Strategic Management and Competitive Advantage

Concepts

Second Edition

Jay B. Barney
The Ohio State University

William S. Hesterly
The University of Utah

Upper Saddle River, New Jersey 07458

V R I O

"VALUE. RARITY. IMITABILITY. ORGANIZATION."

What Is It?

This book is not just a list of concepts, models and theories. It is the first undergraduate textbook to introduce a **theory-based, multi-chapter organizing framework** to add additional structure to the field of strategic management.

"VRIO" is a mechanism that integrates two existing theoretical frameworks: the positioning perspective and the resource-based view. It is the primary tool for accomplishing internal analysis. It stands for four questions one must ask about a resource or capability to determine its competitive potential:

1. **The Question of Value:** Does a resource enable a firm to exploit an environmental opportunity, and/or neutralize an environmental threat?
2. **The Question of Rarity:** Is a resource currently controlled by only a small number of competing firms?
3. **The Question of Imitability:** Do firms without a resource face a cost disadvantage in obtaining or developing it?
4. **The Question of Organization:** Are a firm's other policies and procedures organized to support the exploitation of its valuable, rare, and costly-to-imitate resources?

What's the Benefit of the VRIO Framework?

The VRIO framework is the organizational foundation of the text. **It creates a decision-making framework for students** to use in analyzing case and business situations.

Students tend to view concepts, models, and theories (in all of their coursework) as fragmented and disconnected. Strategy is no exception. This view encourages rote memorization, not real understanding. VRIO, by serving as a consistent framework, connects ideas together. This encourages real understanding, not memorization.

This understanding enables students to better analyze business cases and situations—the goal of the course.

The VRIO framework makes it possible to discuss the formulation and implementation of a strategy simultaneously, within each chapter.

Because the VRIO framework provides a simple integrative structure, we are actually able to address issues in this book that are largely ignored elsewhere— including discussions of vertical integration, outsourcing, real options logic, and mergers and acquisitions, to name just a few.

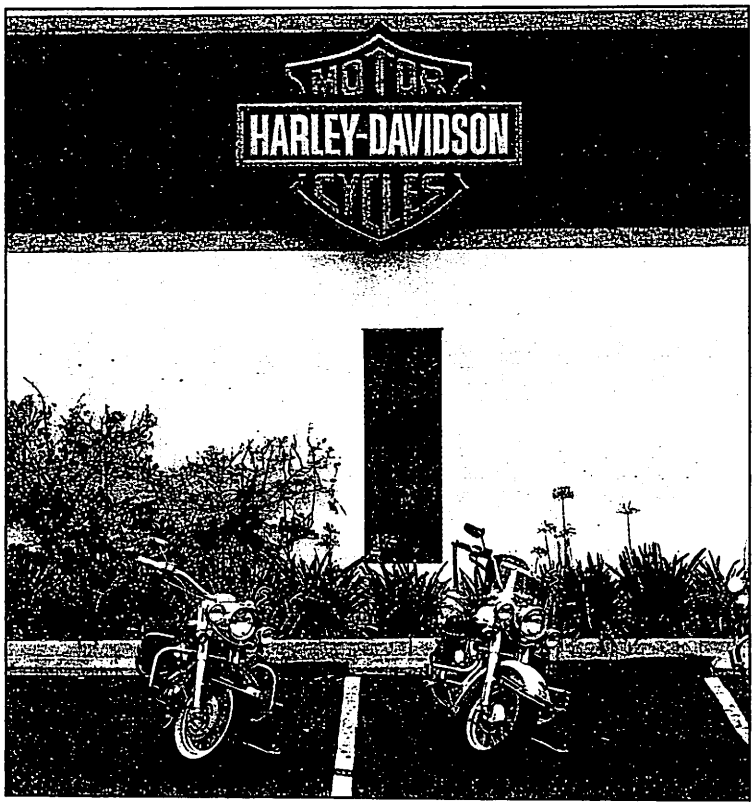
CHAPTER 3

Evaluating a Firm's Internal Capabilities

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

1. Describe the critical assumptions of the resource-based view.
2. Describe four types of resources and capabilities.
3. Apply the VRIO framework to identify the competitive implications of a firm's resources and capabilities.
4. Apply value chain analysis to identify a firm's valuable resources and capabilities.
5. Describe the kinds of resources and capabilities that are likely to be costly to imitate.
6. Describe how a firm uses its structure, formal and informal control processes, and compensation policy to exploit its resources.
7. Discuss how the decision of whether to imitate a firm with a competitive advantage affects the competitive dynamics in an industry.
8. Discuss how firms can exploit their current resources or develop new resources through their international operations.



Your Grandpa's Harley

Harley Davidson has one of the best known brands in the world. To most consumers, Harley Davidson stands for independence, freedom, rebelliousness, and toughness. Its motorcycles are big and loud, its owners fiercely loyal. This image began in the 1950s with the Marlon Brando movie *The Wild Bunch* and was reinforced in the 1960s with the movie *Easy Rider*. Even in its worst days, during the 1980s, when Harley

Davidson almost went out of business, the image of its motorcycles, built up over a period of 50 years, remained unchanged. Even today, the Harley brand still promises the biggest, baddest, loudest ride on the street.

Unfortunately, the median age of a Harley buyer in 2006 was 47. Hardly the young, rebellious youth image normally associated with Harley.

Part of Harley's challenge in addressing the youth market is the price of its motorcycles. A top-end new Harley is likely to cost over $36,000. At that price, only financially secure—that is, older—riders may be able to afford a Harley.

However, some observers think that Harley's problems are more fundamental than just price. Younger riders seem to prefer Japanese and Italian high-performance motorcycles manufactured by Honda, Suzuki, Yamaha, Kawasaki, and Ducati. These motorcycles are just the opposite of Harleys—low to the ground, lightweight, and covered by fairings that reduce wind resistance. These sports bikes have low centers of gravity, which enable their riders to scream at high speed around even the tightest corners. Riding a big, heavy, and loud Harley may feel great on long road trips on freeways, but the sports bikes will outperform the bigger bikes every time on a winding road.

So, is it time for Harley Davidson to abandon its traditional brand or at least to augment its brand by introducing its own sports motorcycles? It turns out that Harley Davidson has introduced such a motorcycle, under the brand name Buell. It hasn't sold very well. Does this mean that Harley should abandon its effort to build a sports motorcycle, or should the low sales of the Buell product line lead Harley to refocus its efforts on building new and better sports bikes?

Answering this question depends on just how powerful Harley's brand really is. As Harley contemplates its future, it will need to consider several issues. For example, although younger riders prefer to purchase sports motorcycles, by about age 35 most committed riders abandon relatively uncomfortable sports motorcycles in favor of larger, more comfortable bikes. Also, the Harley brand has international appeal. In 2006, 22.5 percent of all Harleys were sold in China and Japan. Indeed, Harley claims 26 percent of the market for heavyweight motorcycles in Japan. The Harley image is also attractive in England and Germany, as well as other European countries. Finally, the loyalty of Harley's customers is legendary. One Harley owner said it best: "You're not going to change the bike you ride when you've got its name tattooed on your shoulder." And most of those tattoos say "Harley Davidson."

Can such a powerful brand, built up over so many years, help Harley Davidson overcome its growing image as your grandfather's motorcycle company?

Source: J. Weber (2006). "Harley just keeps on cruisin'." *BusinessWeek*, November 6, pp. 71 +.

Harley Davidson has a unique resource—its brand name. The value of this resource going forward and whether or not it should try to change its position are both uncertain.

The Resource-Based View of the Firm

In Chapter 2, we saw that it was possible to take some theoretical models developed in economics—specifically the S-C-P model—and apply them to develop tools for analyzing a firm's external threats and opportunities. The same is true for analyzing a firm's internal strengths and weaknesses. However, whereas the tools described in Chapter 2 were based on the S-C-P model, the tools described in this chapter are based on the **resource-based view** of the firm, or the **RBV.** The RBV is a model of firm performance that focuses on the resources and capabilities controlled by a firm as sources of competitive advantage.[1]

What Are Resources and Capabilities?

Resources in the RBV are defined as the tangible and intangible assets that a firm controls that it can use to conceive of and implement its strategies. Examples of resources include a firm's factories (a tangible asset), its products (a tangible asset), its reputation among customers (an intangible asset), and teamwork among its managers (an intangible asset). Harley's tangible assets include its factories and distribution system. Harley's intangible assets include its brand.

Capabilities are a subset of a firm's resources and are defined as the tangible and intangible assets that enable a firm to take full advantage of the other resources it controls. That is, capabilities alone do not enable a firm to conceive of and implement its strategies, but they enable a firm to use other resources to conceive of and implement such strategies. Examples of capabilities might include a firm's marketing skills and teamwork and cooperation among its managers. At Harley, the cooperation among marketing and manufacturing to produce the "biggest, baddest, loudest" ride on the road is an example of a capability.

A firm's resources and capabilities can be classified into four broad categories: financial resources, physical resources, individual resources, and organizational resources. **Financial resources** include all the money, from whatever source, that firms use to conceive of and implement strategies. These financial resources include cash from entrepreneurs, equity holders, bondholders, and banks. **Retained earnings,** or the profit that a firm made earlier in its history and invests in itself, are also an important type of financial resource.

Physical resources include all the physical technology used in a firm. This includes a firm's plant and equipment, its geographic location, and its access to raw materials. Specific examples of plant and equipment that are part of a firm's physical resources are a firm's computer hardware and software technology, robots used in manufacturing, and automated warehouses. Geographic location, as a type of physical resource, is important for firms as diverse as Wal-Mart (with its operations in rural markets generating, on average, higher returns than its operations in more competitive urban markets) and L. L. Bean (a catalogue retail firm that believes that its rural Maine location helps its employees identify with the outdoor lifestyle of many of its customers).[2]

Human resources include the training, experience, judgment, intelligence, relationships, and insight of *individual* managers and workers in a firm.[3] The importance of the human resources of well-known entrepreneurs such as Bill Gates (Microsoft) and Steve Jobs (currently at Apple) is broadly understood.

However, valuable human resources are not limited to just entrepreneurs or senior managers. Each employee at a firm like Southwest Airlines is seen as essential for the overall success of the firm. Whether it is the willingness of the gate agent to joke with the harried traveler, or a baggage handler hustling to get a passenger's bag into a plane, or even a pilot's decision to fly in a way that saves fuel—all of these human resources are part of the resource base that has enabled Southwest to gain competitive advantages in the very competitive U.S. airline industry.[4]

Whereas human resources are an attribute of single individuals, **organizational resources** are an attribute of groups of individuals. Organizational resources include a firm's formal reporting structure; its formal and informal planning, controlling, and coordinating systems; its culture and reputation; as well as informal relations among groups within a firm and between a firm and those in its environment. At Southwest Airlines, relationships among individual resources are an important organizational resource. For example, it is not unusual to see the pilots at Southwest helping to load the bags on an airplane to ensure that the plane leaves on time. This kind of cooperation and dedication shows up in an intense loyalty between Southwest employees and the firm—a loyalty that manifests itself in low employee turnover and high employee productivity, even though over 80 percent of Southwest's employees are unionized.

Critical Assumptions of the Resource-Based View

The RBV rests on two fundamental assumptions about the resources and capabilities that firms may control. First, different firms may possess different bundles of resources and capabilities, even if they are competing in the same industry. This is the assumption of firm **resource heterogeneity**. Resource heterogeneity implies that for a given business activity, some firms may be more skilled in accomplishing this activity than other firms. In manufacturing, for example, Toyota continues to be more skilled than, say, General Motors. In product design, Apple continues to be more skilled than, say, IBM. In motorcycles, Harley Davidson's reputation for big, bad, and loud rides separates it from its competitors.

Second, some of these resource and capability differences among firms may be long lasting, because it may be very costly for firms without certain resources and capabilities to develop or acquire them. This is the assumption of **resource immobility**. For example, Toyota has had its advantage in manufacturing for at least 30 years. Apple has had product design advantages over IBM since Apple was founded in the 1980s. And Harley has been able to retain its brand reputation for at least 50 years! It is not that GM, IBM, and Harley's competitors are unaware of their disadvantages. Indeed, some of these firms—notably GM and IBM—have made progress in addressing their disadvantages. However, despite these efforts, Toyota, Apple, and Harley continue to enjoy advantages over their competition.

Taken together, these two assumptions make it possible to explain why some firms outperform other firms, even if these firms are all competing in the same industry. If a firm possesses valuable resources and capabilities that few other firms possess, and if these other firms find it too costly to imitate these resources and capabilities, the firm that possesses these tangible and intangible assets can gain a sustained competitive advantage. The economic logic that underlies the RBV is described in more detail in the Strategy in Depth feature.

Strategy in Depth

Ricardian Economics and the Resource-Based View

The theoretical roots of the resource-based view can be traced to research done by David Ricardo in 1817. Interestingly, Ricardo was not even studying the profitability of firms; he was interested in the economic consequences of owning more or less fertile farm land.

Unlike many other inputs into the production process, the total supply of land is relatively fixed and cannot be significantly increased in response to higher demand and prices. Such inputs are said to be **inelastic in supply**, because their quantity of supply is fixed and does not respond to price increases. In these settings, it is possible for those who own higher-quality inputs to gain competitive advantages.

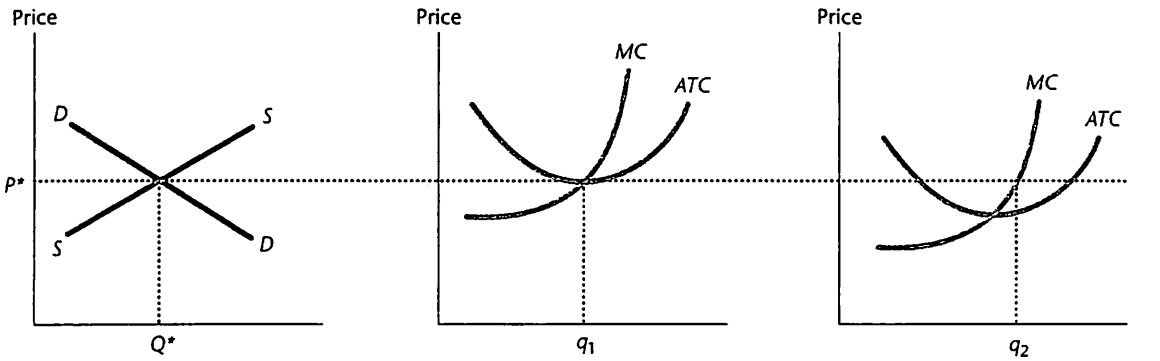
Ricardo's argument concerning land as a productive input is summarized in Figure 3.1. Imagine that there are many parcels of land suitable for growing wheat. Also, suppose that the fertility of these different parcels varies from high fertility (low costs of production) to low fertility (high costs of production). It seems obvious that when the market price for wheat is low, it will only pay farmers with the most fertile land to grow wheat. Only these farmers will have costs low enough to make money when the market price for wheat is low. As the market price for wheat increases, then farmers with progressively less fertile land will be able to use it to grow wheat. These observations lead to the market supply curve in panel A of Figure 3.1: As prices (P) go up, supply (S) also goes up. At some point on this supply curve, supply will equal demand (D). This point determines the market price for wheat, given supply and demand. This price is called P^* in the figure.

