perceives in the end product? For example, Sony's skills in miniaturization have an immediate impact on the utility customers reap from its portable products.
2. Does it transcend a single business? Does it cover a range of businesses, both current and new? For example, Honda's core competence in engines enables the company to be successful in businesses as diverse as automobiles, motorcycles, lawn mowers, and generators.
3. Is it hard for competitors to imitate? In general, competencies that arise from the complex harmonization of multiple technologies will be difficult to imitate. The competence may have taken years (or decades) to build. This combination of resources and embedded skills will be difficult for other firms to acquire or duplicate.

FIGURE 6.5
Visualizing the Firm’s Core Competencies, Core Products, Business Units, and End Products

Source: C. K. Prahalad and G. Hamel, “The Core Competence of the Corporation,” *Harvard Business Review*, May–June 1990.



According to Prahalad and Hamel, few firms are likely to be leaders in more than five or six core competencies. If a company has compiled a list of 20 to 30 capabilities, it probably has not yet identified its true core competencies. By viewing the business as a portfolio of core competencies, managers are better able to focus on value creation and meaningful new business development, rather than cost cutting or opportunistic expansion.¹³

The Risk of Core Rigidities

Sometimes the very things that a firm excels at can enslave it, making the firm rigid and overly committed to inappropriate skills and resources.¹⁴ Incentive systems may

evolve that favor activities that reinforce the firm's core competencies. The organizational culture may reward employees who are most closely connected to core competencies with higher status and better access to other organizational resources. While these systems and norms can prove beneficial in reinforcing and leveraging the firm's existing core competencies, they can also inhibit the development of new core competencies. For example, a firm's emphasis on a scientific discipline that is central to its core competency can make the firm less attractive to individuals from other disciplines. Rewards for engaging in core competency activities can discourage employees from pursuing more exploratory activities. Finally, as noted in Chapter Four, knowledge accumulation tends to be very path dependent. Firms that have well-developed knowledge sets along a particular trajectory may find it very hard to assimilate or utilize knowledge that appears unrelated to that trajectory, potentially limiting the firm's flexibility.¹⁵

Dynamic Capabilities

In fast-changing markets, it can be extremely useful for a firm to develop a core competency in responding to change. Whereas in Prahalad and Hamel's model, core competencies relate to sets of specific core products, it is also possible for a firm to develop core competencies that are not specific to any set of technologies or products, but rather to a set of abilities that enable it to quickly reconfigure its organizational structure and routines in response to new opportunities.¹⁶ Such competencies are termed **dynamic capabilities**. Dynamic capabilities enable firms to quickly adapt to emerging markets or major technological discontinuities. For example, Corning has made its own evolvability one of its most important core competencies. It invests heavily in research in areas likely to provide scientific breakthroughs (such as opal glasses and their solvents). It develops pilot plants to experiment with new products and production processes.¹⁷ It even manages its relationships with alliance partners not as individual relationships focused on particular projects, but rather as an integrative and flexible system of capabilities that extend the firm's boundaries.¹⁸

dynamic capabilities
A set of abilities that make a firm more agile and responsive to change.

STRATEGIC INTENT

A firm's purpose is to create value. This entails more than just improving operations or cutting costs; it means leveraging corporate resources to create more performance for customers, more well-being for employees, and more returns for shareholders. This is accomplished through developing new businesses and markets, and leveraging corporate resources, all guided by the firm's *strategic intent*.¹⁹

A company's strategic intent is a long-term goal that is ambitious, builds upon and stretches the firm's existing core competencies, and draws from all levels of the organization. Hamel and Prahalad's examples include Canon's obsession with overtaking Xerox in copiers, Apple's mission of ensuring that every individual has a personal computer, and Yahoo's goal of becoming the world's largest Internet shopping mall. Typically, a strategic intent looks 10 to 20 years ahead and establishes clear milestones for employees to target.²⁰ This forward-looking orientation is crucial; without it companies can easily become focused on markets they have served in

