10 INDUSTRY ANALYSIS

In Part One of this text, we explored the economics of the firm's relationships with its upstream and downstream trading partners. We saw how factors such as incomplete contracts, asset specificity, and long-term market interactions can affect the ability of firms to prosper in these relationships. In Part Two, we have examined the economics of competition and seen how market and product characteristics such as concentration, entry barriers, and differentiation can affect the profits of individual firms and entire industries. Because these chapters introduce so many important concepts, the student could lose track of the key insights. *Industry analysis* frameworks, such as Michael Porter's *Five Forces* and Adam Brandenberger and Barry Nalebuff's *Value Net*, provide a structure that enables us to systematically work through these wide-ranging and often complex economic issues. An industry analysis based on such frameworks facilitates the following important tasks:

- Assessment of industry and firm performance.
- Identification of key factors affecting performance in vertical trading relationships and horizontal competitive relationships.
- Determination of how changes in the business environment may affect performance.
- Identifying opportunities and threats in the business landscape. In this regard, industry analysis is essential to performing "SWOT" analysis, a "bread-and-butter" tool in strategic planning. (SWOT stands for strengths, weaknesses, opportunities, and threats. Chapter 11 will offer insights into identifying firm strengths and weaknesses.)

In addition, industry analysis is invaluable for assessing the generic business strategies that we introduce in Part Three.

Parts One and Two are grounded in microeconomics, particularly the economics of the firm and the economics of industrial organization. Although the roots of these fields can be traced back a century or more, they had little impact on business strategy

until Michael Porter published a series of articles in the 1970s that culminated in his pathbreaking book *Competitive Strategy*. Porter presents a convenient framework for exploring the economic factors that affect the profits of an industry. Porter's main innovation is to classify these factors into five major forces that encompass the vertical chain and market competition.

In their book *Coopetition*, Brandenberger and Nalebuff make a significant addition to the five-forces framework. They describe the firm's "Value Net," which includes suppliers, distributors, and competitors. Whereas Porter describes how suppliers, distributors, and competitors might destroy a firm's profits, Brandenberger and Nalebuff's key insight is that these firms often *enhance* firm profits. In otherwords, strategic analysis must account for both cooperation and competition. (Hence the title of their book.)

This chapter shows how to perform a five-forces industry analysis that accounts for the economic principles in Parts One and Two. It also shows how to accommodate the Value Net principles introduced by Brandenberger and Nalebuff. We illustrate these ideas by examining three very different markets: hospitals, professional sports, and airframe manufacturing. We selected these markets both because they present a diversity of competitive forces and because we have a strong institutional understanding of each. Indeed, solid industry analysis is not possible without such understanding. Economic knowledge that is devoid of institutional knowledge can be dangerous!

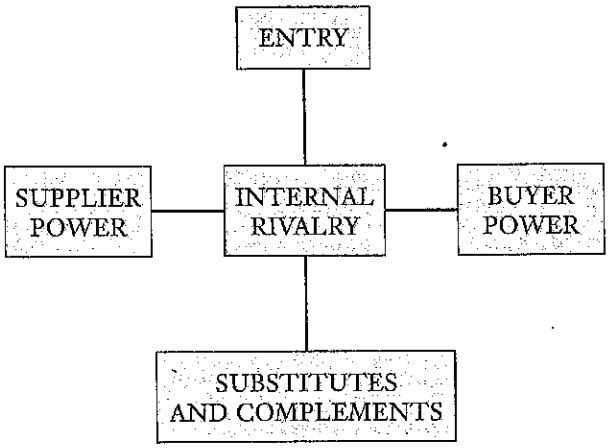
The five-forces framework has several limitations. First, it pays little attention to factors that might affect demand. It accounts for the availability and prices of substitute and complementary products but ignores changes in consumer income, tastes, and firm strategies for boosting demand, such as advertising. Second, it focuses on a whole industry rather than on that industry's individual firms. Firms may occupy unique positions in their markets that insulate them from some competitive forces. Third, the framework does not explicitly account for the role of the government, except when the government is a supplier or buyer. The government as a regulator can profoundly affect industry profitability and could be considered a sixth force. Fourth, the five-forces analysis is qualitative. For example, an analysis of industry structure may suggest that the threat of entry is high, but the framework does not show how to estimate the probability of entry. Because it is qualitative, the framework is especially useful for assessing trends—that is, identifying changes in market conditions that might cause industry profitability to increase or decrease.

Performing a Five-Forces Analysis

The five-forces framework is not a set of principles per se. The relevant principles have been developed in the preceding chapters. Instead, the five-forces framework is a tool for ensuring that you systematically use these principles to assess the current status and likely evolution of an industry.

The five forces, as represented in Figure 10.1, are internal rivalry, entry, substitute and complementary products, supplier power, and buyer power. Internal rivalry is in the center because it may be affected by each of the other forces. One assesses each force by asking "Is it sufficiently strong to reduce or eliminate industry profits?" To answer this question, it is essential to refer to the economic principles that apply for each force. For example, when assessing the power of suppliers to affect industry and firm performance, you should determine whether firms in the industry have made

FIGURE 10.1
THE FIVE-FORCES FRAMEWORK



relationship-specific investments with their suppliers (or vice versa) and whether they are protected from potential holdup either by contracts or market forces. In the following discussion, we will identify those principles that are most relevant to each force.

The appendix offers a "five-forces scorecard" for doing industry analysis. The template includes specific questions about each force. Your responses should indicate whether this force poses a major threat to profits today, as well as identify trends.

Internal Rivalry

Internal rivalry refers to the jockeying for share by firms within a market. Thus, an analysis of internal rivalry must begin by defining the market. Be sure to include all firms that constrain each other's strategic decision making, as described in Chapter 6, and pay attention to both the product market and geographic market definitions. For example, if you are analyzing internal rivalry among hotels, note that most consumers have specific geographic preferences when selecting a hotel. Consumers may also have strong preferences for particular categories of hotels, such as business hotels or family-style resorts. This implies that competition is local and may differ by hotel category, and your analysis should reflect this difference. If you are unsure whether to include a firm in the relevant market, remember that you can always exclude it from your consideration of internal rivalry and still consider it when you assess substitutes and complements.

As we discussed in Chapters 6 through 8, firms may compete on a number of price and nonprice dimensions. Price competition erodes profits by driving down price-cost margins. Nonprice competition erodes profits by driving up fixed costs (e.g., new product development) and marginal costs (e.g., adding product features). To the extent that firms can pass cost increases along to consumers in the form of higher prices (i.e., the industry price elasticity of demand is not too large), nonprice competition is less likely to erode profits than is price competition. In fact, firms in many industries are engaged in vigorous nonprice competition, yet have been able to enjoy solid profits over an extended period of time. Good examples include couture fashion, where competition is based on style and image; cola, where advertising and new product varieties drive market share; and pharmaceuticals, driven by R&D "patent races."

Price competition is far more likely to erode industry profits, in part because it is difficult to reduce costs by enough to maintain price-cost margins. Industry prices do not fall by themselves—one or more firms must reduce prices. A firm reduces prices if it believes it can gain market share by doing so. Hence, the incentives for a firm to reduce price are related to the degree to which it expects its market share to increase. Each of the following conditions therefore tends to heat up price competition:

- *There are many sellers in the market.* The structure/conduct/performance paradigm introduced in Chapter 6 predicts that prices are lower when there are more firms in the market. There are several reasons for this condition. When there are many competitors, there is a good chance that at least one is dissatisfied with the status quo and will want to lower price to improve its market position. At the same time, it will shoulder a smaller portion of the revenue-destruction effect. Thinking long term, a firm with a low market share might conclude that its rivals will not respond if it lowers price.
- *The industry is stagnant or declining.* Firms cannot easily expand their own output without stealing from competitors. This often elicits a competitive response that tends to intensify competition.
- *Firms have different costs.* Low-cost firms may be unhappy with a high price, reasoning that if price falls, their high-cost rivals may exit.
- *Some firms have excess capacity.* Firms with excess capacity may be under pressure to boost sales and often can rapidly expand output to steal business from rivals.
- *Products are undifferentiated/buyers have low switching costs.* When products are undifferentiated and switching costs are low, firms are tempted to undercut their rivals' prices because this can generate a substantial increase in market share.
- *Prices and terms of sales are unobservable/prices cannot be adjusted quickly.* This condition increases the response time of rivals, enabling the price cutter to potentially gain substantial market share before its rivals match the price cut. This also increases the chances of misreads/misjudgments and makes it more difficult for firms to develop "facilitating practices" (see below).
- *There are large/infrequent sales orders.* A firm may be tempted to undercut its rivals to secure a particularly large order, believing that the substantial gains may more than offset any losses from future rounds of price cutting. This is especially true if different managers are responsible for different bids, and each is rewarded on the basis of his or her own sales.
- *Industry does not use "facilitating practices" or have a history of cooperative pricing.* In the absence of price leadership, price announcements, or other facilitating practices, firms may be unable to "agree" on a suitable industry price, and some may lower price to gain an advantage. A history of cooperative pricing may assure industry participants that each is striving to find a price that works to everyone's collective benefit.
- *There are strong exit barriers.* This condition can prolong price wars as firms struggle to survive instead of exiting.
- *There is high industry price elasticity of demand.* This condition can cut into sales and profits when nonprice competition heats up.