Now consider the situation facing two different kinds of farmers. Ricardo assumed that both these farmers follow traditional economic logic by producing a quantity (q) such that their marginal cost (MC) equals their marginal revenue (MR); that is, they produce enough wheat so that the cost of producing the last bushel of wheat equals the revenue they will get from selling that last bushel. However, this decision for the farm with less fertile land (in panel B of the figure) generates revenues that exactly equal the average total cost (ATC) of the only capital this farmer is assumed to employ, the cost of his land. In contrast, the farmer with more fertile land (in panel C of the figure) has an average total cost (ATC) less than the market-determined price, and thus is able to earn an above-normal economic profit. This is because at the market-determined price, P^*, MC equals ATC for the farmer with less fertile land, whereas MC is greater than ATC for the farmer with more fertile land.

In traditional economic analysis, the profit earned by the farmer with more fertile land should lead other farmers to enter into this market; that is, to obtain some land and produce wheat. However, all the land that can be used to produce wheat in a way that generates at least a normal return given the market price P^* is already in production. In particular, no more very fertile land is available, and fertile

The VRIO Framework

Armed with the RBV, it is possible to develop a set of tools for analyzing all the different resources and capabilities a firm might possess and the potential of each of these to generate competitive advantages. In this way, it will be possible to identify a firm's internal strengths and its internal weaknesses. The primary tool for accomplishing this internal analysis is called the VRIO framework.[5] The acronym, *VRIO* in **VRIO framework** stands for four questions one must ask about a resource or capability to determine its competitive potential: the question of



A. Market supply and demand, market quantity (Q^*) and market-determined price (P^*)

B. Performance of firm with less fertile land (higher average total cost – *ATC*)

C. Performance of firm with more fertile land (lower average total cost – *ATC*)

MC = marginal costs, *ATC* = average total costs, *Q* = aggregate quantity produced in the industry, *q* = quantity produced by each firm in the industry

Figure 3.1 The Economics of Land with Different Levels of Fertility

land (by assumption) cannot be created. This is what is meant by land being inelastic in supply. Thus, the farmer with more fertile land and lower production costs has a sustained competitive advantage over those farmers with less fertile land and higher production costs. Therefore, the farmer with the more fertile land is able to earn an above-normal economic profit.

Of course, at least two events can threaten this sustained competitive advantage. First, market demand may shift down and to the left. This would force farmers with less fertile land to cease production and would also reduce the profit of those with more fertile land. If demand shifted far enough, this profit might disappear altogether.

Second, farmers with less fertile land may discover low-cost ways of increasing their land's fertility, thereby reducing the competitive advantage of farmers with more fertile land. For example, farmers with less fertile land may be able to use inexpensive fertilizers to increase their land's fertility. The existence of such low-cost fertilizers suggests that although *land* may be in fixed supply, *fertility* may not be. If enough farmers can increase the fertility of their land, then the profits originally earned by the farmers with the more fertile land will disappear.

Of course, what the RBV does is recognize that land is not the only productive input that is inelastic in supply, and that farmers are not the only firms that benefit from having such resources at their disposal.

Source: D. Ricardo (1817). *Principles of political economy and taxation*. London: J. Murray.

Value, the question of Rarity, the question of Imitability, and the question of Organization. These four questions are summarized in Table 3.1.

The Question of Value

The **question of value** is: "Do resources and capabilities enable a firm to exploit an external opportunity or neutralize an external threat?" If a firm answers this question with a "yes," then its resources and capabilities are valuable and can be considered *strengths*. If a firm answers this question with a "no," its resources and

Table 3.1 **Questions Needed to Conduct a Resource-Based Analysis of a Firm's Internal Strengths and Weaknesses**

1. *The Question of Value.* Does a resource enable a firm to exploit an environmental opportunity and/or neutralize an environmental threat?
2. *The Question of Rarity.* Is a resource currently controlled by only a small number of competing firms?
3. *The Question of Imitability.* Do firms without a resource face a cost disadvantage in obtaining or developing it?
4. *The Question of Organization.* Are a firm's other policies and procedures organized to support the exploitation of its valuable, rare, and costly-to-imitate resources?

capabilities are *weaknesses*. There is nothing inherently valuable about a firm's resources and capabilities. Rather, they are only valuable to the extent that they enable a firm to enhance its competitive position. Sometimes, the same resources and capabilities can be strengths in one market and weaknesses in another. The Global Perspectives feature discusses this issue in more detail.

Valuable Resources and Firm Performance

Sometimes it is difficult to know for sure whether a firm's resources and capabilities really enable it to exploit its external opportunities or neutralize its external threats. Sometimes this requires detailed operational information that may not be readily available. Other times, the full impact of a firm's resources and capabilities on its external opportunities and threats may not be known for some time.

One way to track the impact of a firm's resources and capabilities on its opportunities and threats is to examine the impact of using these resources and capabilities on a firm's revenues and costs. In general, firms that use their resources and capabilities to exploit opportunities or neutralize threats will see an increase in their net revenues, or a decrease in their net costs, or both, compared to the situation in which they were not using these resources and capabilities to exploit opportunities or neutralize threats. That is, the value of these resources and capabilities will generally manifest itself in either higher revenues or lower costs or both, once a firm starts using them to exploit opportunities or neutralize threats.

Applying the Question of Value

For many firms, the answer to the question of value has been "yes." That is, many firms have resources and capabilities that are used to exploit opportunities and neutralize threats, and the use of these resources and capabilities enables these firms to increase their net revenues or decrease their net costs. For example, Sony has a great deal of experience in designing, manufacturing, and selling miniaturized electronic technology. Sony has used these resources and capabilities to exploit opportunities, including video games, digital cameras, computers and peripherals, handheld computers, home video and audio, portable audio, and car audio. 3M has used its resources and capabilities in substrates, coatings, and adhesives, along with an organizational culture that rewards risk-taking and creativity, to exploit opportunities in office products, including invisible tape and Post-It notes. Sony's and 3M's resources and capabilities—including their specific technological skills and their creative organizational cultures—have made it possible for these firms to respond to, and even create, new opportunities.[6]

Global Perspectives

Does It Pay to Be an American Beer in Europe?

Despite the best efforts of American college students, beer consumption in the United States is no longer increasing. In an effort to expand their sales, both Anheuser-Busch and Miller Brewing are trying to enter the European market. Unfortunately, many Europeans do not like American beer. They consider it to be "watered-down" and "tasteless." None of this was helped when these two powerhouse U.S. firms first introduced their "light" beers to Europe. Unfortunately, "light beer" in Europe means "low-alcohol-content beer," and sales of Bud Light and Miller Light never met expectations. Indeed, Miller changed the name of its light beer in Europe to Miller Pilsner. Pilsner beer is a category of lighter-bodied beer.

In an effort to grow their sales and overcome the perception that American beers are "lightweight," Anheuser-Busch and Miller are adopting very different strategies. Anheuser-Busch is actually playing up its American roots. It uses the same commercials in Europe as it does in the United States. The American eagle remains prominently displayed on the Budweiser can, and the Clydesdales still pull the old-fashioned beer wagon in some Budweiser ads. In 2006, Anheuser-Busch finally received permission to use the "Bud" name on its products throughout Europe after a several-year struggle with Czech brewery Budějovický Budvar, which also claimed this brand name.

Anheuser-Busch is also signing up European sports stars as spokespersons for Budweiser. Budweiser was the official beer of the 2006 Olympics in Torino, Italy, and at the 2006 FIFA World Cup, and Anheuser-Busch recently locked up sponsorship of the 2010 and 2014 FIFA World Cups.

Anheuser-Busch hopes that the European fascination with U.S. brands—including McDonald's Big Mac—will ultimately transfer to its products and offset current tensions between the United States and Europe regarding the Iraq War.

In Europe, Budweiser is priced as an expensive import beer. Its market share in the United Kingdom—a critical, but very mature beer-drinking market—increased from 2.7 percent in 2000 to only 3 percent in 2005.

In contrast, Miller downplays its American roots. Indeed, Miller is trying to be viewed as just another European beer company with an upscale product. For example, to serve the Russian market, Miller opened a Russian brewery just 84 miles from Moscow. Also, rather than using U.S.-based ads, Miller has developed a European ad campaign that markets its beer as part of a new, hipper lifestyle that is distinctly European, not made-over American. Miller's sales in Russia increased by 70 percent from 2002 to 2003, at a time when the overall market for upscale beers in that country increased by only 30 percent. In 2006, Miller had only 5 percent of the Russian market, but 15 percent of the profits in that market. Miller is looking to repeat that success in other European countries, especially in Eastern Europe.

So, is being an American beer a valuable resource or not? As suggested in the text, a resource is not inherently valuable or not valuable. It depends on the specific market demand for that resource. In the United States, being an American beer can be a valuable resource, but it may turn out to be less valuable in Europe.

Sources: J. Barney (2001). "Is the resource-based 'view' a useful perspective for strategic management research? Yes." *Academy of Management Review*, 26, pp. 41–56; D. Bilefsky and C. Lawton (2004). "In Europe, marketing beer as 'American' may not be a plus." *Wall Street Journal*, July 21, pp. B1+; http://news.moneycontrol.msn.com; [accessed] February 2007 www.cee-foodindustry.com; Anheuser-Busch Annual Report, 2005.

Unfortunately, for other firms the answer to the question of value appears to be "no." The merger of AOL and Time Warner was supposed create a new kind of entertainment and media company; it is now widely recognized that Time Warner has been unable to marshal the resources necessary to create economic value. Time Warner wrote-off $90 billion in value in 2002; its stock price has been at

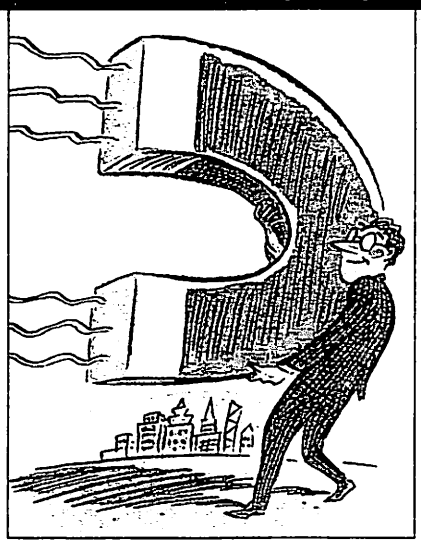
Strategy in the Emerging Enterprise

Entrepreneurial firms, like all other firms, must be able to answer "yes" to the question of value. That is, decisions by entrepreneurs to organize a firm to exploit an opportunity must increase revenues or reduce costs beyond what would be the case if they did not choose to organize a firm to exploit an opportunity.

However, entrepreneurs often find it difficult to answer the question of value before they actually organize a firm and try to exploit an opportunity. This is because the impact of exploiting an opportunity on a firm's revenues and costs often cannot be known, with certainty, before that opportunity is exploited.

Despite these challenges, entrepreneurs often are required to not only estimate the value of any opportunities they are thinking about exploiting, but to do so in some detail and in a written form. Projections about how organizing a firm to exploit an opportunity will affect a firm's revenues and costs are often the centerpiece of an entrepreneur's **business plan**—a document that summarizes how an entrepreneur will organize a firm to exploit an opportunity, along with the economic implications of exploiting that opportunity.

Two schools of thought exist as to the value of entrepreneurs writing business plans. On the one hand, some authors argue that writing a business plan is likely to be helpful for entrepreneurs, because it forces them to be explicit about their assumptions, exposes those assumptions to others for critique and analysis, and helps entrepreneurs focus their efforts on building a new organization and exploiting an opportunity. On the other hand, other authors argue that writing a business plan may actually hurt an entrepreneur's performance, because writing such a plan may divert an entrepreneur's attention from more important activities, may give entrepreneurs the illusion that they have more control of their business than they actually do, and may lead to decision-making errors.



Are Business Plans Good for Entrepreneurs?

Research supports both points of view. Scott Shane and Frederic Delmar have shown that writing a business plan significantly enhances the probability that an entrepreneurial firm will survive. In contrast, Amar Bhide shows that most entrepreneurs go through many different business plans before they land on one that describes a business opportunity that they actually support. For Bhide, writing the business plan is, at best, a means of helping to create a new opportunity. Because most business plans are abandoned soon after they are written, writing business plans has limited value.

One way to resolve the conflicts among these scholars is to accept that writing a business plan may be very useful in some settings and not so useful in others. In particular, when it is possible for entrepreneurs to collect sufficient information about a potential market opportunity so as to be able to describe the probability of different outcomes associated with exploiting that opportunity—a setting described as *risky* in the entrepreneurship literature—business planning can be very helpful. However, when such information cannot be collected—a setting described as *uncertain* in the entrepreneurship literature—then writing a business plan would be of only limited value, and its disadvantages might outweigh any advantages it might create.

Sources: S. Shane and F. Delmar (2004). "Planning for the market: Business planning before marketing and the continuation of organizing efforts." *Journal of Business Venturing*, 19, pp. 767–785; A. Bhide (2000). *The origin and evolution of new businesses.* New York: Oxford; R. H. Knight. (1921). *Risk, uncertainty, and profit.* Chicago: University of Chicago Press; S. Alvarez and J. Barney. (2006). "Discovery and creation: Alternative theories in the field of entrepreneurship." Unpublished paper, Entrepreneurship Center, Fisher College of Business, The Ohio State University.

record lows, and there have been rumors that it will be broken up. Ironically, many of the segments of this diverse media conglomerate continue to create value. However, the company as a whole has not realized the synergies that it was expected to generate when it was created. Put differently, these synergies—as resources and capabilities—are apparently not valuable.[7]

Using Value-Chain Analysis to Identify Potentially Valuable Resources and Capabilities

One way to identify potentially valuable resources and capabilities controlled by a firm is to study that firm's value chain. A firm's **value chain** is the set of business activities in which it engages to develop, produce, and market its products or services. Each step in a firm's value chain requires the application and integration of different resources and capabilities. Because different firms may make different choices about which value-chain activities they will engage in, they can end up developing different sets of resources and capabilities. This can be the case even if these firms are all operating in the same industry. These choices can have implications for a firm's strategies, and, as described in the Ethics and Strategy feature, they can also have implications for society more generally.

Consider, for example, the oil industry. Figure 3.2 provides a simplified list of all the business activities that must be completed if crude oil is to be turned into consumer products, such as gasoline. These activities include exploring for crude oil, drilling for crude oil, pumping crude oil, shipping crude oil, buying crude oil, refining crude oil, selling refined products to distributors, shipping refined products, and selling refined products to final customers.