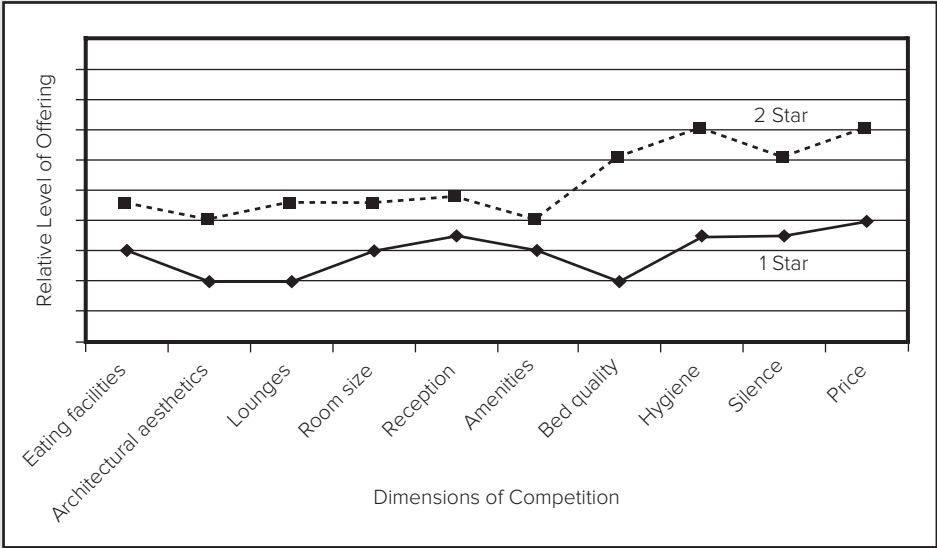
Research Brief Blue Ocean Strategy

In a series of articles and a book^a, Renée Mauborgne and W. Chan Kim describe firms who crafted what they call “blue ocean” strategies by innovating in a way that allowed them to enter untapped market space. In most industries, the rules of the game are well-understood and accepted, and firms compete by trying to outdo each other on the accepted dimensions of competition. Each firm hopes to capture a greater share of existing demand, and as the industry becomes crowded, the likelihood of firm profits or growth diminishes. Cut-throat competition turns the ocean bloody (also known as “red ocean”). Blue oceans refer to untapped market space that firms create by redefining the dimensions of

competition. They are uncharted, and there are no (or few) competitors. Blue ocean strategies are thus fundamentally about differentiation through innovation.

Mauborgne and Chan suggest that firms can identify “blue ocean” strategies by first using a visualization tool, the “strategy canvas,” to help them understand how different players are competing in an industry, and how they might choose to compete differently. The horizontal axis lists the factors that the industry competes on/invests in, and the vertical axis indicates “high” or “low.” Managers can then plot “value curves” for different product offerings. For example, you might draw a graph as indicated in the figure below.

Red Ocean Strategy	Blue Ocean Strategy
Compete in existing market space	Create uncontested market space
Beat the competition	Make the competition irrelevant
Exploit existing demand	Create and capture new demand
Make the value-cost trade-off	Break the value-cost trade-off
Align the whole system of a firm's activities with its strategic choice of differentiation or low cost.	Align the whole system of a firm's activities in pursuit of differentiation and low cost.



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Managers can then challenge the industry's strategic logic by asking the following four questions:

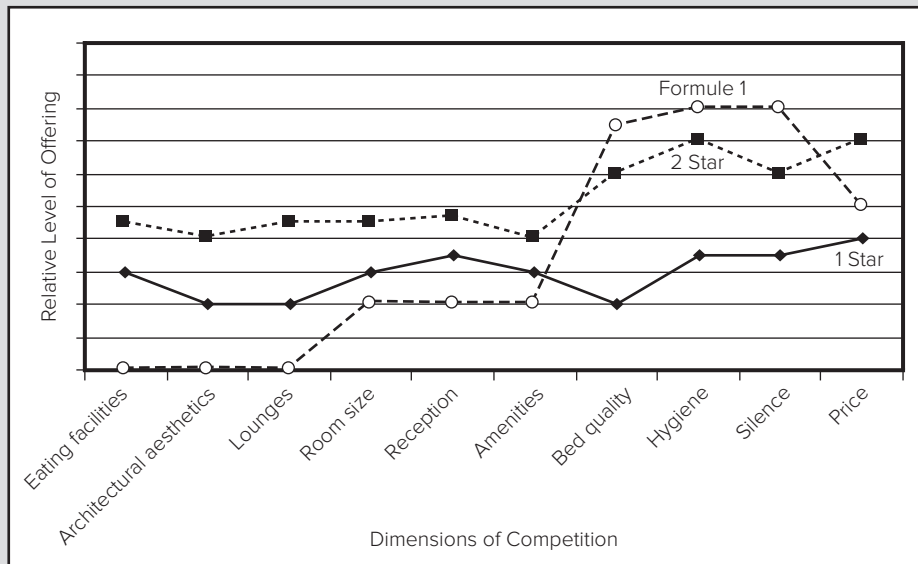
1. Which of the factors that the industry takes for granted should be *eliminated*?
2. Which factors should be *reduced well below* the industry's standard?
3. Which factors should be *raised well above* the industry's standard?
4. Which factors should be *created* that the industry has never offered?