Entry

Entry erodes incumbents' profits in two ways. First, entrants divide market demand among more sellers. (Entrants rarely grow the market enough so that even the incumbents are better off.) Second, entrants decrease market concentration and heat up internal rivalry. Some entry barriers are exogenous (i.e., they result from the technological requirements for successful competition), whereas others are endogenous (i.e., they result from strategic choices made by incumbents). Each of the following tends to affect the threat of entry:

- *Production entails significant economies of sales—minimum efficient scale is large relative to the size of the market.* The entrant must achieve a substantial market share to reach minimum efficient scale, and if it does not, it may be at a significant cost disadvantage.
- *Government protection of incumbents.* Laws may favor some firms over others.
- *Consumers highly value reputation/consumers are brand loyal.* Entrants must invest heavily to establish a strong reputation and brand awareness. Diversifying entrants using a brand umbrella may be more successful than entirely new entrants. Third-party report cards (e.g., *Consumer Reports*) can facilitate quality shopping and reduce the advantage of incumbency.
- *Access of entrants to key inputs, including technological know-how, raw materials, distribution, and locations.* Patents, unique locations, and so forth can all be barriers to entry. Incumbent must avoid overpaying to tie up unique inputs and may find it more profitable to sell its patent, location, and the like, to a would-be entrant.
- *Experience curve.* A steep experience curve puts entrants at a cost disadvantage.
- *Network externalities.* This gives an advantage to incumbents with a large installed base. If incumbents are slow to establish an installed base, an entrant may do so through a large-scale product launch.
- *Expectations about postentry competition.* Historical evidence is invaluable to predicting postentry competition. Does the incumbent have a reputation for predatory pricing in the face of entry? Do incumbents have a history of persevering through price wars? Do incumbents have sufficient excess capacity to flood the market, and if necessary, to drive the entrant from the market?

Substitutes and Complements

Although the five-forces analysis does not directly consider demand, it does consider two important factors that influence demand—substitutes and complements. Substitutes erode profits in the same way as entrants by stealing business and intensifying internal rivalry. (Think of low-priced cellular communications competing with land-lines and the Internet.) Complements boost the demand for the product in question, thereby enhancing profit opportunities for the industry. (Think of innovations in big-screen televisions boosting the demand for home theater loudspeakers.) Bear in mind, however, that changes in demand can affect internal rivalry, entry, and exit. Be sure to consider these indirect effects of substitutes and complements. Factors to consider when assessing substitutes and complements include:

- *Availability of close substitutes and/or complements.* Consider product performance characteristics when identifying substitutes and complements.

- *Price-value characteristics of substitutes/complements.* Seemingly close substitutes may pose little threat if they are priced too high. Similarly, complements may fail to boost demand if priced too high. Many new products may be weak substitutes or complements, but may gain strength as manufacturers move down the learning curve and prices fall.
- *Price elasticity of industry demand.* This is a useful measure of the pressure substitutes place on an industry. When the industry-level price elasticity is large, rising industry prices tend to drive consumers to purchase substitutes' products.[1]

Supplier Power and Buyer Power

An assessment of supplier power takes the point of view of a downstream industry and examines the ability of that industry's upstream input suppliers to negotiate prices that extract industry profits. Sometimes, the upstream market is competitive. We say that suppliers in a competitive upstream market have "indirect power" because they can sell their services to the highest bidder. The price they charge depends on supply and demand in the upstream market. For example, fuel suppliers have indirect power relative to the airline industry. When supply and demand conditions cause fuel prices to increase, airline profits suffer.

Recall from Chapters 3 and 4 that upstream suppliers can also erode industry profits if (a) they are concentrated or (b) their customers are locked into relationships with them because of relationship-specific investments. In these situations, we say that suppliers have "direct power." An input supplier with direct power can raise prices when its target market is faring well, thereby extracting a share of its customers' profits. The converse also applies—a powerful supplier may lower prices when its target market is doing poorly. Consistent application of both pricing strategies will permit the supplier to extract much of its target market's profits without destroying that market. Historically, unions have used this strategy to increase workers' wages. Similarly, an input supplier with a relationship-specific investment in an industry can squeeze profits from a successful industry and ease the burden on an industry in trouble.

Buyer power is analogous to supplier power. It refers to the ability of individual customers to negotiate purchase prices that extract profits from sellers. Buyers have indirect power in competitive markets, and the price they pay will depend on the forces of supply and demand. The willingness of consumers to shop for the best price could instead be considered a source of internal rivalry, not indirect buyer power. When buyers are concentrated, or suppliers have made relationship-specific investments, buyers may wield direct power.

The following factors must be considered when assessing supplier power and buyer power. We state each in terms of supplier power relative to the downstream industry that it sells to. An analogous factor must be assessed when considering buyer power:

- *Competitiveness of the input market.* If inputs are purchased in competitive markets, then input prices will be determined by the forces of supply and demand.
- *The relative concentration of the industry in question, its upstream, and its downstream industries.* Firms in the more concentrated industry may have greater bargaining power and may be able to achieve a cooperative price that puts firms in the less concentrated industry (due to internal rivalry in that industry) at a disadvantage.

- *Purchase volume of downstream firms.* Suppliers may give better service and lower prices to larger purchasers.
- *Availability of substitute inputs.* The availability of substitutes limits the price that suppliers can charge.
- *Relationship-specific investments by the industry and its suppliers.* The threat of holdup may determine the allocation of rents between the industry and its suppliers.
- *Threat of forward integration by suppliers.* If credible, firms in an industry may be forced to accept the high supply price or risk direct competition from suppliers.
- *Ability of suppliers to price discriminate.* If suppliers can price discriminate, they can raise the prices they charge more profitable firms.

Strategies for Coping with the Five Forces

A five-forces analysis identifies the threats to the profits of all firms in an industry. Firms may pursue several strategies to cope with these threats. First, firms may position themselves to outperform their rivals by developing a cost or differentiation advantage that somewhat insulates them from the five forces. Chapter 11 discusses positioning strategies in detail. Second, firms may identify an industry segment in which the five forces are less severe. For example, in the 1970s, Crown, Cork and Seal served manufacturers of "hard-to-hold" liquids, a niche market that was far less competitive than the metal-can segments served by industry leaders American Can and Continental Can. Through this and similar strategies, Crown earned significantly higher rates of return. Third, a firm may try to change the five forces, although this is difficult to do. Firms may try to reduce internal rivalry by establishing facilitating practices or creating switching costs. Firms may reduce the threat of entry by pursuing entry-deterring strategies. Firms may try to reduce buyer or supplier power by tapered integration. In the extended examples presented later in this chapter, we will see how firms in a variety of industries have attempted to cope, with varying degrees of success, with the five forces.

◆ ◆ ◆ ◆ ◆ Coopetition and the Value Net

Porter's five forces is an enduring framework that remains widely used for industry analysis. In their book *Coopetition*, Adam Brandenberger and Barry Nalebuff identify an important weakness of the framework. From the viewpoint of any one firm, Porter tends to view all other firms, be they competitors, suppliers, or buyers, as threats to profitability. Brandenberger and Nalebuff point out that interactions among firms can sometimes enhance profits and emphasize the many positive interactions that Porter generally ignores. Examples of positive interactions include the following.

- Efforts by competitors to set technology standards that facilitate industry growth, such as when consumer electronics firms cooperated to establish a single format for high-definition television, or when Sony and Toshiba formed an alliance to establish a compatible standard for digital video discs.
- Efforts by competitors to promote favorable regulations or legislation, such as when domestic U.S. automakers worked together to get the U.S. Department of

Energy to endorse a proposal to develop fuel cells rather than tighten gasoline fuel economy standards.

- Cooperation among firms and their suppliers to improve product quality to boost demand, such as when Nintendo priced its Nintendo Entertainment System (NES) video games so that software developers earned a higher profit per cartridge than did Nintendo. This encouraged developers to invest heavily in developing high-quality games, which in turn boosted overall demand for the NES system.
- Cooperation among firms and their suppliers to improve productive efficiency, such as when Edward Hospital in Naperville, Illinois worked closely with its cardiovascular surgeons to develop a handheld computer system to allow the two to rapidly exchange clinical information.