Different firms may make different choices about which of these stages in the oil industry they want to operate. Thus, the firms in the oil industry may have very different resources and capabilities. For example, exploring for crude oil is very expensive and requires substantial financial resources. It also requires access to land (a physical resource), the application of substantial scientific and technical knowledge (individual resources), and an organizational commitment to risk-taking and exploration (organizational resources). Firms that operate in this stage of the oil business are likely to have very different resources and capabilities than those that, for example, sell refined oil products to final customers. To be successful in the retail stage of this industry, a firm needs retail outlets (such as stores and gas stations), which are costly to build and require both financial and physical resources. These outlets, in turn, need to be staffed by

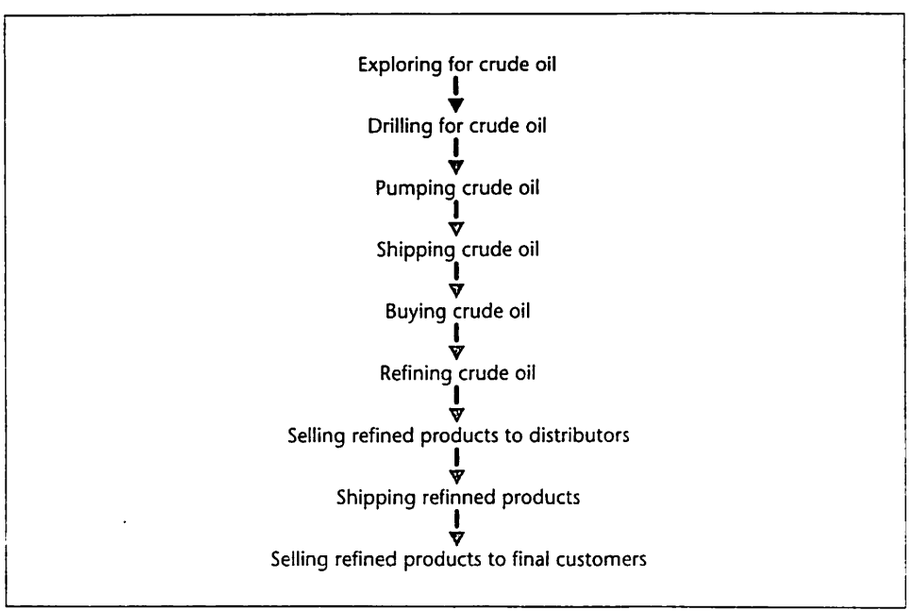


Figure 3.2 A Simplified Value Chain of Activities of Oil-Based Refined Products such as Gasoline and Motor Oil

Ethics and Strategy

Strategic management adopts the perspective of a firm's owners in discussing how to gain and sustain competitive advantages. Even when adopting a stakeholder perspective (see the Ethics and Strategy feature in Chapter 1), how a firm can improve its performance and increase the wealth of its owners still takes center stage.

However, an exclusive focus on the performance of a firm and the wealth of its owners can sometimes have broader effects—on society and on the environment—that are not fully recognized. Economists call these broader effects "externalities," because they are external to the core issue in economics and strategic management of how firms can maximize their performance. They are external to this issue because firms generally do not bear the full costs of the externalities their profit-maximizing behavior creates.

Externalities can take many forms. The most obvious of these has to do with pollution and the environment. If, for example, in the process of maximizing its performance a firm engages in activities that pollute the environment, the impact of that pollution is an externality. Such pollution reduces our quality of life and hurts the environment, but the firm creating this pollution often does not bear the full costs of doing so.

Other externalities have to do with a firm's impact on the public's health. For example, when tobacco companies maximize their profits by selling tobacco to children, they are also creating a public health externality. Getting children hooked on tobacco early on might be good for the bottom line of a tobacco company, but it increases the chances of these children developing lung cancer, emphysema, heart disease, and the other ailments associated with tobacco. Obviously, these individuals absorb most of the adverse consequences of these diseases, but society suffers as well from the high health care costs that are engendered.

Externalities and the Broader Consequences of Profit Maximization

Put differently, while adopting a simple profit-maximizing perspective in choosing and implementing strategies can have positive impacts for a firm, its owners, and its stakeholders, it can also have negative consequences for society as a whole. Two broad solutions to this problem of externalities have been proposed. First, governments can take on the responsibility of directly monitoring and regulating the behavior of firms in areas where these kinds of externalities are likely to develop. Second, governments can use lawsuits and regulations to ensure that firms directly bear more of the costs of any externalities their behavior might generate. Once these externalities are "internalized," it is then a matter of self-interest for firms not to engage in activities that generate negative externalities.

Consumers can sometimes also help internalize the externalities generated by a firm's behavior by adjusting their consumption patterns to buy products or services only from companies that do not generate negative externalities. Consumers can even be more proactive and let firms know which of the their strategies are particularly troubling. For example, many consumers united to boycott firms with operations in South Africa when South Africa was still implementing a policy of apartheid. Ultimately, this pressure not only changed the strategies of many firms; it also helped change South Africa's domestic policies. More recently, consumer pressures on pharmaceutical companies forced these firms to make their AIDS drugs more accessible in less developed countries in Africa; similar pressures forced Nike to adjust the wages and working conditions of the individuals who manufacture Nike's shoes. To the extent that sufficient demand for "socially responsible firms" exists in the marketplace, it may make profit-maximizing sense for a firm to engage in socially responsible behavior by reducing the extent to which its actions generate negative externalities.

Sources: "AIDS in Africa." *British Medical Journal*, June 1, p. 456; J. S. Friedman (2003). "Paying for apartheid." *Nation*, June 6, pp. 7 +; L. Lee (2000). "Can Nike still do it?" *BusinessWeek*, February 21, pp. 121 +.

salespeople—individual resources—and marketing these products to customers through advertisements and other means can require a commitment to creativity—an organizational resource.

However, even firms that operate in the same set of value-chain activities in an industry may approach these activities very differently, and therefore may develop very different resources and capabilities associated with these activities. For example, two firms may sell refined oil products to final customers. However, one of these firms may sell only through retail outlets it owns whereas the second may sell only through retail outlets it does not own. The first firm's financial and physical resources are likely to be very different from the second firm's, although these two firms may have similar individual and organizational resources.

Studying a firm's value chain forces us to think about firm resources and capabilities in a disaggregated way. Although it is possible to characterize a firm's resources and capabilities more broadly, it is usually more helpful to think about how each of the activities a firm engages in affects its financial, physical, individual, and organizational resources. With this understanding, it is possible to begin to recognize potential sources of competitive advantage for a firm in a much more detailed way.

Because this type of analysis can be so helpful in identifying the financial, physical, individual, and organizational resources and capabilities controlled by a firm, several generic value chains for identifying them have been developed. The first, proposed by the management-consulting firm McKinsey and Company, is presented in Figure 3.3.[8] This relatively simple model suggests that the creation of value almost always involves six distinct activities: technology development, product design, manufacturing, marketing, distribution, and service. Firms can develop distinctive capabilities in any one or any combination of these activities.

Michael E. Porter has developed a second generic value chain.[9] This value chain, presented in Figure 3.4, divides value-creating activities into two large categories: primary activities and support activities. Primary activities include inbound logistics (purchasing, inventory, and so forth), production, outbound logistics (warehousing and distribution), sales and marketing, and service (dealer support and customer service). Support activities include infrastructure (planning, finance, information services, legal), technology development (research and development, product design), and human resource management and development. Primary activities are directly associated with the manufacture and distribution of a product. Support activities assist a firm in accomplishing its primary activities. As with the McKinsey value chain, a firm can develop strengths or

Figure 3.3 The Generic Value Chain Developed by McKinsey and Company

Technology development	Product design	Manufacturing	Marketing	Distribution	Service
Source Sophistication Patents Product/process choices	Function Physical characteristics Aesthetics Quality	Integration Raw materials Capacity Location Procurement Parts production Assembly	Prices Advertising/ promotion Sales force Package Brand	Channels Integration Inventory Warehousing Transport	Warranty Speed Captive/independent Prices

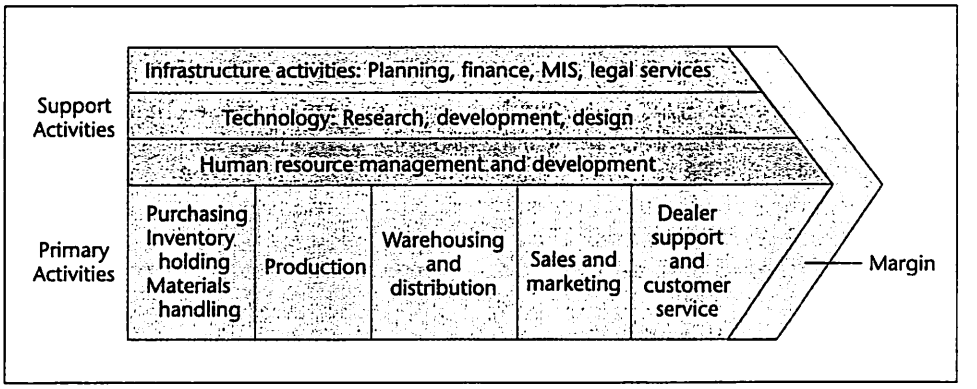


Figure 3.4 The Generic Value Chain Developed by Porter

Sources: Reprinted with permission of The Free Press, a Division of Simon and Schuster Adult Publishing Group, from *Competitive Advantage: Creating and Sustaining Superior Performance* by Michael E. Porter. Copyright ©1985, 1998 by Michael E. Porter. All rights reserved.

weaknesses in any one or in any combination of the activities listed in Porter's value chain. These activities, and how they are linked to one another, point to the kinds of resources and capabilities a firm is likely to have developed.

The Question of Rarity

Understanding the value of a firm's resources and capabilities is an important first consideration in understanding a firm's internal strengths and weaknesses. However, if a particular resource or capability is controlled by numerous competing firms, then that resource is unlikely to be a source of competitive advantage for any one of them. Instead, valuable but common (i.e., not rare) resources and capabilities are sources of competitive parity. Only when a resource is not controlled by numerous other firms is it likely to be a source of competitive advantage. These observations lead to the **question of rarity**: "How many competing firms already possess particular valuable resources and capabilities?"

Consider, for example, competition among television sports channels. All the major networks broadcast sports. In addition, several sports-only cable channels are available, including the best-known all-sports channel, ESPN. Several years ago, ESPN began televising what were then called alternative sports—skateboarding, snowboarding, mountain biking, and so forth. The surprising popularity of these programs led ESPN to package them into an annual competition called the "X-Games." "X" stands for "extreme," and ESPN has definitely gone to the extreme in including sports in the X-Games. The X-Games now include sports such as sky-surfing, competitive high diving, competitive bungee cord jumping, and so forth. ESPN broadcasts both a summer X-Games and a winter X-Games. No other sports outlet has yet made such a commitment to so-called extreme sports, and it has paid handsome dividends for ESPN—extreme sports have very low-cost broadcast rights and draw a fairly large audience. This commitment to extreme sports has been a source of at least a temporary competitive advantage for ESPN.

Of course, not all of a firm's resources and capabilities have to be valuable and rare. Indeed, most firms have a resource base that is composed primarily of valuable but common resources and capabilities. These resources cannot be sources of even temporary competitive advantage, but are essential if a firm is to gain competitive parity. Under conditions of competitive parity, although no one firm gains a competitive advantage, firms do increase their probability of survival.

Consider, for example, a telephone system as a resource or capability. Because telephone systems are widely available, and because virtually all

organizations have access to telephone systems, these systems are not rare, and thus are not a source of competitive advantage. However, firms that do not possess a telephone system are likely to give their competitors an important advantage and place themselves at a competitive disadvantage.

How rare a valuable resource or capability must be in order to have the potential for generating a competitive advantage varies from situation to situation. It is not difficult to see that if a firm's valuable resources and capabilities are absolutely unique among a set of current and potential competitors, they can generate a competitive advantage. However, it may be possible for a small number of firms in an industry to possess a particular valuable resource or capability and still obtain a competitive advantage. In general, as long as the number of firms that possess a particular valuable resource or capability is less than the number of firms needed to generate perfect competition dynamics in an industry, that resource or capability can be considered rare and a potential source of competitive advantage.

The Question of Imitability

Firms with valuable and rare resources are often strategic innovators, because they are able to conceive of and engage in strategies that other firms cannot because they lack the relevant resources and capabilities. These firms may gain the first-mover advantages discussed in Chapter 2.

Valuable and rare organizational resources, however, can be sources of sustained competitive advantage only if firms that do not possess them face a cost disadvantage in obtaining or developing them, compared to firms that already possess them. These kinds of resources are **imperfectly imitable.**[10] These observations lead to the **question of imitability**: "Do firms without a resource or capability face a cost disadvantage in obtaining or developing it compared to firms that already possess it?"

Imagine an industry with five essentially identical firms. Each of these firms manufactures the same products, uses the same raw materials, and sells the products to the same customers through the same distribution channels. It is not hard to see that firms in this kind of industry will have normal economic performance. Now, suppose that one of these firms, for whatever reason, discovers or develops a heretofore unrecognized valuable resource and uses that resource either to exploit an external opportunity or to neutralize an external threat. Obviously, this firm will gain a competitive advantage over the others.

This firm's competitors can respond to this competitive advantage in at least two ways. First, they can ignore the success of this one firm and continue as before. This action, of course, will put them at a competitive disadvantage. Second, these firms can attempt to understand why this one firm is able to be successful and then duplicate its resources to implement a similar strategy. If competitors have no cost disadvantages in acquiring or developing the needed resources, then this imitative approach will generate competitive parity in the industry.

Sometimes, however, for reasons that will be discussed later, competing firms may face an important cost disadvantage in duplicating a successful firm's valuable resources. If this is the case, this one innovative firm may gain a **sustained competitive advantage**—an advantage that is not competed away through strategic imitation. Firms that possess and exploit costly-to-imitate, rare, and valuable resources in choosing and implementing their strategies may enjoy a period of sustained competitive advantage.[11]

For example, other sports networks have observed the success of ESPN's X-Games and are beginning to broadcast similar competitions. NBC, for example, has developed its own version of the X-Games, called the "Gravity Games," and even the Olympics now includes sports that were previously perceived as being "too extreme" for this mainline sports competition. Several Fox sports channels broadcast programs that feature extreme sports, and at least one new cable channel (Fuel) broadcasts only extreme sports. Whether these efforts will be able to attract the competitors that the X-Games attract, whether winners at these other competitions will gain as much status in their sports as do winners of the X-Games, and whether these other competitions and programs will gain the reputation among viewers enjoyed by ESPN will go a long way to determining whether ESPN's competitive advantage in extreme sports is temporary or sustained.[12]

Forms of Imitation: Direct Duplication and Substitution

In general, imitation occurs in one of two ways: **direct duplication** or **substitution**. Imitating firms can attempt to directly duplicate the resources possessed by the firm with a competitive advantage. Thus, NBC sponsoring an alternative extreme games competition can be thought of as an effort to directly duplicate the resources that enabled ESPN's X-Games to be successful. If the cost of this direct duplication is too high, then a firm with these resources and capabilities may obtain a sustained competitive advantage. If this cost is not too high, then any competitive advantages in this setting will be temporary.

Imitating firms can also attempt to substitute other resources for a costly to imitate resource possessed by a firm with a competitive advantage. Extreme sports shows and an extreme sports cable channel are potential substitutes for ESPN's X-Games strategy. These shows appeal to much the same audience as the X-Games, but they do not require the same resources as an X-Games strategy requires (i.e., because they are not competitions, they do not require the network to bring together a large number of athletes all at once). If substitute resources exist, and if imitating firms do not face a cost disadvantage in obtaining them, then the competitive advantage of other firms will be temporary. However, if these resources have no substitutes, or if the cost of acquiring these substitutes is greater than the cost of obtaining the original resources, then competitive advantages can be sustained.