For example, returning to the hotel example Formule 1 found a successful market space by

rejecting the idea that all hotel customers need eating facilities, lounges, and large rooms. Instead, some customers would prefer a hotel that skimmed on these things and instead provided very quiet and clean rooms with high-quality beds at a moderate price:

Mauborgne and Chan argue that the Nintendo Wii, Cirque du Soleil, and Southwest Airlines' business model are all examples of successful "blue ocean" strategies.

^a Adapted from Kim, W. C. and R. Mauborgne, *Blue Ocean Strategy* (Boston: Harvard Business School Press, 2005).



the past. Focusing on the firm's existing markets results in the development of products and services that meet current market requirements, rather than future market requirements. Successful and innovative firms question existing price-performance assumptions. They lead customers by developing and introducing products that extend well beyond current market requirements and help mold the market's expectations for the future.²¹

Once the strategic intent has been articulated, the company should be able to identify the resources and capabilities required to close the gap between the strategic intent

Theory in Action

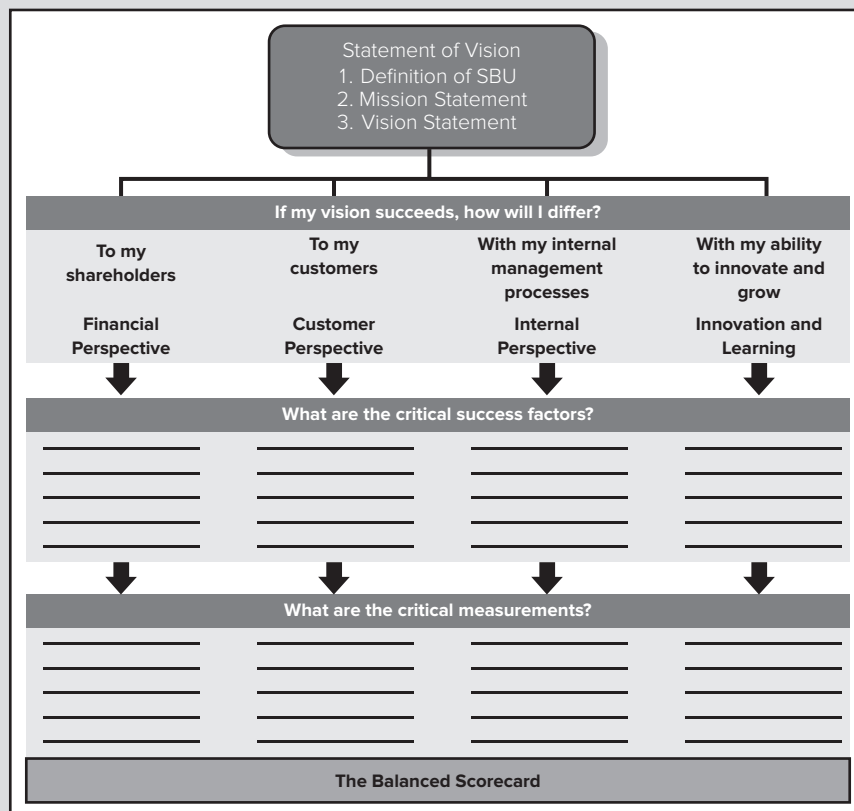
The Balanced Scorecard

Robert Kaplan and David Norton point out that a firm's methods of measuring performance will strongly influence whether and how the firm pursues its strategic objectives. They argue that effective performance measurement must be more than simple reliance on financial indicators; it must be a coherent and integral part of the management process. They proposed a method, the "balanced scorecard," that they argue can motivate breakthrough improvements in product, process, customer, and market development.⁹ The balanced scorecard (see Figure 6.6) emphasizes four perspectives the firm should take in formulating goals that target critical success factors and in defining measures:

1. **Financial perspective.** Goals might include such things as "meet shareholder's expectations" or "double our corporate value in seven years." Measures might include return on capital, net cash flow, and earnings growth.
2. **Customer perspective.** Goals might be to "improve customer loyalty," "offer best-in-class customer service," or "increase customer satisfaction." Measures might include market share, percentage of repeat purchases, customer satisfaction surveys, and so on.
3. **Internal perspective.** Goals might include such things as "reduce internal safety incidents," "build best-in-class franchise teams," or "improve

FIGURE 6.6
The Balanced Scorecard

Source: R. Kaplan and D. Norton, "Putting the Balanced Scorecard to Work," *Harvard Business Review*, September–October 1993.



concluded

inventory management.” Measures might include the number of safety incidents per month, franchise quality ratings, stockout rates, and inventory costs.