In support of these ideas, Brandenberger and Nalebuff introduce the concept of the *Value Net* as a counterpart to Porter's five forces. The Value Net, which consists of suppliers, customers, competitors, and complementors (firms producing complementary goods and services), is similar to the five forces. Brandenberger and Nalebuff's admonition to perform a comprehensive analysis of the Value Net to prevent blind spots is also reminiscent of Porter. But whereas a five-forces analysis mainly assesses threats to profits, a Value Net analysis assesses opportunities. This important change does not nullify the five-forces approach so much as complement it. A complete five-forces analysis should, therefore, consider both the threats and opportunities each force poses. To illustrate this point, contrast a traditional five-forces industry analysis of the DVD hardware market in 1997–1998 (the first two years of introduction) with an analysis that accounts for the Value Net. Here are some conclusions that might have emerged from a traditional analysis.

- *Internal rivalry.* The main source of differentiation was brand—the players were otherwise fairly homogeneous. Unless firms could establish loyalty based on brand, intense price competition could result.
- *Entry.* There were modest technological and physical capital requirements limiting entry. A dozen or more consumer electronics firms had the know-how and access to channels to successfully enter the market.
- *Substitutes and complements.* Satellite TV posed a clear threat as a substitute. Digital video streaming over the Internet was another potential threat.
- *Supplier power and buyer power.* Powerful studios such as Disney and producers such as George Lucas and Stephen Spielberg could have demanded substantial payments to supply their movies in DVD format, especially given the threat from the alternative DIVX format that Circuit City was poised to launch. Powerful distributors such as Best Buy and Circuit City might demand high margins in exchange for clearing the shelf space needed to promote the new format.

Given this five-forces analysis, DVD hardware makers would have had every reason to be pessimistic about the format.

But this analysis fails to account for the Value Net and, as a result, fails to identify opportunities for industry growth and profitability. The participants in the Value Net—manufacturers, studios, and retailers—recognized that their fortunes were intertwined. If they could generate sufficient interest in DVD, then demand would grow fast enough to make everyone profitable while thwarting DIVX.

Manufacturers had many options for boosting demand. The most obvious would be to set low prices. This would encourage hardware sales that would, in turn, encourage studios to release more movies in DVD, thereby further boosting demand for hardware. Manufacturers could also heavily promote DVD so as to boost product awareness while blunting the threat from DIVX. In the first year, hardware makers did none of this. They kept prices high so as to profit from early adopters (players sold for $500 to $1,000) rather than to stimulate mass-market acceptance. They ran few advertisements or promotions. As a result, manufacturers sold only about 300,000 players in the United States and a comparable number in Europe in Japan, well within expectations, but hardly enough to guarantee the success of the format. In the second year, manufacturers lowered prices on some players to less than $300 and spent heavily on advertising and promotions. Other participants in the Value Net also pitched in. MGM released special editions of classic films such as *Gone With the Wind*. Warner slashed prices on dozens of popular titles. Columbia and Universal studios accelerated the release of popular action titles such as *Godzilla*. Meanwhile, electronics retailers, especially Best Buy, heavily promoted DVD hardware and software, including a much publicized half-price software sale for Internet purchases.

DVD succeeded when all the players in the Value Net did their part to promote the overall success of the product. Some members of the Value Net, such as Warner and Best Buy, took a temporary loss (by setting prices below costs) so as to contribute to the future success of the format. The DVD market finally took off when firms worked to increase the size of the DVD "pie," rather than fight for their share of a fixed pie. Through their complementary actions, the participants in the DVD Value Net secured its future and reaped the benefits.

◆ ◆ ◆ ◆ ◆ Applying the Five Forces: Some Industry Analyses

The best way to illustrate the five-forces framework is by example. In this section we perform three detailed industry analyses. For each industry, we present background information, proceed with market definition, and identify the most salient economic principles from each of the five forces.

Chicago Hospital Markets Then and Now

It has been a turbulent two decades for American hospitals. For 30 years up until the mid-1980s, hospitals thrived. Yet between 1985 and 2000, an average of 75 hospitals a year went bankrupt (about 1.5 percent of the nation's total each year), and many others struggled to stay solvent. In the last few years, most hospitals have enjoyed a measure of prosperity, with returns on sales in 2005 nearing historically high levels. Even so, storm clouds are on the horizon. This dynamic has been repeated throughout the nation, including the Chicago market, which is the focus of this analysis. An industry analysis conducted at various points in time demonstrates the problems that hospitals have grown accustomed to and identifies profit opportunities that some hospitals have exploited.

Market Definition

Market definition requires identifying both product and geographic markets. We consider the product market to be acute medical services such as maternity care, surgery, and complex diagnostic services. While other providers besides hospitals offer many

of these services—outpatient surgery centers are a good example—we will treat their offerings as substitutes. This decision is not essential to our conclusions and illustrates the flexibility of the five-forces framework. (We would be remiss, of course, if we did not consider outpatient surgery at all.)

The geographic scope of hospital competition is subject to considerable debate; federal courts are grappling with this issue as they review the antitrust implications of recent hospital mergers. Research shows that patients strongly prefer to visit nearby hospitals. The geographic market in which Chicago hospitals compete is certainly no larger than the metropolitan area, and in one recently decided antitrust case, a federal judge ruled that there are distinct submarkets (e.g., suburban regions) that have their own unique competitive dynamics. We will assess internal rivalry in the Chicago metropolitan area and, when appropriate, discuss the importance of submarkets.

Internal Rivalry

There are about 70 community hospitals in the Chicago market.[1] Virtually all of them were independent in 1980, when the Herfindahl index for the entire metropolitan area was below 0.05. Today, many hospitals belong to systems. There is no dominant system, however, and if we treat each system as a single entity to compute market shares, the regional Herfindahl index is roughly 0.20. If we instead examine geographic submarkets, such as the North Shore suburbs, the Herfindahl increases to 0.25 or higher.

The relatively large number of hospitals is just one factor that could intensify internal rivalry. Another factor to consider is the considerable variation in production costs, based on differences in productive efficiency and the fact that Chicago has several large teaching hospitals that must bear the cost of training young, inefficient doctors. There is also excess capacity, though not so much as in years past; occupancy rates at many hospitals remain below 70 percent, though some suburban hospitals operate at 85 percent or higher. Finally, demand for admissions had been stagnant or declining for a long time. This trend has now reversed itself, thanks to aging baby boomers and their many ailments.

Despite these factors, internal rivalry in 1980 was benign. The reason had to do mainly with how patients shopped for hospital services. When choosing a hospital, patients deferred to their physicians, who tended to concentrate their practices at one or two hospitals. This created a kind of seller loyalty that greatly lessened the importance of prices. Patients also enjoyed staying close to home, creating additional product differentiation, especially in suburban markets. (Downtown Chicago was home to over a dozen hospitals within a few miles of each other.) Another important factor was that most patients had insurance that paid their bills no matter which hospital they chose. For patients with the most generous insurance, price was a complete nonissue. The combination of price-insensitive patients and physician-dominated admission decisions limited the incentives of hospitals to use price as a strategic weapon. As a result, internal rivalry in 1980 was low, and most hospitals in Chicago enjoyed healthy price–cost margins from their privately insured patients.

During the 1980s, managed-care organizations (MCOs) entered the Chicago market and began selectively contracting with those hospitals that offered the best value. MCOs offered enrollees financial inducements (in the form of lower copayments) to encourage them to select the contracting hospitals. By steering patients to the "preferred" hospitals, insurers effectively increased price elasticities of demand. Three additional factors intensified internal rivalry. First, MCOs treated all hospitals as nearly identical, seemingly ignoring patient loyalties. Second, price negotiations between insurers and hospitals were secret, encouraging hospitals to lower prices to

win contracts. Finally, sales were infrequent (i.e., a contract lasts one to three years) and lumpy (i.e., one insurer may have represented over 5 percent of a hospital's business). This intensified the pressure on hospitals to lower prices to win each individual contract without considering the impact on future price rivalry. It also limited opportunities for hospitals to develop facilitating practices.