Why Might It Be Costly to Imitate Another Firm's Resources or Capabilities?

A number of authors have studied why it might be costly for one firm to imitate the resources and capabilities of another. Four sources of costly imitation have been noted.[13] They are summarized in Table 3.2 and discussed below.

Unique Historical Conditions. It may be the case that a firm was able to acquire or develop its resources and capabilities in a low-cost manner because of its unique historical conditions. The ability of firms to acquire, develop, and use resources often depends on their place in time and space. Once time and history pass, firms that do not have space-and-time-dependent resources face a significant cost disadvantage in obtaining and developing them, because doing so would require them to re-create history.[14]

ESPN's early commitment to extreme sports is an example of these unique historical conditions. The status and reputation of the X-Games was created

Table 3.2 **Sources of Costly Imitation**

Unique Historical Conditions. When a firm gains low-cost access to resources because of its place in time and space, other firms may find these resources to be costly to imitate. Both first-mover advantages and path dependence can create unique historical conditions.
Causal Ambiguity. When competitors cannot tell, for sure, what enables a firm to gain an advantage, that advantage may be costly to imitate. Sources of causal ambiguity include when competitive advantages are based on "taken-for-granted" resources and capabilities, when multiple nontestable hypotheses exist about why a firm has a competitive advantage, and when a firm's advantages are based on complex sets of interrelated capabilities.
Social Complexity. When the resources and capabilities a firm uses to gain a competitive advantage involve interpersonal relationships, trust, culture, and other social resources that are costly to imitate in the short term.
Patents. Only a source of sustained competitive advantage in a few industries, including pharmaceuticals and specialty chemicals.

because ESPN happened to be the first major sports outlet that took these competitions seriously. The X-Games became the most important competition in many of these extreme sports. Indeed, for snowboarders, winning a gold medal in the X-Games is almost as important—if not more important—as winning a gold medal in the Winter Olympics. Other sports outlets that hope to be able to compete with the X-Games will have to overcome both the status of ESPN as "the worldwide leader in sports" and its historical advantage in extreme sports. Overcoming these advantages is likely to be very costly, making competitive threats from direct duplication, at least, less significant.

Of course, firms can also act to increase the costliness of imitating the resources and capabilities they control. ESPN is doing this by expanding its coverage of extreme sports and by engaging in a "grassroots" marketing campaign that engages young "extreme athletes" in local competitions. The purpose of these efforts is clear: to keep ESPN's status as the most important source of extreme sports competitions intact.[15]

Unique historical circumstances can give a firm a sustained competitive advantage in at least two ways. First, it may be that a particular firm was the first in an industry to recognize and exploit an opportunity, and being first gave the firm one or more of the first-mover advantages discussed in Chapter 2. Thus, although in principle other firms in an industry could have exploited an opportunity, that only one firm did so makes it more costly for other firms to imitate the original firm.

A second way that history can have an impact on a firm builds on the concept of **path dependence**.[16] A process is said to be path dependent when events early in the evolution of a process have significant effects on subsequent events. In the evolution of competitive advantage, path dependence suggests that a firm may gain a competitive advantage in the current period based on the acquisition and development of resources in earlier periods. In these earlier periods, it is often not clear what the full future value of particular resources will be. Because of this uncertainty, firms are able to acquire or develop these resources for less than what will turn out to be their full value. However, once the full value of these resources

is revealed, other firms seeking to acquire or develop these resources will need to pay their full known value, which (in general) will be greater than the costs incurred by the firm that acquired or developed these resources in some earlier period. The cost of acquiring both duplicate and substitute resources would rise once their full value became known.

Consider, for example, a firm that purchased land for ranching some time ago and discovered a rich supply of oil on this land in the current period. The difference between the value of this land as a supplier of oil (high) and the value of this land for ranching (low) is a source of competitive advantage for this firm. Moreover, other firms attempting to acquire this or adjacent land will now have to pay for the full value of the land in its use as a supply of oil (high), and thus will be at a cost disadvantage compared to the firm that acquired it some time ago for ranching.

Causal Ambiguity. A second reason why a firm's resources and capabilities may be costly to imitate is that imitating firms may not understand the relationship between the resources and capabilities controlled by a firm and that firm's competitive advantage. In other words, the relationship between firm resources and capabilities and competitive advantage may be **causally ambiguous**.

At first, it seems unlikely that causal ambiguity about the sources of competitive advantage for a firm would ever exist. Managers in a firm seem likely to understand the sources of their own competitive advantage. If managers in one firm understand the relationship between resources and competitive advantage, then it seems likely that managers in other firms would also be able to discover these relationships and thus would have a clear understanding of which resources and capabilities they should duplicate or seek substitutes for. If there are no other sources of cost disadvantage for imitating firms, imitation should lead to competitive parity and normal economic performance.[17]

However, it is not always the case that managers in a particular firm will fully understand the relationship between the resources and capabilities they control and competitive advantage. This lack of understanding could occur for at least three reasons. First, it may be that the resources and capabilities that generate competitive advantage are so taken for granted, so much a part of the day-to-day experience of managers in a firm, that these managers are unaware of them.[18] Organizational resources and capabilities such as teamwork among top managers, organizational culture, relationships among other employees, and relationships with customers and suppliers may be almost "invisible" to managers in a firm.[19] If managers in firms that have such capabilities do not understand their relationship to competitive advantage, managers in other firms face significant challenges in understanding which resources they should imitate.

Second, managers may have multiple hypotheses about which resources and capabilities enable their firm to gain a competitive advantage, but they may be unable to evaluate which of these resources and capabilities, alone or in combination, actually create the competitive advantage. For example, if one asks successful entrepreneurs what enabled them to be successful, they are likely to reply with several hypotheses, such as "hard work, willingness to take risks, and a high-quality top management team." However, if one asks what happened to unsuccessful entrepreneurs, they, too, are likely to suggest that their firms were characterized by "hard work, willingness to take risks, and a high-quality top management team." It may be the case that "hard work, willingness to take risks, and a high-quality top management team" are important resources and capabilities for entrepreneurial firm success, but other factors may also play a

role. Without rigorous experiments, it is difficult to establish which of these resources have a causal relationship with competitive advantage and which do not.

Finally, it may be that not just a few resources and capabilities enable a firm to gain a competitive advantage, but that literally thousands of these organizational attributes, bundled together, generate these advantages. When the resources and capabilities that generate competitive advantage are complex networks of relationships between individuals, groups, and technology, imitation can be costly.

Whenever the sources of competitive advantage are widely diffused across people, locations, and processes in a firm, those sources will be costly to imitate. Perhaps the best example of such a resource is knowledge itself. To the extent that valuable knowledge about a firm's products, processes, customers, and so on, is widely diffused throughout an organization, competitors will have difficulty imitating that knowledge, and it can be a source of sustained competitive advantage.[20]

Social Complexity. A third reason that a firm's resources and capabilities may be costly to imitate is that they may be socially complex phenomena, beyond the ability of firms to systematically manage and influence. When competitive advantages are based in such complex social phenomena, the ability of other firms to imitate these resources and capabilities, either through direct duplication or substitution, is significantly constrained. Efforts to influence these kinds of phenomena are likely to be much more costly than they would be if these phenomena developed in a natural way over time in a firm.[21]

A wide variety of firm resources and capabilities may be **socially complex.** Examples include the interpersonal relations among managers in a firm, a firm's culture, and a firm's reputation among suppliers and customers.[22] Notice that in most of these cases it is possible to specify how these socially complex resources add value to a firm. Thus, there is little or no causal ambiguity surrounding the link between these firm resources and capabilities and competitive advantage. However, understanding that an organizational culture with certain attributes or quality relations among managers can improve a firm's efficiency and effectiveness does not necessarily imply that firms lacking these attributes can engage in systematic effort to create them, or that low-cost substitutes for them exist. For the time being, such social engineering may be beyond the abilities of most firms. At the very least, such social engineering is likely to be much more costly than it would be if socially complex resources evolved naturally within a firm.[23]

It is interesting to note that firms seeking to imitate complex physical technology often do not face the cost disadvantages of imitating complex social phenomena. A great deal of physical technology (machine tools, robots, and so forth) can be purchased in supply markets. Even when a firm develops its own unique physical technology, reverse engineering tends to diffuse this technology among competing firms in a low-cost manner. Indeed, the costs of imitating a successful physical technology are often lower than the costs of developing a new technology.[24]

Although physical technology is usually not costly to imitate, the application of this technology in a firm is likely to call for a wide variety of socially complex organizational resources and capabilities. These organizational resources may be costly to imitate, and, if they are valuable and rare, the combination of physical and socially complex resources may be a source of sustained competitive advantage. The importance of socially complex resources and capabilities for firm

performance has been studied in detail in the field of strategic human resource management, as described in the Research Made Relevant feature.

Patents. At first glance, it might appear that a firm's patents would make it very costly for competitors to imitate its products.[25] Patents do have this effect in some industries. For example, patents in the pharmaceutical and specialty chemical industry effectively foreclose other firms from marketing the same products until a firm's patents expire. As suggested in Chapter 2, patents can raise the cost of imitation in a variety of other industries as well.

However, from another point of view a firm's patents may decrease, rather than increase, the costs of imitation. When a firm files for patent protection, it is forced to reveal a significant amount of information about its product. Governments require this information to ensure that the technology in question is patentable. By obtaining a patent, a firm may provide important information to competitors about how to imitate its technology.

Moreover, most technological developments in an industry are diffused throughout firms in that industry in a relatively brief period of time, even if the technology in question is patented, because patented technology is not immune from low-cost imitation. Patents may restrict direct duplication for a time, but they may actually increase the chances of substitution by functionally equivalent technologies.[26]

The Question of Organization

A firm's potential for competitive advantage depends on the value, rarity, and imitability of its resources and capabilities. However, to fully realize this potential, a firm must be organized to exploit its resources and capabilities. These observations lead to the **question of organization**: "Is a firm organized to exploit the full competitive potential of its resources and capabilities?"

Numerous components of a firm's organization are relevant to the question of organization, including its formal reporting structure, its formal and informal management control systems, and its compensation policies. A firm's **formal reporting structure** is a description of who in the organization reports to whom; it is often embodied in a firm's **organizational chart**. **Management control systems** include a range of formal and informal mechanisms to ensure that managers are behaving in ways consistent with a firm's strategies. **Formal management controls** include a firm's budgeting and reporting activities that keep people higher up in a firm's organizational chart informed about the actions taken by people lower down in a firm's organizational chart. **Informal management controls** might include a firm's culture and the willingness of employees to monitor each others' behavior. **Compensation policies** are the ways that firms pay employees. Such policies create incentives for employees to behave in certain ways.

These components of a firm's organization are often called **complementary resources and capabilities**, because they have limited ability to generate competitive advantage in isolation. However, in combination with other resources and capabilities they can enable a firm to realize its full potential for competitive advantage.[27]

For example, it has already been suggested that ESPN may have a sustained competitive advantage in the extreme sports segment of the sports broadcasting industry. However, if ESPN's management had not taken advantage of its opportunities in extreme sports by expanding coverage, ensuring that the best competitors come to ESPN competitions, adding additional competitions,

Research Made Relevant

Strategic Human Resource Management Research

Most empirical tests of the RBV have focused on the extent to which history, causal ambiguity, and social complexity have an impact on the ability of firms to gain and sustain competitive advantages. Among the most important of these tests has been research that examines the extent to which human resource practices that are likely to generate socially complex resources and capabilities are related to firm performance. This area of research is known as *strategic human resources management*.

The first of these tests was conducted as part of a larger study of efficient low-cost manufacturing in the worldwide automobile industry. A group of researchers from Massachusetts Institute of Technology developed rigorous measures of the cost and quality of over 70 manufacturing plants that assembled mid-size sedans around the world. They discovered that at the time of their study only six of these plants had simultaneous low costs and high-quality manufacturing—a position that obviously would give these plants a competitive advantage in the marketplace.

In trying to understand what distinguished these six plants from the others in the sample, the researchers found that, not surprisingly, these six plants had the most modern and up-to-date manufacturing technology. However, so did many of the less effective plants. What distinguished these effective plants was not their manufacturing technology, per se, but their human resource (HR) practices. These six plants all implemented a bundle of such practices that included participative decision making, quality circles, and an emphasis on team production. One of the results of these efforts—and another distinguishing feature of these six plants—was a high level of employee loyalty and commitment to a plant, as well as the belief that plant managers would treat employees fairly. These socially complex resources and capabilities are the types of resources that the RBV suggests should be sources of sustained competitive advantage.

Later work has followed up on this approach and has examined the impact of HR practices on firm performance outside the manufacturing arena. Using a variety of measures of firm performance and several different measures of HR practices, the results of this research continue to be very consistent with RBV logic. That is, firms that are able to use HR practices to develop socially complex human and organizational resources are able to gain competitive advantages over firms that do not engage in such practices.

Sources: J. P. Womack, D. I. Jones, and D. Roos (1990). *The machine that changed the world.* New York: Rawson; M. Huselid (1995). "The impact of human resource management practices on turnover, productivity, and corporate financial performance." *Academy of Management Journal*, 38, pp. 635–672; J. B. Barney and P. Wright (1998). "On becoming a strategic partner." *Human Resource Management*, 37, pp. 31–46.

and changing up older competitions, then its potential for competitive advantage would not have been fully realized. Of course, the reason that ESPN has done all these things is because it has an appropriate organizational structure, management controls, and employee compensation policies. By themselves, these attributes of ESPN's organization could not be a source of competitive advantage; however, they were essential for ESPN to realize its full competitive advantage potential.

Having an appropriate organization in place has enabled ESPN to realize the full competitive advantage potential of its other resources and capabilities. Having an inappropriate organization in place prevented Xerox from taking full advantage of some of its most critical valuable, rare, and costly-to-imitate resources and capabilities.

Through the 1960s and early 1970s, Xerox invested in a series of very innovative technology development research efforts. It managed these efforts by creating a stand-alone research center in Palo Alto, California (Palo Alto Research Center—PARC), and staffing it with a large group of highly creative and innovative scientists and engineers. Left to their own devices, these scientists and engineers at Xerox PARC developed an amazing array of technological innovations: the personal computer, the "mouse," Windows-type software, the laser printer, the "paperless office," Ethernet, and so forth. In retrospect, it is clear that the market potential of these technologies was enormous. Moreover, because they were developed at Xerox PARC, they were rare. Xerox might have been able to gain some important first-mover advantages if the organization had been able to translate these technologies into products, thereby increasing the cost to other firms of imitating these technologies.

Xerox possessed the resources and capabilities, but it did not have an organization in place to take advantage of them. No structure existed whereby Xerox PARC innovations could become known to managers at Xerox. Indeed, most Xerox managers—even many senior managers—were unaware of these technological developments through the mid-1970s. Once they finally became aware of them, very few of the technologies survived Xerox's highly bureaucratic product development process, a process whereby product development projects were divided into hundreds of minute tasks and progress in each task was reviewed by dozens of large committees. Even innovations that survived the product development process were not exploited by Xerox managers, because management compensation at Xerox depended almost exclusively on maximizing current revenue. Short-term profitability was relatively less important in compensation calculations, and the development of markets for future sales and profitability was essentially irrelevant. Xerox's formal reporting structure, its explicit management control systems, and its compensation policies were all inconsistent with exploiting the valuable, rare, and costly-to-imitate resources it had developed. Not surprisingly, the company failed to exploit any of its potential sources of sustained competitive advantage.[28]

Applying the VRIO Framework

The questions of value, rarity, imitability, and organization can be brought together into a single framework to understand the return potential associated with exploiting any of a firm's resources or capabilities. This is done in Table 3.3.