4. **Innovation and learning perspective.** Goals might include such things as “accelerate and improve new product development” or “improve employee skills.” Measures might include the percentage of sales from products developed within the past five years, average length of the new product development cycle, or employee training targets.

Kaplan and Norton acknowledge that the balanced scorecard model often has to be adapted to fit different markets and businesses, but many firms (including IBM, Philips Electronics, Apple, and Advanced Micro

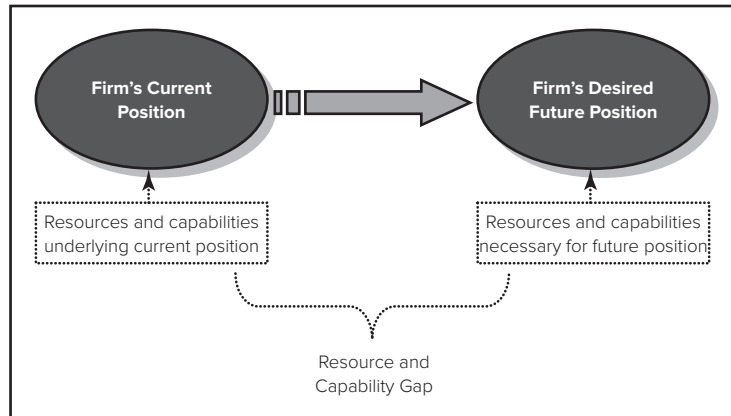
Electronics) in many different industries (including electronics, petrochemicals, and health care) are finding the balanced scorecard useful.^b In fact, a 2002 survey by Bain & Company found that approximately 50 percent of Fortune 1000 companies in the United States and 40 percent in Europe use some version of the balanced scorecard.^c

^a R. Kaplan and D. Norton, “Putting the Balanced Scorecard to Work,” *Harvard Business Review*, September–October 1993, pp. 134–47; and R. Kaplan and D. Norton, “The Balanced Scorecard—Measures That Drive Performance,” *Harvard Business Review*, January–February 1992, pp. 71–80.

^b Kaplan and Norton, “Putting the Balanced Scorecard to Work.”

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FIGURE 6.7
Identifying the
Resource and
Capability Gap



and the current position (see Figure 6.7). This includes identifying any technological gap. Articulating the company’s strategic intent enables the company to focus its development efforts and choose the investments necessary to develop strategic technologies and incorporate them into the company’s new products.²² Many companies are now pairing the articulation of their strategic intent with a multidimensional performance measurement system, such as the balanced scorecard, as discussed in the Theory in Action section.

Summary of Chapter

1. The first step in establishing a coherent strategy for the firm is assessing the external environment. Two commonly used models of external analysis are Porter’s five-force model and stakeholder analysis.
2. Porter’s five-force model entails assessing the degree of existing rivalry, threat of potential entrants, bargaining power of suppliers, bargaining power of customers,

and threat posed by substitutes. Recently Porter added a sixth force, the role of *complements*.

3. Stakeholder analysis involves identifying any entity with an interest in the firm, what it wants from the company, and what claims it can make on the company.
4. To analyze the internal environment, firms often begin by identifying strengths and weaknesses in each activity of the value chain. The firm can then identify which strengths have the potential to be a source of sustainable competitive advantage.
5. Next the firm identifies its core competencies. Core competencies are integrated combinations of abilities that distinguish the firm in the marketplace. Several core competencies may underlie each business unit, and several business units may draw upon the same core competency.
6. Sometimes core competencies can become core rigidities that limit the firm's ability to respond to a changing environment.
7. Dynamic capabilities are competencies that enable a firm to quickly reconfigure the firm's organizational structure or routines in response to change in the firm's environment or opportunities.
8. A firm's strategic intent is the articulation of an ambitious long-term (10 to 20 years out) goal or set of goals. The firm's strategic intent should build upon and stretch its existing core competencies.
9. Once the firm articulates its strategic intent, managers should identify the resources and capabilities that the firm must develop or acquire to achieve its strategic intent.
10. The balanced scorecard is a measurement system that encourages the firm to consider its goals from multiple perspectives (financial, customer, business process, and innovation and learning) and establish measures that correspond to each of those perspectives.

Discussion Questions

1. What is the difference between a strength, a competitive advantage, and a sustainable competitive advantage?
2. What makes an ability (or set of abilities) a core competency?
3. Why is it necessary to perform an external and internal analysis before the firm can identify its true core competencies?
4. Pick a company you are familiar with. Can you identify some of its core competencies?
5. How is the idea of *strategic intent* different from models of strategy that emphasize achieving a fit between the firm's strategies and its current strengths, weaknesses, opportunities, and threats (SWOT)?
6. Can a strategic intent be too ambitious?

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