Price rivalry intensified. Hospitals lowered prices by 20 percent or more to stay competitive in the managed-care marketplace. Profit margins declined through the early 1990s, and many Chicago-area hospitals closed. During the late 1990s, hospitals fought back. Some, like Northwestern Memorial Hospital, established a strong brand identity. Others diversified into related products, such as skilled nursing services (for which insurers provided generous reimbursements). Some sought to differentiate their services by developing "centers of excellence" in clinical areas such as cancer care and heart surgery. These strategies had varying degrees of success. Diversification helped boost revenues but did nothing to soften competition in the inpatient market. Branding helped those hospitals that already enjoyed strong reputations, but it did little for the average community hospital. And patients saw most centers of excellence for what they were—existing facilities were renamed without demonstrably improving quality.

Two recent trends have done much more to soften competition. First, patients have spoken out against MCOs with "narrow" networks. They want free choice of hospital and distrust MCOs that claim that their network hospitals offer the greatest value. The result is that MCOs must include nearly all hospitals in their networks. Hospitals know this and hold out for higher prices. Second, there has been considerable consolidation in regional submarkets, including the city of Chicago and the important North Shore suburbs. Mergers among hospitals in these submarkets have further strengthened the hands of hospitals in their contract negotiations with MCOs. Several merging hospitals raised their prices by 20 percent or more.

Entry

No new hospitals have been built in Chicago in over two decades. State regulation provides an important barrier to entry. Potential entrants in Illinois must demonstrate that the projected utilization at the new hospital could not be met by existing hospitals. (This would be like requiring Samsung's cellular phone division to show that Motorola could not meet demand before allowing Samsung to enter.) The entry barrier has been nearly absolute, and instead the region has witnessed major expansion and remodeling of existing hospitals.

Under political pressure, state regulators have relaxed their intrepretations of rules in recent years and have begun approving a few applications to build new hospitals. Even if this barrier breaks down and hospitals continue to prosper, incumbents might be protected by additional entry barriers. Hospitals are capital intensive. A new modest-sized 150-bed hospital can cost $200 million to build. A *de novo* entrant (i.e., an entrant with no current hospital in Chicago) would also have to establish a brand identity, since patients may be reluctant to trust their health to an unknown entity. By the same token, a *de novo* entrant would also need access to distribution "channels"—the medical staff that admits patients. These factors may help explain why nearly all proposals to build new hospitals in Chicago have been floated by existing hospitals.

The barriers to entry are large but not overwhelming. The Chicago area continues to grow, with suburbs stretching 50 miles from downtown. "Outsider" hospital corporations such as Tenet have considerable experience entering new markets and recruiting physicians and could view Chicago's "exurbs" as fertile ground for growth. Technological change may further lower entry barriers. Innovations in medicine

might make it possible to open smaller, cost-competitive inpatient facilities that focus on specific treatments, such as heart surgery. This will reduce the capital and number of physicians required for successful entry. If the regulatory barrier breaks down and Chicago hospitals remain profitable, *de novo* entry is sure to follow.

Substitutes and Complements

In 1980, a patient who needed surgery or a complex diagnostic procedure went to the hospital. Outpatient facilities and physicians in their private offices provided routine therapy and diagnostic services but were poor substitutes for inpatient care. Over the past 25 years, there have been dramatic improvements in surgical technique, anesthetics, and antibiotics, so that many types of surgeries can be safely performed outside the hospital. Changes in insurance payments have spurred a shift toward outpatient diagnostic imaging facilities. Home health care has also boomed, allowing providers to monitor the recoveries of surgical patients and care for chronically ill patients in the patients' homes.

Hospitals have turned out to be the dominant sellers of outpatient services in many markets, including Chicago. They already possessed the technology, personnel, and brand appeal to offer outpatient care and were often first to do so. Some of the bigger Chicago hospital systems, including Evanston Northwestern and Advocate, have opened their own technologically advanced outpatient treatment centers. Economies of scope have enabled these systems to thrive even as their core inpatient business shrinks.

New medical technologies will continue to emerge. Some, such as laparoscopic surgery, will facilitate even more outpatient treatment. But some technologies, such as advances in respiratory medicines that sustain the lives of low-birthweight babies, complement and boost the demand for inpatient care. An important generation of new technologies will emerge from genetic research, and it is difficult to predict whether these will be substitutes or complements to inpatient care.

Supplier Power

The main suppliers to hospitals include labor (nurses, technicians, etc.), medical equipment companies, and drug houses. Hospital-based physicians, such as radiologists, anesthesiologists, and pathologists (RAP physicians), are also suppliers. (We consider admitting physicians to be buyers because they often determine which hospitals patients will purchase services from.) All these suppliers have indirect power. Supply and demand forces in the market for nurses have been especially tight in recent years, forcing up nurse wages. The prices of drugs and other medical supplies have also risen precipitously.

Hospitals and their suppliers make few relationship-specific investments. Personnel learn to work in teams but seem to adjust rapidly to new settings. Hospitals can usually replace them at the market wage, and some hospitals routinely use "nursing pools" to handle short-term needs. A national recruiting market usually makes RAP physicians easy to replace, although hospital bylaws and staffing policies can pose obstacles. Medical suppliers without monopoly power cannot credibly threaten to hold up hospitals to obtain higher prices. Suppliers whose innovations are protected by patents can command very high prices if their products make the difference between life and death.

The magnitude of supplier power has not changed much over time. A much-discussed national physician's union movement could greatly increase the power of RAP physicians.

Buyer Power

Buyers include patients, physicians, and insurers who decide which hospitals will get business and how they will be paid. Patients and their physicians in 1980 did little to discipline high price hospitals. Insurers in 1980 were also passive, usually reimbursing hospitals for whatever they charged rather than shopping around for the best value. State regulations actually prevented such price shopping by insurers, though large state Blue Cross plans did obtain discounts because of their size. The two major government insurers, Medicaid and Medicare, also paid generously. Buyer power in 1980 was low.

Selective contracting has enabled insurers to wield buyer power. At the same time, government payers have used their regulatory powers to command discounts. Medicare, which insures the elderly and disabled, pays a fixed price per hospital stay—adjusted for the diagnosis—forcing hospitals to swallow excessive treatment costs. Owing to federal budget cuts, Medicare payments are declining. Medicaid, the joint federal/state program that covers treatments for the medically indigent, may be the toughest payer of all. Medicaid in Illinois pays hospitals 25 to 50 percent less than the amount paid by other insurers for comparable services. Medicaid knows each hospital's cost position and can use this information to minimize what it offers to pay.

Physicians may also wield significant power, especially those charismatic and highly skilled physicians who can attract patients regardless of where they practice. The University of Chicago Hospital recently lured a pair of lung transplant specialists from Loyola Medical Center, offering them high pay, state of the art facilities, and top-notch staffing. Loyola is upping the ante in its search to replace them. This is only the latest salvo in a wide-ranging and long-run battle to tie up the physician market. During the 1990s, hospitals paid as much as $500,000 to purchase the practices of "run of the mill" physician practices, anticipating an increase in referrals. The strategy has largely failed, however, with many hospitals reporting massive losses. The careful student should be able to use the lessons from Chapters 3 and 4 to diagnose the risks of such an integration strategy.

Table 10.1 summarizes the five-forces analysis of the Chicago hospital market in 1980, 2000, and today. Virtually every factor that affects industry profitability changed for the worse between 1980 and 2000, but many have since softened. As hospitals look to the future, they should be concerned about a few possible trends:

- The Federal Trade Commission recently won an antitrust case that forced Evanston Hospital to sell nearby Highland Park hospital. (The decision has been appealed to an appellate court.) That merger had enabled the two nearby competitors to sharply raise prices.

TABLE 10.1
FIVE-FORCES ANALYSIS OF THE CHICAGO HOSPITAL MARKET

Force	*Threat to Profits*		
	1980	*2000*	*Today*
Internal rivalry	Low	Medium	Medium but declining
Entry	Low	Low	Low but growing
Substitutes and complements	Medium	High	High
Supplier power	Medium	Medium	Medium
Buyer power	Low	Medium	Medium but declining

- Concerned about rising health insurance premiums, employers are asking employees to bear more of their health care costs. This could make patients more price sensitive. At the same time, some employers are reconsidering the decision to opt for wide, but costly, MCO networks.
- If regulatory barriers fall, entry by specialty hospitals in wealthier communities could skim off some of the areas' most profitable patients.
- Employers, payers, regulators, and patients are demanding and getting more information about hospital quality. This could allow the best hospitals to command premium prices but could also increase the willingness of patients and their doctors to switch from hospitals whose quality is merely satisfactory.

Commercial Airframe Manufacturing

The firms that build airplanes are called airframe manufacturers. Airbus Industries and the Boeing Company have been in an effective duopoly since Lockheed pulled out in 1986 and Boeing acquired McDonnell Douglas in 1997. Despite limited competition, Airbus and Boeing still face threats from each other, as well as from some key fringe players.