Table 3.3 **The VRIO Framework**

Is a resource or capability:				
Valuable?	**Rare?**	**Costly to imitate?**	**Exploited by organization?**	**Competitive implications**
No	—	—	No	Competitive disadvantage
Yes	No	—	↑	Competitive parity
Yes	Yes	No	↓	Temporary competitive advantage
Yes	Yes	Yes	Yes	Sustained competitive advantage

The relationship of the VRIO framework to strengths and weaknesses is presented in Table 3.4.

If a resource or capability controlled by a firm is not valuable, it will not enable a firm to choose or implement strategies that exploit environmental opportunities or neutralize environmental threats. Organizing to exploit this resource will increase a firm's costs or decrease its revenues. These types of resources are weaknesses. Firms will either have to fix these weaknesses or avoid using them when choosing and implementing strategies. If firms do exploit these kinds of resources and capabilities, they can expect to put themselves at a competitive disadvantage compared to those that either do not possess these nonvaluable resources or do not use them in conceiving and implementing strategies.

If a resource or capability is valuable but not rare, exploitation of this resource in conceiving and implementing strategies will generate competitive parity. Exploiting these types of resources will generally not create competitive advantages, but failure to exploit them can put a firm at a competitive disadvantage. In this sense, valuable-but-not-rare resources can be thought of as organizational strengths.

If a resource or capability is valuable and rare but not costly to imitate, exploiting this resource will generate a temporary competitive advantage for a firm. A firm that exploits this kind of resource is, in an important sense, gaining a first-mover advantage, because it is the first firm that is able to exploit a particular resource. However, once competing firms observe this competitive advantage, they will be able to acquire or develop the resources needed to implement this strategy through direct duplication or substitution at no cost disadvantage, compared to the first-moving firm. Over time, any competitive advantage that the first mover obtained would be competed away as other firms imitate the resources needed to compete. Consequently, this type of resource or capability can be thought of as an organizational strength and as a **distinctive competence**.

If a resource or capability is valuable, rare, and costly to imitate, exploiting it will generate a sustained competitive advantage. In this case, competing firms face a significant cost disadvantage in imitating a successful firm's resources and capabilities. As suggested earlier, this competitive advantage may reflect the unique history of the successful firm, causal ambiguity about which resources to imitate, the socially complex nature of these resources and capabilities, or any

Table 3.4 **The Relationship Between the VRIO Framework and Organizational Strengths and Weaknesses**

Is a resource or capability:

Valuable?	Rare?	Costly to imitate?	Exploited by organization?	Strength or weakness
No	—	—	No	Weakness
Yes	No	—	↑	Strength
Yes	Yes	No	↕	Strength and distinctive competence
Yes	Yes	Yes	Yes	Strength and sustainable distinctive competence

patent advantages a firm might possess. In any case, attempts to compete away the advantages of firms that exploit these resources will not generate competitive advantage, or even competitive parity, for imitating firms. Even if these firms are able to acquire or develop the resources or capabilities in question, the very high costs of doing so would put them at a competitive disadvantage. These kinds of resources and capabilities are organizational strengths and **sustainable distinctive competencies.**

The question of organization operates as an adjustment factor in the VRIO framework. For example, if a firm has a valuable, rare, and costly-to-imitate resource and capability but fails to organize itself to take full advantage of this resource, some of its potential competitive advantage could be lost (this is the Xerox example). Extremely poor organization, in this case, could actually lead a firm that has the potential for competitive advantage to gain only competitive parity or competitive disadvantages.

Applying the VRIO Framework to Southwest Airlines

To examine how the VRIO framework can be applied in analyzing real strategic situations, consider the competitive position of Southwest Airlines. Southwest Airlines has been the only consistently profitable airline in the United States over the last 30 years. While many U.S. airlines have gone in and out of bankruptcy, Southwest has remained profitable. How has it been able to gain this competitive advantage?

Potential sources of this competitive advantage fall into the two big categories: Operational choices Southwest has made and Southwest's approach to managing its people. On the operational side, Southwest has chosen to fly only a single type of aircraft (Boeing 737), only flies into smaller airports, has avoided complicated hub-and-spoke route systems, and, instead, flies a point-to-point system. On the people-management side, despite being highly unionized, Southwest has been able to develop a sense of commitment and loyalty among its employees. It is not unusual to see Southwest employees go well beyond their narrowly defined job responsibilities, helping out in whatever way is necessary to get a plane off the ground safely and on time. Which of these—operational choices or Southwest's approach to managing its people—are more likely to be a source of sustained competitive advantage?

Southwest's Operational Choices and Competitive Advantage

Consider first Southwest's operational choices. First, do these operational choices reduce Southwest's costs or increase the willingness of its customers to pay—that is, are these operational choises valuable? It can be shown that most of Southwest's operational choices have the effect of reducing its costs. For example, by flying only one type of airline, Southwest is able to reduce the cost of training its maintenance staff, reduce its spare parts inventory, and reduce the time its planes are being repaired. By flying into smaller airports, Southwest reduces the fees it would otherwise have to pay to land at larger airports. Its point-to-point system of routes avoids the costs associated with establishing large hub and spoke systems. Overall, these operational choices are valuable.

Second, are these operational choices rare? For most of its history, Southwest's operational choices have been rare. Only recently have large incumbent airlines and smaller new entrants begun to implement similar operational choices.

Third, are these operational choices costly to imitate? Several incumbent airline firms have set up subsidiaries designed to emulate most of Southwest's operational choices. For example, Continental created the Continental Lite division, United created the Ted division, and Delta created the Song division. All these division chose a single type of airplane to fly, flew into smaller airports, adopted a point to point route structure, and so forth.

In addition to these incumbent airlines, many new entrants into the airline industry—both in the United States and elsewhere—have adopted similar operational choices as Southwest. In the United States, these new entrants include AirTran Airlines, Allegiant Airlines, Jet Blue, Skybus Airlines, Spirit Airlines, and Virgin American Airlines.

Thus, while Southwest's operational choices are valuable and have been rare, they are apparently not costly to imitate. This is not surprising since these operational choices have few of the attributes of resources or capabilities that are costly to imitate. They do not derive from a firm's unique history, they are not path dependent, they are not causally ambiguous, nor are they socially complex.

Finally, is Southwest organized to fully exploit its operational choices? Most observers agree that Southwest's structure, management controls, and compensation policies are consistent with its operational choices.

Taken together, this analysis of Southwest's operational choices suggests that they are valuable, have been rare, but are not costly to imitate. While Southwest is organized to exploit these opportunities, they are likely to be only a source of temporary competitive advantage for Southwest.

Southwest's People Management and Competitive Advantage

A similar VRIO analysis can be conducted for Southwest's approach to people management. First, is this approach valuable, that is, does it reduce Southwest's costs or increase the willingness of its customers to pay?

Employee commitment and loyalty at Southwest is one explanation of why Southwest is able to get higher levels of employee productivity than most other U.S. airlines. This increased productivity shows up in numerous ways. For example, the average turnaround time for Southwest flights is around 18 minutes. The average turn around time for the average U.S. airline is 45 minutes. Southwest Airline employees are simply more effective in unloading and loading luggage, fueling, and catering their airplanes than employees in other airlines. This means that Southwest Airlines airplanes are on the ground for less time and in the air more time than its competitors. Of course, an airplane is only making money if it is in the air. This seemingly simple idea is worth hundreds of millions of dollars in lower costs to Southwest.

Has such loyalty and teamwork been rare in the U.S. airline industry? Over the last 15 years, the U.S. airline industry has been wracked by employment strife. Many airlines have had to cut employment, reduce wages, and in other ways strain their relationship with their employees. Overall, in comparison to incumbent airlines, the relationship that Southwest enjoys with its employees has been rare.

Is this relationship costly to imitate? Certainly, relationships between an airline and its employees have many of the attributes that should make them costly to imitate. They emerge over time, they are path dependent, causally ambiguous, and socially complex. It is reasonable to expect that incumbent airlines, airlines that already have strained relationships with their employees, would have difficulty imitating the relationship Southwest enjoys with its employees. Thus, in comparison to incumbent airlines, Southwest's approach to managing its people is probably valuable, rare, and costly to imitate. Assuming it is organized appropriately (and this seems to be the case), this would mean that—relative to incumbent airlines—Southwest has a sustained competitive advantage.

The situation may be somewhat different for new entrants into the U.S. airline industry. These airlines may not have a history of strained employee relationships. As new firms, they may be able to develop more valuable employee relationship from the very beginning. This suggests that, relative to new entrants, Southwest's approach to people management may be valuable and rare, but not costly to imitate. Again, assuming Southwest is organized appropriately, relative to new entrants into the U.S. airline industry, Southwest's people management capabilities may be a source of only a temporary competitive advantage.

Imitation and Competitive Dynamics in an Industry

Suppose a firm in an industry has conducted an analysis of its resources and capabilities, concludes that it possesses some valuable, rare, and costly-to-imitate resources and capabilities, and uses these to choose a strategy that it implements with the appropriate organizational structure, formal and informal management controls, and compensation policies. The RBV suggests that this firm will gain a competitive advantage even if it is operating in what a five forces analysis (see Chapter 2) would suggest is a very unattractive industry. Examples of firms that have competitive advantages in unattractive industries include Southwest Airlines, Nucor Steel, Wal-Mart, and Dell, to name a few.

Given that a particular firm in an industry has a competitive advantage, how should other firms respond? Decisions made by other firms given the strategic choices of a particular firm define the nature of the **competitive dynamics** that exist in an industry. In general, other firms in an industry can respond to the advantages of a competitor in one of three ways. First, they can choose to limit their response. For example, when Airbus decided to build a super-jumbo airliner designed to dominate international travel for the next 30 years, Boeing limited its responses to redesigning some aspects of two of its existing planes, the 777 and the 747. Second, they can choose to alter some of their business tactics. For example, when Southwest Airlines began operating out of Philadelphia's airport and charged very low airfares, US Airways—the airline that used to dominate the Philadelphia market—lowered its fares as well. Finally, they can choose to alter their strategy—their theory of how to gain competitive advantage (see Chapter 1). For example, when Dell's direct and Internet-based approach to selling personal computers became dominant, Gateway decided to abandon its retail stores in favor of a direct and Internet-based approach.[29] A firm's responses determines the structure of the competitive dynamics in an industry.

Not Responding to Another Firm's Competitive Advantage

A firm might not respond to another firm's competitive advantage for at least three reasons. First, this firm might have its own competitive advantage. By responding to another firm's competitive advantage, it might destroy, or at least compromise, its own sources of competitive advantage. For example, digital timekeeping has made accurate watches available to most consumers at reasonable prices. Firms such as Casio have a competitive advantage in this market because of its miniaturization and electronic capabilities. Indeed, Casio's market share and performance in the watch business continue to climb. How should Rolex—a manufacturer of very expensive, nonelectronic watches—respond to Casio? Rolex's decision has been: *Not at all.* Rolex appeals to a very different market segment than Casio. Should Rolex change its strategies—even if it replaced its mechanical self-winding design with the technologically superior digital design—it could easily compromise its competitive advantage in its own niche market.[30] In general, when a firm already possesses its own sources of competitive advantage, it will not respond to different sources of competitive advantage controlled by another firm.

Second, a firm may not respond to another firm's competitive advantage because it does not have the resources and capabilities to do so. A firm with insufficient or inappropriate resources and capabilities—be they physical, financial, human, or organizational— typically will not be able to imitate a successful firm's resources either through direct duplication or substitution. This may very well be the case with US Airways and Southwest Airlines. It may simply be beyond the ability of US Airways to imitate Southwest's managerial resources and capabilities. In this setting, US Airways is likely to find itself at a sustained competitive disadvantage.[31]

Finally, a firm may not respond to the advantages of a competitor because it is trying to reduce the level of rivalry in an industry. Any actions a firm takes that have the effect of reducing the level of rivalry in an industry and that also do not require firms in an industry to directly communicate or negotiate with each other can be thought of as **tacit cooperation**. Explicit cooperation, where firms do directly communicate and negotiate with each other, is discussed in detail in Chapter 9's analysis of strategic alliances.

Reducing the level of rivalry in an industry can benefit all firms operating in that industry. This decision can have the effect of reducing the quantity of goods and services provided in an industry to below the competitive level, actions that will have the effect of increasing the prices of these goods or services. When tacit cooperation has the effect of reducing supply and increasing prices, it is known as **tacit collusion**. Tacit collusion can be illegal in some settings. However, firms can also tacitly cooperate along other dimensions besides quantity and price. These actions can also benefit all the firms in an industry and typically are not illegal.[32]

For example, it may be that firms can tacitly agree not to invest in certain kinds of research and development. Some forms of R&D are very expensive, and although these investments might end up generating products or services that could benefit customers, firms might still prefer to avoid the expense and risk. Firms can also tacitly agree not to market their products in certain ways. For example, before regulations compelled them to do so, most tobacco companies had already decided not to put cigarette vending machines in locations usually frequented by children, even though these machines could have generated significant revenues. Also, firms can tacitly cooperate by agreeing not to engage in

Table 3.5 **Attributes of Industry Structure That Facilitate the Development of Tacit Cooperation**

1. Small Number of Competing Firms
2. Homogeneous Products and Costs
3. Market Share Leader
4. High Barriers to Entry

certain manufacturing practices, such as outsourcing to developing countries and engaging in environmentally unsound practices.

All of these actions can have the effect of reducing the level of rivalry in an industry. And reducing the level of rivalry can have the effect of increasing the average level of performance for a firm in an industry. However, tacit cooperative relationships among firms are sometimes difficult to maintain. Typically, in order for tacit cooperation to work an industry must have the structural attributes described in Table 3.5. First, the industry must have relatively few firms. Informally communicating and coordinating strategies among a few firms is difficult enough; it is even more difficult when the industry has a large number of firms. For this reason, tacit cooperation is a viable strategy only when an industry is an oligopoly (see Chapter 2).

Second, firms in this industry must be homogeneous with respect to the products they sell and their cost structure. Having heterogeneous products makes it too easy for a firm to "cheat" on its tacitly cooperative agreements by modifying its products, and heterogeneous cost means that the optimal level of output for a particular firm may be very different from the level agreed to through tacit cooperation. In this setting, a firm might have a strong incentive to increase its output and upset cooperative agreements.

Third, an industry typically has to have at least one strong market-share leader if firms are going to tacitly cooperate. This would be a relatively large firm that has established an example of the kind of behavior that will be mutually beneficial in the industry, and other firms in the industry sometimes fall into line with this example. Indeed, it is often the market-share leader that will choose not to respond to the competitive actions of another firm in the industry in order to maintain cooperative relations.