Market Definition

We confine our analysis to companies that make airplanes for commercial aviation. Business jets, such as Citations and Gulfstreams, are not considered relevant since their prices have no bearing on the market for big jet airplanes. Two other companies, Montreal-based Bombardier and Brazil-based Embraer manufacture small-capacity (50 seats) and medium-capacity (50 to 100 seats) turboprop and jet aircraft for commercial use. Taken together, these fringe players have a combined market share of 25 percent by aircraft and a much lower share by revenue. If we restrict attention to planes with more than 100 seats, then Boeing and Airbus have the entire market to themselves. Thus, we will largely pay attention to the competitive battle between Boeing and Airbus. Boeing and Airbus compete globally; there are no meaningful geographic submarkets in which other companies compete.

Internal Rivalry

Boeing was established in 1917 and built military aircraft for the better part of 40 years. It delivered its first commercial aircraft in 1958. Airbus was established in 1967 by a consortium representing the governments of Great Britain, France, and Germany. Airbus did not deliver its first plane until 1974. In part because it is an older company, Boeing has produced many more airplanes than has Airbus—15,000 compared to 4,000. Airplanes are built to last—25 years or longer—and most of the planes that Boeing has built are still flying. Boeing's market dominance seems to be waning, however. In the past few years, both Boeing and Airbus have delivered about 300 new planes annually, with Airbus slightly in the lead most years.

It has always been Airbus's stated intention to have a 50 percent market share. In pursuit of this objective, Airbus has priced aggressively and expanded productive capacity. European governments heavily subsidized Airbus, especially during its early years. These subsidies enabled Airbus to undercut Boeing's prices and build market share. For example, in 2001 Britain gave over £530 million toward the development of Airbus's latest plane, the A380. Airbus also continues to receive low-interest loans from its government sponsors to subsidize research and development. Boeing receives tax breaks for its R&D efforts, but these are much smaller than the

subsidies enjoyed by Airbus. Boeing has been able to remain price competitive, in part, because it enjoys scope economies from its military aircraft division. (Airbus often accuses the U.S. government of indirectly subsidizing Boeing by paying well in excess of costs for military planes.)

Several factors have tempered Airbus's incentives to reduce prices. Demand for air travel grew steadily throughout the 1990s. Although air travel declined during the 2001 recession (and particularly after the September 11 attacks), it quickly recovered and now exceeds pre-2001 levels. New carriers, such as Emirates Air, have placed large orders for jumbo jets while established carriers are replacing older planes. Lucrative transcontinental carriers are finding that passengers have strong preferences for new planes with amenities such as personal DVD screens. The upshot is that Airbus can continue to grow rapidly without cutting prices. But nothing is guaranteed. Airline profits tend to be pro-cyclical; airlines can suffer multibillion-dollar losses during economic downturns. Many airlines cancel orders when economic conditions deteriorate; in the wake of September 11, orders fell by 10 to 20 percent. This in turn severely damaged the profits of the airframe manufacturers.

Another factor affecting internal rivalry is the high fixed costs associated with airframe manufacturing. During good times, Airbus and Boeing run at capacity, maintaining backlogs that can take years to complete. This helps reduce rivalry to some extent, as neither firm can rapidly expand market share at the other's expense. However, backlogs decline or even disappear during downturns. Neither Boeing nor Airbus has seemed willing to shed productive capacity (through large-scale layoffs and plant closings) in the face of falling backlogs. The result is that marginal costs decline dramatically during downturns. Not surprisingly, Boeing and Airbus are both willing to renegotiate deals at these times. The fact that a single deal with an American or United Airlines can account for nearly 15 percent of Boeing or Airbus's business only intensifies the willingness to shave prices in downtimes.

Historically, Boeing and Airbus enjoyed little product differentiation. Flag carriers British Airways and Air France preferred Airbus, for obvious reasons. Otherwise, the airlines feel that the two manufacturers offer virtually identical products. For example, the Boeing 737 and Airbus A320 have similar seating capacities, performance, and flying range. Even so, airlines have developed loyalties. After witnessing the astonishing success of Southwest, which flies only Boeing 737s, the airlines recognized that they could economize on parts and maintenance if they reduced the variety of planes they flew. Boeing and Airbus have exploited this trend by making parts interchangeable across different models. The result is that some carriers buy exclusively from Airbus while others rely on Boeing. This may limit incentives to reduce prices on airplanes in the future, for it will be increasingly difficult for Airbus and Boeing to steal each other's customers.

There is even some differentiation in the products themselves. Airbus has developed the A380, a double-decker plane capable of seating over 550 passengers (but likely to be configured for fewer passengers with more amenities.) Sales thus far are sluggish, in part because airports need to reconfigure arrival gates to accommodate the jumbo planes. Boeing abandoned its plans to build the Sonic Cruiser, capable of flying 20 percent faster than the A380. It is instead focusing its development efforts on the 350-passenger 787 dreamliner, which is said to be more fuel efficient than other planes.

Barriers to Entry

High development costs and the experience-based advantages of the incumbents combine to make entry into the commercial airframe manufacturing industry extremely

difficult. It cost Airbus an estimated $13 billion to develop the A380. Airbus hopes to make about $50 million in profit per aircraft. With discounting, Airbus will need to sell over 350 planes to break even. A start-up manufacturer would likely face higher development costs owing to experience effects. It could also expect smaller margins, both because airlines are reluctant to purchase from start-ups (Airbus discovered this 20 years ago) and because entry would likely engender a price response by Airbus and Boeing. Entry by a newcomer in the jumbo segment would therefore be very risky.

Incumbents are also protected by the learning curve in production. Stanford University economist Lanier Benkard used detailed data on the production of the Lockheed L1011 to estimate the learning curve for producing that plane.[2] He found that with a doubling of experience, the number of personnel required to produce a plane would fall by 35 to 40 percent. However, this effect is mitigated by "forgetting" (i.e., past experience is less valuable as time goes by). In fact, the economic downturn of the early 1970s, which caused a decline in demand for the L1011, helps explain why Lockheed failed to achieve the anticipated learning benefits. Even so, learning effects are usually substantial and help further insulate incumbents from competition by newcomers.

We have already noted that airlines prefer to purchase from the same manufacturer. This poses yet another barrier to entry. One positive note for entrants—access to raw materials and labor is not a significant barrier.

Substitutes and Complements

From the perspective of the airlines, the only substitute for an airplane made by Boeing or Airbus would be an airplane made by someone else. Historically, Boeing and Airbus made the only planes that met airlines' needs for medium- and large-capacity planes capable of flying thousands of miles. But this is no longer the case.

Passengers are weary of hub-and-spoke travel and the associated delays and lost baggage. Even so, it has not always been economically viable for airlines to replace medium- to long-haul hub-and-spoke flights with nonstop point-to-point travel. Simply put, demand for these routes has been too small to fill the smaller Boeing and Airbus jets. Around 1990, Canadian manufacturer Bombardier and Brazilian manufacturer Embraer filled this important void. The Bombardier CRJ series and Embraer ERJ series "regional jets" seat 50 to 90 passengers and are capable of flying over 2,000 miles. These planes immediately increased the number of economically viable point-to-point routes. They also enabled airlines to increase the frequency of flights on existing viable routes, for example, flying four round trips daily from Chicago to Syracuse on a small jet, instead of just twice daily on a larger plane. (This proved to be especially appealing in the lucrative business segment.)

The market response was overwhelming, with more than 2,000 regional jets sold to date. There is no doubt that much of this came at the expense of Boeing 737s and Airbus 320s, the traditional workhorses of the major carriers. As demand for air travel rises, some carriers are finding it profitable to switch back to 737s and 320s; the cost per passenger mile is lower on a full 120-seat plane than on a full 50-seater. In 2005, Bombardier put a temporary halt on construction of CRJ regional jets.

Substitution also comes indirectly from other forms of transportation. High-speed rail may be a particularly important substitute, for it matches or exceeds the airline's "product performance characteristic" of high-speed transport. High-speed rail is currently operational in Japan. The Maglev (a high-speed train) is a levitating train able to reach speeds of up to 500 kilometers per hour. Although this may affect regional aircraft in certain routes, it is unlikely to affect commercial aircraft owing to

the high development costs, the long time horizon for development, and their physical constraints.

Supplier Power

Boeing and Airbus can obtain raw materials and components from competitive supplier markets. However, most parts suppliers do more business selling replacement parts to airlines than selling original equipment to Boeing and Airbus, so the airframe makers do not have an iron grip on their suppliers. Boeing has started a program that may further enhance its leverage with suppliers. Its Global Airlines Inventory Network (GAIN) enables airlines to directly order spare parts from suppliers. Suppliers like it too, even though it further ties them to Boeing, because they can more accurately plan production and inventories, and they are thus willing to tie themselves even more closely to Boeing. There are a few suppliers with whom Boeing and Airbus do not hold the upper hand. General Electric competes primarily with Pratt & Whitney and Rolls Royce in the manufacturing of jet engines. When Boeing and Airbus do well, these three firms can negotiate more favorable supplier contracts for themselves.

Unionized labor has substantial supplier power. Currently, nearly half of Boeing's workforce is unionized. The unions have cooperated in developing work rules to encourage and protect specific investments by workers. But unions have threatened to strike (and actually have gone on strike) over wages and can extract a substantial fraction of Boeing profits.

It is unclear what percentage of Airbus's workforce is unionized. European labor regulations are stricter than regulations in the United States, providing greater protection of unionized employees. However, about 40 percent of work on Airbus planes is done by subcontractors, and about 40 percent of this work is on short-term agreements that can be canceled within a year. This fact serves to mitigate the effects of regulations.

Buyer Power

There are two categories of buyers, each of which has limited power. Many airlines own their own fleets, but many also lease aircraft from aircraft-leasing companies. These companies purchase airframes directly from the manufacturer and then lease the planes to the airlines, keeping the assets off the airlines' books. The major airlines and the largest leasing companies often place orders for dozens of planes at a time. One company's order can make up approximately 15 percent of all of Boeing's or Airbus's commercial airframe orders in a single year.

The fact that there are few substitutes works to the advantage of the manufacturers, but only to the point where it begins to compete with its rival manufacturer to maintain a minimum level of backlog orders. In addition, in times of economic downturns, buyers have the ability to cancel deliveries of aircraft, directly affecting the profitability of manufacturers.

Table 10.2 summarizes the five forces of the commercial aviation industry. As long as market conditions are favorable, Airbus and Boeing will prosper, threatened only by Bombardier and Embraer, and then only in a segment of their market.

Professional Sports

Our last example of industry analysis explores the popular world of professional sports. We focus on the four major U.S. sports leagues—Major League Baseball

TABLE 10.2
FIVE-FORCES ANALYSIS OF THE CHICAGO HOSPITAL MARKET

Force	*Threat to Profits*
Internal rivalry	Low to Medium
Entry	Low
Substitutes/complements	Medium
Supplier power	Medium
Buyer power	Medium

(MLB), the National Basketball Association (NBA), the National Football League (NFL), and the National Hockey League (NHL). Most of this analysis would apply equally well to sports leagues in other nations, such as European club football (i.e., soccer.)

Market Definition

It is difficult to define the markets in which professional sports teams compete. Each league competes for labor in a single national (or international) labor market, yet individual teams may be monopolists in the output of say, "professional football entertainment" in their home cities. We will bear in mind these distinctions as we address how each of the five forces affects firm and industry profits in the major professional sports.

Internal Rivalry

Competition on the playing field does not equate to competition in the business world. Exciting athletic competition that will attract fans requires considerable collusion among the teams. Teams must agree on rules and schedules; they employ the same pool of referees and share national broadcast revenues. A sports league also requires some degree of "competitive balance" to attract fan interest. This has given rise to rules and other arrangements (most notably "rookie drafts" that are discussed in more detail below) that are jointly designed and agreed-upon by all teams in the league. Teams *do not* collude on ticket prices, but they do not have to. When it comes to competition in output markets, most sports teams have substantial market power.

Most sports teams generate the lion's share of revenues from ticket sales. (The exception is the NFL, whose 32 teams split over $2 billion in annual payments from a consortium of television networks.) In a broad sense, teams compete for local entertainment dollars. For example, the Chicago Bulls professional basketball team vies for customers who might instead consider attending local blues, jazz and classical music concerts, theater, movies, restaurants, the DePaul Blue Demons college basketball games, and the Chicago Blackhawks professional hockey games. But the Bulls are monopolists in the market for Chicago professional basketball, and the elasticity of substitution between Bulls tickets and other entertainment events is modest.[3] Even teams that face direct competition in their local markets—for example, the Chicago White Sox and Chicago Cubs in major league baseball—have fiercely loyal fans who would hardly think of buying tickets to their cross-town rival's games just to save a few dollars. When it comes to selling tickets to see a major sport, nearly every team in the National Football League (NFL), National Basketball Association (NBA), Major League Baseball (MLB), and National Hockey League (NHL) has considerable market power.

When sports teams do compete against each other in the traditional business sense, the "playing field" is the market for labor. The market to employ athletes hardly fits the "textbook" model of competition. Athletes in all four major sports are unionized, so the market for their labor is subject to labor laws. These laws are particularly important when it comes to employment of new ballplayers (i.e., rookies). Labor laws permit managers and unionized workers in any U.S. industry, including professional sports, to set conditions for employment of new workers through their collective bargaining agreements. While this sounds unfair to rookies, this rule serves to facilitate competitive balance on the playing field by enabling weaker teams to hire the best rookies. Courts have routinely blocked attempts by rookies to undo these rules.

All sports fans know how the rookie market works. Each major sports league conducts a "rookie draft" at the conclusion of its season. Only players meeting certain criteria based on age and/or educational attainment are eligible to be drafted. Teams pick in inverse order of their past performance, so that the worst teams get to choose the best players, and all teams have one year exclusive rights to contract with their chosen players.[4] Depending on the league, rookies are afforded some latitude in negotiating their initial contract terms, including length and salary. Rookies have few alternatives if they do not wish to sign with the team that drafted them; mainly, they can refuse to play for one year (and lose one year's compensation), or they can sign with another league. Because these alternatives are generally very unattractive, sports teams have tremendous bargaining power over rookies. Some baseball teams, such as the Pittsburgh Pirates and Tampa Bay Devil Rays, have managed to remain reasonably prosperous, though they have not been especially successful on the playing field, by relying on low-priced young players. By contrast, some basketball teams, such as the Indiana Pacers, have shied away from drafting very young rookies, feeling that by the time these athletes develop into stars, their contracts will have expired and they will be free agents, able to sell themselves to the highest bidders.

Until about 25 years ago, all the major sports leagues had rules limiting the mobility of veterans. The NFL had the "Rozelle Rule," named for its famous commissioner Pete Rozelle, which required any team that signed a player from another team to pay compensation, often in the form of a future draft pick. The NBA and NHL had similar rules. By the early 1980s, these rules had been eliminated as part of collective bargaining agreements.

Baseball's route toward a free labor market was more circuitous. For years, professional baseball contracts contained a provision known as the reserve clause. If a player refused to sign the contract offered by his team, the reserve clause gave the team the right to automatically renew his expiring contract for the next year. The traditional interpretation of the reserve clause was that if a player continued to remain unsigned, a team could renew the old contract year after year in perpetuity. As a result, baseball players had virtually no bargaining power vis-à-vis their teams. The reserve clause explains why the immortal Babe Ruth never earned more than $100,000 per season—roughly $1 million today in inflation-adjusted dollars—far less than major league stars earn today.

In 1970, St. Louis Cardinals outfielder Curt Flood (who balked at being traded to the Philadelphia Phillies) filed an antitrust challenge to the reserve clause. In a confusing 1972 ruling, the Supreme Court cited Justice Learned Hand's old ruling that baseball was the "national pastime" and was therefore exempt from antitrust laws. For a time it appeared as if the reserve clause had dodged a bullet and would remain intact.

However, in 1975, two major league baseball pitchers, Andy Messersmith and Dave McNally, challenged the interpretation of the reserve clause, contending that the right to re-sign a player who refuses to sign a contract extended, not indefinitely as baseball owners had always contended, but for just one year. Arbitrator Peter Seitz agreed with the Messersmith–McNally interpretation, ruling that a ball club could renew an unsigned player's contract for just one year, after which the player would become a "free agent" who would be able to sell his services to the highest bidder. Seitz, who had been retained by Major League Baseball, was promptly fired, and baseball owners went to court to challenge his decision. In February 1976, a federal judge upheld Seitz's ruling, ushering in baseball's free agency era.

For many reasons, competition in the input market for free agents can be intense. There are numerous competitors—in principle every team in the league is a potential buyer. There is little differentiation—most players can be equally productive on any team and have little hometown loyalty. To make matters worse, whereas some owners run their teams to make money, others are in it to win a championship and are willing to lose some money to do it. There is nothing wrong with this—owning a sports team is a fine billionaire's hobby—but it makes it difficult for other owners to hold the line on payroll.