Finally, the maintenance of tacit cooperation in an industry almost always requires the existence of high barriers to entry. If tacit cooperation is successful, the average performance of firms in an industry will improve. However, this higher level of performance can induce other firms to enter into this industry (see Chapter 2). Such entry will increase the number of firms in an industry and make it very difficult to maintain tacitly cooperative relationships. Thus, it must be very costly for new firms to enter into an industry for those in that industry to maintain their tacit cooperation. The higher these costs, the higher the barriers to entry.

Changing Tactics in Response to Another Firm's Competitive Advantage

Tactics are the specific actions a firm takes to implement its strategies. Examples of tactics include decisions firms make about various attributes of their products—including size, shape, color, and price—specific advertising approaches

adopted by a firm, and specific sales and marketing efforts. Generally, firms change their tactics much more frequently than they change their strategies.[33]

When competing firms are pursuing approximately the same strategies, the competitive advantages that any one firm might enjoy at a given point in time are most likely due to the tactics that that firm is pursuing. In this setting, it is not unusual for competing firms to change their tactics by imitating the tactics of the firm with an advantage in order to reduce that firm's advantage. Although changing one's tactics in this manner will only generate competitive parity, this is usually better than the competitive disadvantage these firms were experiencing.

Several industries provide excellent examples of these kinds of tactical interactions. In consumer goods, for example, if one company increases its sales by adding a "lemon scent" to laundry detergent, then lemon scents start showing up in everyone's laundry detergent. If Coke starts selling significant amounts of C2—a soft drink with half the sugar and half the carbs of regular Coke—can Pepsi's low-sugar/low-carb product be far behind? And when Delta Airlines cuts it airfares, can American and United be far behind? Not surprisingly, these kinds of tactical changes, because they initially may be valuable and rare, are seldom costly to imitate, and thus are typically only sources of temporary competitive advantage.

Sometimes, rather than simply imitating the tactics of a firm with a competitive advantage, a firm at a disadvantage may "leap frog" its competitors by developing an entirely new set of tactics. Procter & Gamble engaged in this strategy when it introduced its laundry detergent, Tide, in a new, concentrated formula. This new formulation required new manufacturing and packaging equipment—the smaller box could not be filled in the current manufacturing lines in the industry—which meant that Tide's competitors had to take more time in imitating the concentrated laundry detergent tactic than other tactics pursued in this industry. Nevertheless, within just a few weeks other firms in this market were introducing their own versions of concentrated laundry detergent.

Indeed, some firms can become so skilled at innovating new products and other tactics that this innovative capability can be a source of sustained competitive advantage. Consider, for example, the performance of Sony. Most observers agree that Sony possesses some special management and coordination skills that enable it to conceive, design, and manufacture high-quality miniaturized consumer electronics. However, virtually every time Sony brings out a new miniaturized product several of its competitors quickly duplicate that product through reverse engineering, thereby reducing Sony's technological advantage. In what way can Sony's socially complex miniaturization resources and capabilities be a source of sustained competitive advantage when most of Sony's products are quickly imitated through direct duplication?

After Sony introduces each new product, it experiences a rapid increase in profits attributable to the new product's unique features. This increase, however, leads other firms to reverse-engineer the Sony product and introduce their own versions. Increased competition results in a reduction in the profits associated with a new product. Thus, at the level of individual products, Sony apparently enjoys only temporary competitive advantages. However, looking at the total returns earned by Sony across all of its new products over time makes clear

the source of Sony's sustained competitive advantage: By exploiting its resources and capabilities in miniaturization, Sony is able to constantly introduce new and exciting personal electronics products. No single product generates a sustained competitive advantage, but, over time, across several such product introductions, Sony's resource and capability advantages lead to sustained competitive advantages.[34]

Changing Strategies in Response to Another Firm's Competitive Advantage

Finally, firms sometimes respond to another firm's competitive advantage by changing their strategies. Obviously, this does not occur very often, and it typically only occurs when another firm's strategies usurp a firm's competitive advantage. In this setting, a firm will not be able to gain even competitive parity if it maintains its strategy, even if it implements that strategy very effectively.

Changes in consumer tastes, in population demographics, and in the laws that govern a business can all have the effect of rendering what once was a valuable strategy as valueless. However, the most frequent impact is changes in technology. For example, no matter how well made a mechanical calculator is, it is simply inferior to an electronic calculator. No matter how efficient the telegraph was in its day, it is an inferior technology to the telephone. And no matter how quickly one's fingers can move the beads on an abacus, an electronic cash register is a better way of keeping track of sales and making change in a store.

When firms change their strategies, they must proceed through the entire strategic management process, as described in Chapter 1. However, these firms will often have difficulty abandoning their traditional strategies. For most firms, their strategy helps define what they do and who they are. Changing its strategy often requires a firm to change its identity and its purposes. These are difficult changes to make, and many firms wait to change their strategy until absolutely forced to do so by disastrous financial results. By then these firms not only have to change their strategy—with all that implies—they have to do so in the face of significant financial pressures.

The ability of virtually all strategies to generate competitive advantages typically expires, sooner or later. In general, it is much better for a firm to change its strategy before that strategy is no longer viable. In this way, a firm can make a planned move to a new strategy that maintains whatever resources and capabilities it still possesses while it develops the new resources and capabilities it will need to compete in the future.

Implications of the Resource-Based View

The RBV and the VRIO framework can be applied to individual firms to understand whether these firms will gain competitive advantages, how sustainable these competitive advantages are likely to be, and what the sources of these competitive advantages are. In this way, the RBV and the VRIO framework can be understood as important complements to the threats and opportunities analyses described in Chapter 2.

Table 3.6 **Broader Implications of the Resource-Based View**

1. The responsibility for competitive advantage in a firm:
   Competitive advantage is every employee's responsibility.
2. Competitive parity and competitive advantage:
   If all a firm does is what its competition does, it can gain only competitive parity. In gaining competitive advantage, it is better for a firm to exploit its own valuable, rare, and costly-to-imitate resources than to imitate the valuable and rare resources of a competitor.
3. Difficult to implement strategies:
   As long as the cost of strategy implementation is less than the value of strategy implementation, the relative cost of implementing a strategy is more important for competitive advantage than the absolute cost of implementing a strategy.
   Firms can systematically overestimate and underestimate their uniqueness.
4. Socially complex resources:
   Not only can employee empowerment, organizational culture, and teamwork be valuable; they can also be sources of sustained competitive advantage.
5. The role of the organization:
   Organization should support the use of valuable, rare, and costly-to-imitate resources. If conflicts between these attributes of a firm arise, change the organization.

However, beyond what these frameworks can say about the competitive performance of a particular firm, the RBV has some broader implications for managers seeking to gain competitive advantages. Some of these broader implications are listed in Table 3.6 and discussed in the following section.

Where Does the Responsibility for Competitive Advantage in a Firm Reside?

First, the RBV suggests that competitive advantages can be found in several of the different resources and capabilities controlled by the firm. These resources and capabilities are not limited to those that are controlled directly by a firm's senior managers. Thus, the responsibility for creating, nurturing, and exploiting valuable, rare, and costly-to-imitate resources and capabilities for competitive advantage is not restricted to senior managers, but falls on every employee in a firm. Therefore, employees should go beyond defining their jobs in functional terms and instead define their jobs in competitive and economic terms.

Consider a simple example. In a recent visit to a very successful automobile manufacturing plant, the plant manager was asked to describe his job responsibilities. He said, "My job is to manage this plant in order to help the firm make and sell the best cars in the world." In response to a similar question, the person in charge of the manufacturing line said, "My job is to manage this manufacturing line in order to help the firm make and sell the best cars in the world." A janitor was also asked to describe his job responsibilities. Although he had not been present in the two earlier interviews, the janitor responded, "My job is to keep this facility clean in order to help the firm make and sell the best cars in the world."

Which of these three employees is most likely to be a source of sustained competitive advantage for this firm? Certainly, the plant manager and the manufacturing line manager *should* define their jobs in terms of helping the firm make and sell the best cars in the world. However, it is unlikely that their responses to this question would be any different than the responses of other senior managers at other manufacturing plants around the world. Put differently, although the definition of these two managers' jobs in terms of enabling the firm to make and sell the best cars in the world is valuable, it is unlikely to be rare, and thus it is likely to be a source of competitive parity, not competitive advantage. However, a janitor who defines her job as helping the firm make and sell the best cars in the world instead of simply to clean the facility is, most would agree, quite unusual. Because it is rare, it might be a source of at least a temporary competitive advantage.[35]

The value created by one janitor defining her job in competitive terms rather than functional terms is not huge, but suppose that all the employees in this plant defined their jobs in these terms. Suddenly, the value that might be created could be substantial. Moreover, the organizational culture and tradition in a firm that would lead employees to define their jobs in this way is likely to be costly for other firms to imitate. Thus, if this approach to defining job responsibilities is broadly diffused in a particular plant, it seems likely to be valuable, rare, and costly to imitate, and thus a source of sustained competitive advantage, assuming the firm is organized to take advantage of this unusual resource.

In the end, it is clear that competitive advantage is too important to remain the sole property of senior management. To the extent that employees throughout an organization are empowered to develop and exploit valuable, rare, and costly-to-imitate resources and capabilities in the accomplishment of their job responsibilities, a firm may actually be able to gain sustained competitive advantages.

Competitive Parity and Competitive Advantage

Second, the RBV suggests that if all a firm does is create value in the same way as its competitors, the best performance it can ever expect to gain is competitive parity. To do better than competitive parity, firms must engage in valuable and rare activities. They must do things to create economic value that other firms have not even thought of, let alone implemented.

This is especially critical for firms that find themselves at a competitive disadvantage. Such a firm certainly should examine its more successful competition, understand what has made this competition so successful, and, where imitation is very low cost, imitate the successful actions of its competitors. In this sense, benchmarking a firm's performance against the performance of its competitors can be extremely important.

However, if this is all that a firm does, it can only expect to gain competitive parity. Gaining competitive advantage depends on a firm discovering its own unique resources and capabilities and how they can be used in choosing and implementing strategies. For a firm seeking competitive advantage, it is better to be excellent in how it develops and exploits its own unique resources and capabilities than it is to be excellent in how it imitates the resources and capabilities of other firms.

This does not imply that firms must always be first movers to gain competitive advantages. Some firms develop valuable, rare, and costly-to-imitate resources and capabilities in being efficient second movers—that is, in rapidly imitating and improving on the product and technological innovations of other firms. Rather than suggesting that firms must always be first movers, the RBV suggests that, in order to gain competitive advantages, firms must implement strategies that rely on valuable, rare, and costly-to-imitate resources and capabilities, whatever those strategies or resources might be.

Difficult-to-Implement Strategies

Third, as firms contemplate different strategic options, they often ask how difficult and costly it will be to implement different strategies. As long as the cost of implementing a strategy is less than the value that a strategy creates, the RBV suggests that the critical question facing firms is not "Is a strategy easy to implement or not?" but rather "Is this strategy easier for us to implement than it is for our competitors to implement?" Firms that already possess the valuable, rare, and costly-to-imitate resources needed to implement a strategy will, in general, find it easier (i.e., less costly) to implement a strategy than firms that first have to develop the required resources and then implement the proposed strategy. For firms that already possess a resource, strategy implementation can be natural and swift.

In understanding the relative costs of implementing a strategy, firms can make two errors. First, they can overestimate the uniqueness of the resources they control. Although every firm's history is unique and no two management teams are exactly the same, this does not always mean that a firm's resources and capabilities will be rare. Firms with similar histories operating in similar industries will often develop similar capabilities. If a firm overestimates the rarity of its resources and capabilities, it can overestimate its ability to generate competitive advantages.

For example, when asked what their most critical sources of competitive advantage are, many firms will cite the quality of their top management team, the quality of their technology, and their commitment to excellence in all that they do. When pushed about their competitors, these same firms will admit that they too have high-quality top management teams, high-quality technology, and a commitment to excellence in all that they do. Although these three attributes can be sources of competitive parity, they cannot be sources of competitive advantage.

Second, firms can sometimes underestimate their uniqueness and thus underestimate the extent to which the strategies they pursue can be sources of sustained competitive advantage. When firms possess valuable, rare, and costly-to-imitate resources, strategy implementation can be relatively easy. In this context, it seems reasonable to expect that other firms will be able to quickly imitate this "easy-to-implement" strategy. Of course, this is not the case if these resources controlled by a firm are, in fact, rare and costly to imitate.

In general, firms must take great care not to overestimate or underestimate their uniqueness. An accurate assessment of the value, rarity, and imitability of a firm's resources is necessary to develop an accurate understanding of the relative costs of implementing a firm's strategies, and thus the ability of those strategies to generate competitive advantages. Often, firms must employ outside assistance in helping them describe the rarity and imitability of their resources, even though

managers in firms will generally be much more familiar with the resources controlled by a firm than outsiders. However, outsiders can provide a measure of objectivity in evaluating the uniqueness of a firm.

Socially Complex Resources

Over the last several decades, much has been written about the importance of employee empowerment, organizational culture, and teamwork for firm performance. Most of this work suggests that firms that empower employees, that have an enabling culture, and that encourage teamwork will, on average, make better strategic choices and implement them more efficiently than firms without these organizational attributes. Using the language of the RBV, most of this work has suggested that employee empowerment, organizational culture, and teamwork, at least in some settings, are economically valuable.[36]

Resource-based logic acknowledges the importance of the value of these organizational attributes. However, it also suggests that these socially complex resources and capabilities can be rare and costly to imitate—and it is these attributes that make it possible for socially complex resources and capabilities to be sources of sustained competitive advantage. Put differently, the RBV actually extends and broadens traditional analyses of the socially complex attributes of firms. Not only can these attributes be valuable, but they can also be rare and costly to imitate, and thus sources of sustained competitive advantage.

The Role of Organization

Finally, resource-based logic suggests that an organization's structure, control systems, and compensation policies should support and enable a firm's efforts to fully exploit the valuable, rare, and costly-to-imitate resources and capabilities it controls. These attributes of organization, by themselves, are usually not sources of sustained competitive advantage.

These observations suggest that if there is a conflict between the resources a firm controls and that firm's organization, the organization should be changed. However, it is often the case that once a firm's structure, control systems, and compensation policies are put in place they tend to remain, regardless of whether they are consistent with a firm's underlying resources and capabilities. In such settings, a firm will not be able to realize the full competitive potential of its underlying resource base. To the extent that a firm's resources and capabilities are continuously evolving, its organizational structure, control systems, and compensation policies must also evolve. For these attributes of organization to evolve, managers must be aware of their link with a firm's resources and capabilities and of organizational alternatives.

Internal Analysis in an International Context

The RBV and the VRIO framework can also be applied in the analysis of firm decisions to enter into international markets. This logic suggests two broad reasons why firms may begin operating in multiple businesses: (1) to take advantage of current resource and capability advantages in new geographic markets and (2) to develop new resource and capability advantages by begin-

ning to operate in new geographic markets. Organizing to implement these international strategies is also important. However, because exploitation of international markets is almost always a specific example of a corporate diversification strategy, the discussion of how to organize such international ventures will be delayed until Chapter 8 analysis of implementing corporate diversification strategies.