A few factors soften wage competition, however. Very few athletes can make a major impact on a team's chances of winning a championship; as a result, salaries for midlevel athletes fall well short of the salaries of superstars. Moreover, the number of serious competitors for a star athlete is limited. When superstar pitcher Pedro Martinez became a free agent after leading the Boston Red Sox to the 2004 World Series championship, only two or three teams entered the bidding war. (He signed with the New York Mets for $53 million over four years.) Martinez had the advantage that every team could benefit from another pitcher, yet he still aroused little interest. The situation is worse for position players. Slugging first baseman and World Series hero Paul Konerko of the Chicago White Sox was of interest only to those teams that did not already have a solid player at that position. Three teams ultimately made him offers, and he re-signed with the White Sox for $60 million over five years.

Ask any professional sports team owner and he or she will probably say that unchecked competition in the labor market makes it almost impossible to make a profit. This is why owners have been so adamant in seeking "salary caps" that limit the total amount teams can pay their players. The NHL owners went so far as to cancel the entire 2004–2005 season to force players to accept a salary cap. Through the salary cap, teams and players share the profits they enjoy from their monopoly status in the output market. The most important issue in contract negotiations between the NBA and NFL and their respective unions is the magnitude of the cap; this is what determines who gets the largest piece of the monopoly pie. Instead of a salary cap, baseball has a "luxury tax" that kicks in when a team's aggregate salaries exceed roughly $120 million. Thus far, only George Steinbrenner's New York Yankees have substantially exceeded this limit. In fact, many teams spend nowhere near this limit and, like the Pirates and Devil Rays, make little effort to field a team that has a legitimate chance to win the World Series.

Entry

Sports team owners are a motley group—there include media companies like Cablevision (owner of the NBA New York Knicks and NHL New York Rangers), Time Warner (MLB's Atlanta Braves), and the Tribune Corporation (MLB's Chicago Cubs), who view their sports holdings as integral parts of their entertainment empires.

The Green Bay Packers are owned by over 100,000 stockholders, mostly fans residing in Wisconsin. (Don't bother trying to become a part owner—the Packers are not issuing new shares, and existing shares may not be resold.)

Most owners are wealthy businessmen for whom owning a sports team is the ultimate high-priced hobby. They include Micky Aronson (heir to the Carnival Cruise empire and owner of the Miami Heat basketball team), real estate tycoon Malcolm Glazer (owner of the NFL Tampa Bay Buccaneers and, much to the chagrin of their fans, English Soccer League powerhouse Manchester United), and Microsoft co-founder Paul Allen (owner of the NFL Seattle Seahawks and NBA Portland Trailblazers). Perhaps the most famous billionaire owners are George Steinbrenner, shipping magnate turned infamous owner of the New York Yankees, and dot-com mogul Marc Cuban, who sits on the bench and prowls the locker room of his NBA Dallas Mavericks franchise.

There is no shortage of rich men (and the occasional rich woman) who want to enjoy the limelight of sports team ownership. But it is not so easy—the barriers to entry are very high. Each league has rules governing the addition of new franchises. Potential new owners must pay current owners hundreds of millions of dollars. Most potential owners also offer to build new stadiums, knowing that visiting team owners will share ticket revenues (and therefore might be more inclined to vote in favor of league expansion). Incumbent team owners usually have the right to veto new franchises in their own geographic markets, further hindering entry. Unable to start sports teams from scratch, billionaires looking to join a league are usually forced to purchase an existing team. Because the number of billionaires has increased faster than the supply of teams, the purchase prices have risen dramatically; a few teams like the NFL Dallas Cowboys and MLB New York Yankees would reportedly sell for over $1 billion. So even though many sports teams post operating losses, their owners are enjoying huge capital gains.

Short of buying an existing team, the only other way for a would-be sports entrepreneur to enter the professional sports market is to form an entire new league. This raises the stakes for entry considerably—most of the new teams must succeed or the entire league is likely to fail. Though the risks are high, the rewards can be even higher, and a number of leagues have come and gone over the years, including the World Football League, the United States Football League (USFL), the XFL, and the Arena Football League (the NFL is *very* profitable), the American Basketball Association (ABA), and the World Hockey League.

Entry barriers are so severe that new leagues feel the need to differentiate their product in order to survive: The ABA introduced the 3-point shot; the USFL played its games in late winter and spring, after the NFL's Super Bowl; the XFL presented a more violent game. The Arena Football League plays indoors on a field the size of a hockey rink.

Not every new league fails. The Arena Football League is nearly 20 years old, though few fans feel it is an adequate substitute for the NFL. The older American Football League (AFL) and, to a lesser extent, the ABA, can be considered success stories, and the paths to their success were very similar. The AFL began in 1960, just as the NFL's popularity was on the rise. The AFL took advantage of three problems with the NFL: the NFL had teams in just 13 cities, the NFL style downplayed the exciting passing game, and NFL players had yet to earn the rights to free agency and the high salaries that would result. The AFL attacked these weaknesses. The league began with eight teams, six of which were located in cities that did not have NFL franchises.[5] AFL teams emphasized passing, and the resulting high scoring games

proved appealing to many fans. Even so, AFL teams lost money year after year. Following the dictum that you have to spend money to make money, in 1965 the AFL launched its most brazen attack on the NFL.

In the previous year, 1964, the AFL signed a $34 million television contract with NBC. (CBS had exclusive rights to NFL games.) AFL teams used the money to outbid the NFL for superstar players. New York Jets owner Sonny Werblin moved first by signing University of Alabama star quarterback Joe Namath to a deal paying an unprecedented $427,000 for the first year. When the AFL's Denver Broncos made a big offer to University of Illinois star Dick Butkus, the NFL assured the future Hall-of-Famer that he would receive "wheelbarrows" full of money if he signed with them. (He chose the NFL's Chicago Bears.) Soon, both leagues were giving wheelbarrows of money to stars like Roman Gabriel, John Brodie, and Pete Gogolak. After Oakland Raider head coach Al Davis became the AFL's commissioner in April 1966, the bidding wars intensified. The AFL, which was never profitable, took big losses, but it did not matter. The NFL was losing money for the first time in over a decade and sued for peace. In June 1966, the two leagues merged. The owners of AFL teams got what they wanted—the same fan base enjoyed by the NFL. In today's NFL, the American Football Conference still consists largely of former AFL teams.

The American Basketball Association (ABA) started in 1967. Like the AFL, most of the original 11 teams were located in non-NBA cities. Like the AFL, the ABA emphasized scoring, with a wide-open "up and down the court game" and the innovative 3-point shot. Like the AFL, the ABA paid big dollars to sign budding superstars such as "Dr. J" Julius Erving and scoring phenom Rick Barry. All of these strategies helped the ABA enjoy a loyal fan base. But playing in secondary markets like Pittsburgh, Louisville, and New Orleans, the national fan base was never large enough to generate a big television contract, and the league was unprofitable. The ABA did have one thing going for it that the AFL did not: Basketball fans had become disenchanted with the NBA, and attendance was falling. In 1977, when the NBA agreed to absorb four ABA teams, it hoped that the infusion of the upbeat style embodied by Dr. J would change the league's fortunes. Indeed, Dr. J's popularity heralded a new era for basketball, based on stars rather than teams. The later success of the NBA and superstars like Magic Johnson, Larry Bird, Michael Jordan, and Kobe Bryant can be traced to the product differentiation strategy that embodied the short-lived ABA.

It is hard to fathom how a new sports league today could match even the modest success of the ABA. All the major sports leagues have blanketed the nation with teams. The NFL even has "minor league" teams in Europe. Free agency means that star players are sure to make at least as much money signing with major leagues as they could with any upstart league. And except for MLB, the leagues are constantly changing rules to assure a pleasing style of play. As a result, opportunities for favorable geographic or product differentiation by a new league are virtually nonexistent. Leagues have attempted to differentiate by time of year—notably the USFL and the XFL—but either because the product was poor or fans had already moved on to other sports, these efforts failed.

Substitutes and Complements

Professional sports teams compete for entertainment dollars. Owners worry not only about the product on the field, but also the overall entertainment experience. One of the first owners to fully realize sports as entertainment was Tex Schramm, the legendary general manager of the Dallas Cowboys. In the early 1970s, Schramm hired

professional models to cheer from the sidelines. The models were unaccustomed to the Dallas heat, however, and were quickly exhausted. In 1972, Schramm decided to create a squad of professional dancers. The Dallas Cowboy Cheerleaders first appeared in 1973, and the rest is history—there is even a movie about these athletic beauties. Today's professional sporting events feature skilled cheerleaders, musical performances, costumed mascots (most famously, the San Diego Chicken), and fan participation events during game breaks. Off the court entertainment is so important that during the depths of the post–Michael Jordan basketball era, the Chicago Bulls still sold out most games, thanks, in part, to the circus-like atmosphere at the United Center.