Exploiting Current Resource Advantages in New Markets

Suppose a firm already has a sustained competitive advantage in its domestic market. One logical way for a firm with such an advantage to increase its growth and profitability is to exploit those same capabilities in new geographic markets by beginning international operations. However, that a firm's resources are valuable, rare, and costly to imitate in one country does not necessarily mean they will be in a different country.

Several firms have been successful in using their competitive advantage in one country to gain competitive advantages in another country. Coca-Cola, for example, has used its strong brand name—Coke—as a way of entering markets around the world. Currently, Coca-Cola actually sells more Coke products outside of the United States than it sells domestically. Sony used its technical and innovative capabilities to become a dominant player in the U.S. consumer electronics market. BMW used its engineering skills developed by building cars to run at 120 mph on the German autobahn to become an important part of the luxury sports sedan market in the United States. In all these cases, what were valuable, rare, and costly-to-imitate resources or capabilities in a firm's home market also turned out to be valuable, rare, and costly-to-imitate resources in nondomestic markets as well.

However, that a resource or capability is a source of sustained competitive advantage in one country does not guarantee that it will also be valuable, or valuable and rare, or valuable, rare, and costly to imitate in another country. For example, Disney has tried to leverage its brand name and its ability to create and manage theme parks internationally. Its theme park in Asia, Tokyo Disneyland, has been a significant financial success. However, the Disney Company has only a small financial stake in Tokyo Disneyland, so this theme park's financial success has not benefited Disney that much. In contrast, Disney's theme park in Europe, EuroDisney, located just outside of Paris, France, has been a financial drag on the Disney Company. After several financial restructuring efforts, EuroDisney is finally beginning to have a positive impact on the financial position of the Disney Company. But it has taken many years and many millions of dollars to get EuroDisney on a financially secure footing. Apparently, the "Disney experience" at EuroDisney is simply not as valuable as the "Disney experience" in Florida, California, or Tokyo.[37] It is too early to tell if Disney's Hong Kong theme park will follow in the footsteps of Tokyo Disneyland or EuroDisney.

When contemplating the exploitation of a firm's valuable, rare, and costly-to-imitate resources and capabilities in a new geographic market, all four of the VRIO questions are important. Certainly, the value of a firm's resources in a new market may differ from the value of those same resources in its home market. EuroDisney is an example of this problem. Also, if a firm is contemplating entry into a more competitive market than its home market, it is likely that what were rare and costly-to-imitate resources in the home market will be less

rare and less costly to imitate in a new, more competitive, geographic market. As some authors have observed, firms looking to take advantage of their resources in new geographic markets are more likely to be successful if their home markets are highly competitive in the first place.[38] If a firm's valuable resources are a source of sustained competitive advantage in a highly competitive home market, they are more likely to be sources of sustained competitive advantage in other, less competitive, geographic markets—assuming, of course, they are still valuable.

Developing New Resources and Capabilities in New Markets

One of the most compelling reasons for firms to begin operations outside their domestic markets is to develop new resources and capabilities. By beginning such operations, firms can gain a greater understanding of their strengths and weakness. By exposing these resources and capabilities to new competitive contexts, traditional resources can be modified and new resources can be developed.

Of course, for international operations to affect a firm's resources and capabilities, firms must learn from their experiences in nondomestic markets. Learning in this context is anything but automatic. Many firms that begin operations in a nondomestic market encounter challenges and difficulties and then immediately withdraw from their international efforts. Other firms continue to try to operate internationally but are unable to learn how to modify and change the core resources. One study identified three critical determinants of the ability of a firm to develop new resources and capabilities through its international operations: the intent to learn, the transparency of learning partners, and the receptivity to learning.[39]

A firm that has a strong intent to learn from its international operations is more likely to learn than a firm without this intent. Moreover, this intent must be communicated to all those who work in a firm's international activities. Compare, for example, a quote from a manager whose firm failed to learn from its international operations with a quote from a manager whose firm was able to learn from these operations:[40]

> *Our engineers were just as good as [our partner's]. In fact, theirs were narrower technically, but they had a much better understanding of what the company was trying to accomplish. They knew they were there to learn, our people didn't.*

> *We wanted to make learning an automatic discipline. We asked the staff every day, "What did you learn from [our partner] today?" Learning was carefully monitored and recorded.*

Obviously, the second firm was in a much better position than the first to learn from its international operations and to develop new resources and capabilities.

The transparency of learning partners is also an important determinant of the ability to develop new resources and capabilities from international operations. Some international business partners are more open and accessible than others. These differences can reflect different organizational philosophies, practices, and procedures, as well as differences in the culture of a firm's home country. For example, knowledge in Japanese and many other Asian cultures tends to be context specific and deeply embedded in the broader social system. This makes it dif-

ficult for many Western managers to understand and appreciate the subtlety of Japanese business practices and Japanese culture. This, in turn, limits the ability of Western managers to learn from their operations in the Japanese market or from their Japanese partners.[41]

In contrast, knowledge in most Western cultures tends to be less context specific, less deeply embedded in the broader social system. Such knowledge can be written down, taught in classes, and be transmitted, all at a relatively low cost. Japanese managers working in Western economies are more likely to be able to appreciate and understand Western business practices, and thus more able to learn from their operations in the West and from their Western partners.

Finally, firms vary in their receptiveness to learning about new resources and capabilities. A firm's receptiveness to such learning is affected by its culture, its operations, and its history. Research suggests that, before firms can learn from their international operations, they must be prepared to *unlearn*. Unlearning requires a firm to modify or abandon traditional ways of engaging in business. Unlearning can be difficult, especially if a firm has a long history of success using old patterns of behavior and if those old patterns of behavior are reflected in its organizational structure, formal and informal management controls, and compensation policies.

SUMMARY

The resource-based view (RBV) is an economic theory that suggests that firm performance is a function of the types of resources and capabilities controlled by firms. Resources are the tangible and intangible assets a firm uses to conceive of and implement its strategies. Capabilities are a subset of resources that enable a firm to take advantage of its other resources. Resources and capabilities can be categorized into financial, physical, human, and organizational resources categories.

The RBV makes two assumptions about resources and capabilities: the assumption of resource heterogeneity (that some resources and capabilities may be heterogeneously distributed across competing firms) and the assumption of resource immobility (that this heterogeneity may be long lasting). These two assumptions can be used to describe conditions under which firms will gain competitive advantages by exploiting their resources.

A tool for analyzing a firm's internal strengths and weaknesses can be derived from the RBV. Called the VRIO framework, this tool asks four questions about a firm's resources and capabilities in order to evaluate their competitive potential. These questions are the question of value, the question of rarity, the question of imitability, and the question of organization.

A firm's resources and capabilities are valuable when they enable it to exploit external opportunities or neutralize external threats. Such valuable resources and capabilities are a firm's strengths. Resources and capabilities that are not valuable are a firm's weaknesses. Using valuable resources to exploit external opportunities or neutralize external threats will have the effect of increasing a firm's net revenues or decreasing its net costs.

One way to identify a firm's valuable resources and capabilities is by examining its value chain. A firm's value chain is the list of business activities it engages in to develop, produce, and sell its products or services. Different stages in this value chain require different resources and capabilities, and differences in value-chain choices across firms can lead to important differences among the resources and capabilities controlled by different

companies. Two generic value chains have been developed, one by McKinsey and Company and another by Michael Porter.

Valuable and common (i.e., not rare) resources and capabilities can be a source of competitive parity. Failure to invest in such resources can create a competitive disadvantage for a firm. Valuable and rare resources can be a source of at least a temporary competitive advantage. There are fewer firms able to control such a resource and still exploit it as a source of at least temporary competitive advantage than there are firms that will generate perfect competition dynamics in an industry.

Valuable, rare, and costly-to-imitate resources and capabilities can be a source of sustained competitive advantage. Imitation can occur through direct duplication or through substitution. A firm's resources and capabilities may be costly to imitate for at least four reasons: unique historical circumstances, causal ambiguity, socially complex resources and capabilities, and patents.

To take full advantage of the potential of its resources and capabilities, a firm must be appropriately organized. A firm's organization consists of its formal reporting structure, its formal and informal control processes, and its compensation policy. These are complementary resources in that they are rarely sources of competitive advantage on their own.

The VRIO framework can be used to identify the competitive implications of a firm's resources and capabilities—whether they are a source of competitive disadvantage, competitive parity, temporary competitive advantage, or sustained competitive advantage—and the extent to which these resources and capabilities are strengths or weaknesses.

When a firm faces a competitor that has a sustained competitive advantage, the firm's options are not to respond, to change its tactics, or to change its strategies. A firm may choose not to respond in this setting for at least three reasons. First, a response might weaken its own sources of sustained competitive advantage. Second, a firm may not have the resources required to respond. Third, a firm may be trying to create or maintain tacit cooperation within an industry.

The RBV has a series of broader managerial implications as well. For example, resource-based logic suggests that competitive advantage is every employee's responsibility. It also suggests that if all a firm does is what its competition does, it can gain only competitive parity, and that in gaining competitive advantage it is better for a firm to exploit its own valuable, rare, and costly-to-imitate resources than to imitate the valuable and rare resources of a competitor. Also, resource-based logic implies that as long as the cost of strategy implementation is less than the value of strategy implementation, the relative cost of implementing a strategy is more important for competitive advantage than the absolute cost of implementing a strategy. It also implies that firms can systematically overestimate and underestimate their uniqueness. With regard to a firm's resources and capabilities, resource-based logic suggests that not only can employee empowerment, organizational culture, and teamwork be valuable; they can also be sources of sustained competitive advantage. Also, if conflicts arise between a firm's valuable, rare, and costly-to-imitate resources and its organization, the organization should be changed.

Finally, the RBV and the VRIO framework can also be applied in an international context. In general, firms pursue international opportunities to either exploit their currently valuable, rare, and costly-to-imitate resources and capabilities in new markets or to develop new resources and capabilities. The ability to develop new resources and capabilities through international operations depends on a firm's intent to learn, the transparency of its international business partners, and its receptiveness to learning.

CHALLENGE QUESTIONS

1. Which of the following approaches to strategy formulation is more likely to generate economic profits: (a) evaluating external opportunities and threats and then developing resources and capabilities to exploit these opportunities and neutralize these threats or (b) evaluating internal resources and capabilities and then searching for industries where they can be exploited? Explain your answer.

2. Which firm will have a higher level of economic performance: (a) a firm with valuable, rare, and costly-to-imitate resources and capabilities operating in a very attractive industry or (b) a firm with valuable, rare, and costly-to-imitate resources and capabilities operating in a very unattractive industry? Assume both these firms are appropriately organized. Explain your answer.

3. Which is more critical to sustaining human life—water or diamonds? Why do firms that provide water to customers generally earn lower economic performance than firms that provide diamonds?

4. Will a firm currently experiencing competitive parity be able to gain sustained competitive advantages by studying another firm that is currently experiencing sustained competitive advantages? Why or why not?

5. Your former college roommate calls you and asks to borrow $10,000 so that he can open a pizza restaurant in his hometown. He acknowledges that there is a high degree of rivalry in this market, that the cost of entry is low, and that there are numerous substitutes for pizza, but he believes that his pizza restaurant will have some sustained competitive advantages. For example, he is going to have sawdust on his floor, a variety of imported beers, and a late-night delivery service. Will you lend him the money? Why or why not?

6. In the text, it is suggested that Boeing did not respond to Airbus's announcement of the development of a super-jumbo aircraft. Assuming this aircraft will give Airbus a competitive advantage in the segment of the airliner business that supplies airplanes for long international flights, why did Boeing not respond?

(a) Does it have its own competitive advantage that it does not want to abandon?
(b) Does it not have the resources and capabilities needed to respond?
(c) Is it trying to reduce the level of rivalry in this industry?

7. Which firm is more likely to be successful in exploiting its sources of sustained competitive advantage in its home market than in a highly competitive, nondomestic market: (a) a firm from a less competitive home country or (b) a firm from a more competitive home country? Why?

8. What are some indicators that a firm is engaging in an international strategy to develop new resources and capabilities?

PROBLEM SET

1. Apply the VRIO framework in the following settings. Will the actions described be a source of competitive disadvantage, parity, temporary advantage, or sustained competitive advantage? Explain your answers.

(a) Procter & Gamble introduces new, smaller packaging for its Tide laundry detergent.
(b) American Airlines announces a 5-percent across-the-board reduction in airfares.
(c) The Korean automobile firm Hyundai announces a 10-year, 100,000 mile warranty on its cars.
(d) Microsoft makes it easier to transfer data and information from Microsoft Word to Microsoft Excel.
(e) Merck is able to coordinate the work of its chemists and biologists in the development of new drugs.
(f) Ford patents a new kind of brake pad for its cars.
(g) Ashland Chemical, a specialty chemical company, patents a new chemical.
(h) The New York Yankees sign All-Star pitcher Randy Johnson to a long-term contract.
(i) Michael Dell uses the money he has made from Dell to purchase the Dallas Cowboys football team.
(j) Ted Turner uses the money he has made from his broadcasting empire to purchase the Atlanta Braves baseball team.

2. Identify three firms you might want to work for. Using the VRIO framework, evaluate the extent to which the resources and capabilities of these firms gives them the potential to realize competitive disadvantages, parity, temporary advantages, or sustained advantages. What implications, if any, does this analysis have for the company you might want to work for?

3. You have been assigned to estimate the present value of a potential construction project for your company. How would you use the VRIO framework to construct the cash-flow analysis that is a part of any present-value calculation?

END NOTES

1. The term *"the resource-based view"* was coined by Wernerfelt, B. (1984). "A resource-based view of the firm." *Strategic Management Journal*, 5, pp. 171–180. Some important early contributors to this theory include Rumelt, R. P. (1984). "Toward a strategic theory of the firm." In R. Lamb (ed.), *Competitive strategic Management* (pp. 556–570). Upper Saddle River, NJ: Prentice Hall; and Barney, J. B. (1986). "Strategic factor markets: Expectations, luck and business strategy." *Management Science*, 32, pp. 1512–1514. A second wave of important early resource-based theoretical work includes Barney, J. B. (1991). "Firm resources and sustained competitive advantage." *Journal of Management*, 7, pp. 49–64; Dierickx, I., and K. Cool (1989). "Asset stock accumulation and sustainability of competitive advantage." *Management Science*, 35, pp. 1504–1511; Conner, K. R. (1991). "A historical comparison of resource-based theory and five schools of thought within industrial organization economics: Do we have a new theory of the firm?" *Journal of Management*, 17(1), pp. 121–154; and Peteraf, M. A. (1993). "The cornerstones of competitive advantage: A resource-based view." *Strategic Management Journal*, 14, pp. 179–191. A review of much of this early theoretical literature can be found in Mahoney, J. T., and J. R. Pandian (1992). "The resource-based view within the conversation of strategic management." *Strategic Management Journal*, 13, pp. 363–380. The theoretical perspective has also spawned a growing body of empirical work, including Brush, T. H., and K. W. Artz (1999). "Toward a contingent resource-based theory." *Strategic Management Journal*, 20, pp. 223–250; Marcus, A., and D. Geffen (1998). "The dialectics of competency acquisition." *Strategic Management Journal*, 19, pp. 1145–1168; Brush, T. H., P. Bromiley, and M. Hendrickx (1999). "The relative influence of industry and corporation on business segment performance." *Strategic Management Journal*, 20, pp. 519–547; Yeoh, P.-L., and K. Roth (1999). "An empirical analysis of sustained advantage in the U.S. pharmaceutical industry." *Strategic Management Journal*, 20, pp. 637–653; Roberts, P. (1999). "Product innovation, product-market competition and persistent profitability in the U.S. pharmaceutical industry." *Strategic Management Journal*, 20, pp. 655–670; Gulati, R. (1999). "Network location and learning." *Strategic Management Journal*, 20, pp. 397–420; Lorenzoni, G., and A. Lipparini (1999). "The leveraging of interfirm relationships as a distinctive organizational capability." *Strategic Management Journal*, 20, pp. 317–338; Majumdar, S. (1998). "On the utilization of resources." *Strategic Management Journal*, 19(9) pp. 809–831; Makadok, R. (1997). "Do inter-firm differences in capabilities affect strategic pricing dynamics?" *Academy of Management Proceedings '97*, pp. 30–34; Silverman, B. S., J. A. Nickerson, and J. Freeman (1997). "Profitability, transactional alignment, and organizational mortality in the U.S. trucking industry." *Strategic Management Journal*, 18 (Summer special issue), pp. 31–52; Powell, T. C., and A. Dent-Micallef (1997). "Information technology as competitive advantage." *Strategic Management Journal*, 18(5), pp. 375–405; Miller, D., and J. Shamsie (1996). "The Resource-Based View of the firm in two environments." *Academy of Management Journal*, 39(3), pp. 519–543; and Maijoor, S., and A. Van Witteloostuijn (1996). "An empirical test of the resource-based theory." *Strategic Management Journal*, 17, pp. 549–569; Barnett, W. P., H. R. Greve, and D. Y. Park (1994). "An evolutionary model of organizational performance." *Strategic Management Journal*, 15 (Winter special issue), pp. 11–28; Levinthal, D., and J. Myatt (1994). "Co-evolution of capabilities and industry: The evolution of mutual fund processing." *Strategic Management Journal*, 17, pp. 45–62; Henderson, R., and I. Cockburn (1994). "Measuring competence? Exploring firm effects in pharmaceutical research." *Strategic Management Journal*, 15, pp. 63–84; Pisano, G. P. (1994). "Knowledge, integration, and the locus of learning: An empirical analysis of process development." *Strategic Management Journal*, 15, pp. 85–100; and Zajac, E. J., and J. D. Westphal (1994). "The costs and benefits of managerial incentives and monitoring in large U.S. corporations: When is more not better?" *Strategic Management Journal*, 15, pp. 121–142.
2. Ghemawat, P. (1986). "Wal-Mart stores' discount operations." Harvard Business School Case No. 9-387-018, on Wal-Mart; Kupfer, A. (1991). "The champion of cheap clones." *Fortune*, September 23, pp. 115–120; and Holder, D. (1989). "L. L. Bean, Inc.—1974." Harvard Business School Case No. 9-676-014, on L. L. Bean. Some of Wal-Mart's more recent moves, especially its international acquisitions, are described in Laing, J. R. (1999). "Blimey! Wal-Mart." *Barron's*, 79, p. 14. L. L. Bean's lethargic performance in the 1990s, together with its turnaround plan, is described in Symonds, W. (1998). "Paddling harder at L. L. Bean." *BusinessWeek*, December 7, p. 72.
3. For an early discussion of the importance of human capital in firms, see Becker, G. S. (1964). *Human capital*. New York: Columbia University Press.
4. Heskett, J. L., and R. H. Hallowell (1993). "Southwest Airlines: 1993 (A)." Harvard Business School Case No. 9-695-023.
5. See Barney, J. (1991). "Firm resources and sustained competitive advantage." *Journal of Management*, 17, pp. 99–120.
6. See Schlender, B. R. (1992). "How Sony keeps the magic going." *Fortune*, February 24, pp. 75–84; and (1999). "The weakling kicks back." *The Economist*, July 3, p. 46, for a discussion at Sony. See Krogh, L., J. Praeger, D. Sorenson, and J. Tomlinson (1988). "How 3M evaluates its R&D programs." *Research Technology Management*, 31, pp. 10–14.
7. Anders, G. (2002). "AOL's true believers." *Fast Company*, July pp. 96 +. In a recent *Wall Street Journal* article, managers of AOL Time Warner admitted they are no longer seeking synergies across their businesses. See Karnitschnig, M. (2006). "That's All, Folks: After years of pushing synergy, Time Warner, Inc. says enough." *Wall Street Journal*, June 2, A1+.
8. See Grant, R. M. (1991). *Contemporary strategy analysis*. Cambridge, MA: Basil Blackwell.
9. Porter, M. E. (1987). *Competitive advantage*. New York: Free Press.
10. Lipman, S., and R. Rumelt (1982). "Uncertain imitability: An analysis of interfirm differences in efficiency under competition." *Bell Journal of Economics*, 13, pp. 418–438; Barney, J. B. (1986). "Strategic factor markets: Expectations, luck and business strategy." *Management Science*, 32, pp. 1512–1514; and Barney, J. B. (1986). "Organizational culture: Can it be a source of sustained competitive advantage?" *Academy of Management Review*, 11, pp. 656–665.
11. Note that the definition of sustained competitive advantage presented here, though different, is consistent with the definition given in Chapter 1. In particular, a firm that enjoys a competitive advantage for a long period of time (the Chapter 1 definition) does not have its advantage competed away through imitation (the Chapter 3 definition).
12. See Breen, B. (2003). "What's selling in America." *Fast Company*, January, pp. 80 +.
13. These explanations of costly imitation were first developed by Dierickx, I., and K. Cool (1989). "Asset stock accumulation and sustainability of competitive advantage." *Management Science*, 35, pp. 1504–1511; Barney, J. B. (1991). "Firm resources and sustained competitive advantage." *Journal of Management*, 7, pp. 49–64; Mahoney, J. T., and J. R. Pandian (1992). "The resource-based view within the conversation of strategic management." *Strategic Management Journal*, 13, pp. 363–380; and Peteraf, M. A. (1993). "The cornerstones of competitive advantage: A resource-based view." *Strategic Management Journal*, 14, pp. 179–191.
14. Dierickx, I., and K. Cool (1989). "Asset stock accumulation and sustainability of competitive advantage." *Management Science*, 35,

pp. 1504–1511. In economics, the role of history in determining competitive outcomes was first examined by Arthur, W. B. (1989). "Competing technologies, increasing returns, and lock-in by historical events." *Economic Journal*, 99, pp. 116–131.

15. See Breen, B. (2003). "What's selling in America." *Fast Company*, January, pp. 80 +.
16. This term was first suggested by Arthur, W. B. (1989). "Competing technologies, increasing returns, and lock-in by historical events." *Economic Journal*, 99, pp. 116–131. A good example of path dependence is the development of Silicon Valley and the important role that Stanford University and a few early firms played in creating the network of organizations that has since become the center of much of the electronics business. See Alley, J. (1997). "The heart of Silicon Valley." *Fortune*, July 7, pp. 86 +.
17. Reed, R., and R. J. DeFillippi (1990). "Causal ambiguity, barriers to imitation, and sustainable competitive advantage." *Academy of Management Review*, 15(1), pp. 88–102, suggest that causal ambiguity about the sources of a firm's competitive advantage need only exist among a firm's competitors for it to be a source of sustained competitive advantage. Managers in a firm, they argue, may fully understand the sources of their advantage. However, in a world where employees freely and frequently move from firm to firm, such special insights into the sources of a firm's competitive advantage would not remain proprietary for very long. For this reason, for causal ambiguity to be a source of sustained competitive advantage, both the firm trying to gain such an advantage and those trying to imitate it must face similar levels of causal ambiguity. Indeed, Wal-Mart recently sued Amazon for trying to steal some of its secrets by hiring employees away from Wal-Mart. See Nelson, E. (1998). "Wal-Mart accuses Amazon.com of stealing its secrets in lawsuit." *Wall Street Journal*, October 19, p. B10. For a discussion of how difficult it is to maintain secrets, especially in a world of the World Wide Web, see Farnham, A. (1997). "How safe are your secrets?" *Fortune*, September 8, pp. 114 +. The international dimensions of the challenges associated with maintaining secrets are discussed in Robinson, E. (1998). "China spies target corporate America." *Fortune*, March 30, pp. 118 +.
18. Itami, H. (1987). *Mobilizing invisible assets*, Cambridge, MA: Harvard University Press.
19. See Barney, J. B., and B. Tyler (1990). "The attributes of top management teams and sustained competitive advantage." In M. Lawless and L. Gomez-Mejia (eds.), *Managing the High Technology Firm* (pp. 33–48). Greenwich, CT: JAI Press, on teamwork in top management teams; Barney, J. B. (1986). "Organizational culture: Can it be a source of sustained competitive advantage?" *Academy of Management Review*, 11, pp. 656–665, on organizational culture; Henderson, R. M., and I. Cockburn, (1994). "Measuring competence? Exploring firm effects in pharmaceutical research." *Strategic Management Journal*, 15, pp. 63–84, on relationships among employees; and Dyer, J. H., and H. Singh (1998). "The relational view: Cooperative strategy and sources of interorganizational competitive advantage." *Academy of Management Review*, 23(4), pp. 660–679, on relationships with suppliers and customers.
20. For a discussion of knowledge as a source of competitive advantage in the popular business press, see Stewart, T. (1995). "Getting real about brain power." *Fortune*, November 27, pp. 201 +; Stewart, T. (1995). "Mapping corporate knowledge." *Fortune*, October 30, pp. 209 +. For the academic version of this same issue, see Simonin, B. L. (1999). "Ambiguity and the process of knowledge transfer in strategic alliances." *Strategic Management Journal*, 20(7), pp. 595–623; Spender, J. C. (1996). "Making knowledge the basis of a dynamic theory of the firm." *Strategic Management Journal*, 17 (Winter special issue), pp. 109–122; Hatfield, D. D., J. P. Liebeskind, and T. C. Opler (1996). "The effects of corporate restructuring on aggregate industry specialization." *Strategic Management Journal*, 17, pp. 55–72; and Grant, R. M. (1996). "Toward a knowledge-based theory of the firm." *Strategic Management Journal*, 17 (Winter special issue), pp. 109–122.
21. Porras, J., and P. O. Berg (1978). "The impact of organizational development." *Academy of Management Review*, 3, pp. 249–266, have done one of the few empirical studies on whether or not systematic efforts to change socially complex resources are effective. They found that such efforts are usually not effective. Although this study is getting older, it is unlikely that current change methods will be any more effective than the methods examined by these authors.
22. See Hambrick, D. (1987). "Top management teams: Key to strategic success." *California Management Review*, 30, pp. 88–108, on top management teams; Barney, J. B. (1986). "Organizational culture: Can it be a source of sustained competitive advantage?" *Academy of Management Review*, 11, pp. 656–665, on culture; Porter, M. E. (1980). *Competitive strategy*. New York: Free Press; and Klein, B., and K. Leffler (1981). "The role of market forces in assuring contractual performance." *Journal of Political Economy*, 89, pp. 615–641, on relations with customers.
23. See Harris, L. C., and E. Ogbonna (1999). "Developing a market oriented culture: A critical evaluation." *Journal of Management Studies*, 36(2), pp. 177–196.
24. Lieberman, M. B. (1987). "The learning curve, diffusion, and competitive strategy." *Strategic Management Journal*, 8, pp. 441–452, has a very good analysis of the cost of imitation in the chemical industry. See also Lieberman, M. B., and D. B. Montgomery (1988). "First-mover advantages." *Strategic Management Journal*, 9, pp. 41–58.
25. Rumelt, R. P. (1984). "Toward a strategic theory of the firm." In R. Lamb (ed.), *Competitive strategic management* (pp. 556–570). Upper Saddle River, NJ: Prentice Hall, among others, cites patents as a source of costly imitation.
26. Significant debate surrounds the patentability of different kinds of products. For example, although typefaces are not patentable (and cannot be copyrighted), the process for displaying typefaces may be. See Thurm, S. (1998). "Copy this typeface? Court ruling counsels caution." *Wall Street Journal*, July 15, pp. B1 +.
27. For an insightful discussion of these complementary resources, see Amit, R., and P. J. H. Schoemaker (1993). "Strategic assets and organizational rent." *Strategic Management Journal*, 14(1), pp. 33–45.
28. See Kearns, D. T., and D. A. Nadler (1992). *Prophets in the dark*. New York: HarperCollins; and Smith, D. K., and R. C. Alexander (1988). *Fumbling the future*. New York: William Morrow.
29. (2004). "Gateway will close remaining retail stores." *Wall Street Journal*, April 2, p. B2; Michaels, D. (2004). "AA Airbus, picturing huge jet was easy; building it was hard." *Wall Street Journal*, May 27, pp. A1 +; Zeller, W., A. Michael, and L. Woellert (2004). "The airline debate over cheap seats." *Wall Street Journal*, May 24, pp. A1 +.
30. (2004). "Casio." *Marketing*, May 6, p. 95; Weisul, K. (2003). "When time is money—and art." *BusinessWeek*, July 21, p. 86.
31. That said, there have been some "cracks" in Southwest's capabilities armor lately. Its CEO suddenly resigned, and its level of profitability dropped precipitously in 2004. Whether these are indicators that Southwest's core strengths are being dissipated or there are short-term problems is not yet known. However, Southwest's stumbling would give US Airways some hope. Trottman, M., S. McCartney, and J. Lublin (2004). "Southwest's CEO abruptly quits 'draining job.'" *Wall Street Journal*, July 16, pp. A1 +.
32. One should consult a lawyer before getting involved in these forms of tacit cooperation.
33. This aspect of the competitive dynamics in an industry is discussed in Smith, K. G., C. M. Grimm, and M. J. Gannon (1992). *Dynamics of competitive strategy*. Newberry Park, CA: Sage.
34. Schlender, B. R. (1992). "How Sony keeps the magic going." *Fortune*, February 24, pp. 75–84.
35. Personal communication.
36. See, for example, T. Peters and R. Waterman (1982), *In Search of Excellence*, New York: Harper Collins; J. Collins and J. Porras (1994), *Built to last*, New York: Harper Business; J. Collins (2001), *Good to great*, New York: Harper Collins; and W. G. Bennis and R. Townsend (2006), *Reinventing leadership*, New York: Harper Collins.
37. Collis, D. (1988). "The Walt Disney Company (A): Corporate strategy." Harvard Business School Case No. 1-388-147; Rukstad, N. M., and D. Collis (2001). "The Walt Disney Company: The entertainment king." Harvard Business School Case No. 9-701-035.
38. Porter, M. E. (1990). *The competitive advantage of nations*. New York: Free Press.
39. See Hamel, G. (1991). "Competition for competence and inter-partner learning within international strategic alliances." *Strategic Management Journal*, 12, pp. 83–103.
40. Quoted in Hamel, G. (1991). "Competition for competence and inter-partner learning within international strategic alliances." *Strategic Management Journal*, 12, p. 86.
41. See, for example, Peterson, R. B., and J. Y. Shimada (1978). "Sources of management problems in Japanese–American joint ventures." *Academy of Management Review*, 3, pp. 796–804.