There are many complements to professional sports. The most successful sports league in the United States, the NFL, is helped by two important complements. One is television. The Super Bowl is the top-rated television show every year, and playoff games and Monday Night Football also enjoy huge ratings. But football would not enjoy its phenomenal success without one other complement—gambling. Over $2 billion is bet legally on sports every year, mostly on the NFL and mostly through Las Vegas "sports books." This is just the tip of the iceberg; estimates of illegal sports betting (including gray market gambling through offshore Internet sites) exceed $100 billion, again mostly on the NFL. Millions of bets may be placed on each regular season NFL game and probably ten times that many for the Super Bowl.[6] With this many people betting so much money, it is no wonder that NFL games get huge television audiences, even when the home team is not playing.

Gambling poses a dilemma for professional sports. While gambling boosts fan interest, league management perpetually fears that players will come under the influence of bookmakers and intentionally throw a game in exchange for a big payday. If fans thought that the outcomes of games were determined by bribes, rather than the play on the field, the foundation of sports would crumble. The 1919 "Black Sox" scandal, which resulted when eight Chicago White Sox baseball players were accused of taking bribes (seven of whom admitted to the fact), nearly took down the sport. It took the charismatic Babe Ruth and his prodigious bat to revive MLB's fortunes. More recently, Pete Rose, arguably one of the best ballplayers of all time, was banned from the Hall of Fame for gambling on baseball.

Gambling may pose an even bigger dilemma for college sports. Most professional athletes are paid well enough to have little cause to take money from bookmakers. (This was not true in 1919, when professional gambler "Sport Sullivan" offered White Sox players at least $10,000 apiece to throw the World Series, at a time when team owner Charlie Comiskey paid his best player, "Shoeless" Joe Jackson, only $6000 annually.[7]) But college players have little guarantee of reaching the pros, and the temptation of a big payday is large. In the late 1990s, two starters on the Northwestern University basketball team were charged with "point shaving," intentionally losing games by large margins in exchange for cash payments from bettors.[8]

Supplier Power

We have discussed the most powerful suppliers, the players' unions, at length. Most players are trained in college, making undergraduates sports teams a critical supplier to professional sports. The National Collegiate Athletic Association (NCAA), which governs all undergraduate athletics, has been a benign supplier. At worst, it has pressured major league sports not to draft underclassmen, but it has never broached the topic of direct financial support from the major leagues.

Cities are another major supplier to sports teams. Most local politicians believe that local sports teams add significantly to their economies, despite research suggesting that the economic benefits are vastly overstated, and are willing to use taxpayer dollars to subsidize new sports stadiums.[9] Such payments have precedent in American business—witness the millions of dollars in subsidies or tax breaks given to companies to build factories or relocate headquarters. But the amounts spent on sports stadiums are staggering, often reaching several hundred million dollars. This may change. Municipal finances have gone south in the past decade, owing to rising spending on health and education and ongoing resistance to tax increases. At the same time, local politicians are gradually learning that the benefits of new stadiums are largely illusory. The result is that sports owners can no longer count on local governments to build their stadiums and must increasingly rely on corporate sponsorships or their own personal wealth.

Buyer Power

There are four major television networks and three major sports cable systems (ESPN, Comcast, and FoxSportsNet). They often compete head-to-head to obtain the national broadcast rights for major sports. Most networks view professional sports as a loss leader and are willing to pay huge sums to get sports fans to associate the network's name with specific sports. ABC's Monday Night Football is the best example, but the "NFL on CBS" and other associations also come to mind. Given that at any time of the year there are more networks than there are leagues in action, the upper hand in these negotiations will belong to the sports leagues. The same applies to negotiations over the right to broadcast games locally on television and radio.

Conclusion

Loyal fans and league bylaws give sports teams the kind of product market differentiation and entry barriers that sellers of other goods and services envy. Teams can set prices well above marginal costs year after year, only to have the resulting profits bargained away by powerful unions. But such buyer power cannot explain why so many sports teams report operating losses year after year. To explain this, we have to remember that many owners are not in the business to make money. Owner-hobbyists are in it to win, and spending an additional $10 million on a top free agent will not deter them. As long as the supply of billionaires keeps up, sports owners should continue to expect operating losses and capital gains.

Table 10.3 summarizes the five-forces analysis.

TABLE 10.3
FIVE-FORCES ANALYSIS OF PROFESSIONAL SPORTS LEAGUES

Force	*Threat to Profits*
Internal rivalry	Low (output markets); High (input markets)
Entry	Low
Substitutes/complements	Low
Buyer power	Low
Supplier power	Low (except for players' unions)

Chapter Summary

- An industry analysis provides an overview of the potential profitability of the average firm in an industry.
- A comprehensive analysis examines the five forces: internal rivalry, entry, substitutes, buyer power, and supplier power. The latter four operate independently and may also intensify internal rivalry.
- Internal rivalry is fierce if competition drives prices toward costs. This is more likely when there are many firms, products are perceived to be homogeneous, consumers are motivated and able to shop around, prices may be set secretly, sales orders are large and received infrequently, and the industry has excess capacity.
- The threat of entry is high if firms can easily enter an industry and capture market share from profitable incumbents while intensifying price competition.
- Substitutes also capture sales and intensify price rivalry.
- Buyers and suppliers exert power directly by renegotiating the terms of contracts to extract profits from profitable industries, and indirectly by shopping around for the best prices.
- The government can affect profitability and should be considered either as part of the five forces or as a separate force.
- Profits may be threatened by any or all of the five forces. Although it is useful to construct a "five-forces scorecard" on which the forces can be rated, the exercise of assessing the five forces is more important than the actual scores. Through this exercise, the analyst develops deep knowledge of key strategic issues affecting the industry in question.
- A sound five-forces analysis should be based on economic principles. The tools for analyzing internal rivalry, entry, and substitutes are derived from industrial organization and game theory, which are discussed in Chapters 6 through 9. The tools for analyzing buyer and supplier power are derived from the economics of vertical relationships, which were discussed in Chapters 3 and 4.

Questions

1. It has been said that Porter's five-forces analysis turns antitrust law on its head. What do you think this means?
2. Comment on the following: All of wisdom contained in the five-forces framework is reflected in the economic identity:

$$\text{Profit} = (\text{Price} - \text{Average Cost}) \times \text{Quantity}$$

3. How does the magnitude of scale economies affect the intensity of each of the five forces?
4. How does capacity utilization affect the intensity of internal rivalry? the extent of entry barriers?
5. How does the magnitude of consumer switching costs affect the intensity of internal rivalry? of entry?
6. How do exit barriers affect internal rivalry? entry?
7. Consider an industry whose demand fluctuates over time. Suppose that this industry faces high supplier power. Briefly state how this high supplier power will affect the variability of profits over time.

8. What does the concept of "coopetition" add to the five-forces approach to industry analysis?
9. Coopetition often requires firms to communicate openly. How is this different from collusion? How can antitrust enforcers distinguish between coopetition and collusion?
10. The following listing reports the approximate distribution of profits (on a per disc basis) for different steps in the vertical chain for music compact discs:

Artist:	$.60
Record company:	$1.80
Retailer:	$.60

Use the five forces to explain this pattern. (*Note*: There are about half a dozen major record companies. They are responsible for signing up artists, handling technical aspects of recording, securing distribution, and promoting the recordings.)

Appendix
Template for Doing a Five-Forces Analysis

Factors Affecting Rivalry among Existing Competitors

To what extent does pricing rivalry or nonprice competition (e.g., advertising) erode the profitability of a typical firm in this industry?

	Characterization (Current)	*Future Trend*
Degree of seller concentration?		
Rate of industry growth?		
Significant cost differences among firms?		
Excess capacity?		
Cost structure of firms: sensitivity of costs to capacity utilization?		
Degree of product differentiation among sellers? Brand loyalty to existing sellers? Cross-price elasticities of demand among competitors in industry?		
Buyers' costs of switching from one competitor to another?		
Are prices and terms of sales transactions observable?		
Can firms adjust prices quickly?		
Large and/or infrequent sales orders?		
Use of "facilitating practices" (price leadership, advance announcement of price changes)?		
History of "cooperative" pricing?		
Strength of exit barriers?		
High industry price elasticity of demand?		

Factors Affecting the Threat of Entry

To what extent does the threat or incidence of entry work to erode the profitability of a typical firm in this industry?

	Characterization (Current)	Future Trend
Significant economies of scale?		
Importance of reputation or established brand loyalties in purchase decision?		
Entrants' access to distribution channels?		
Entrants' access to raw materials?		
Entrants' access to technology/know-how?		
Entrants' access to favorable locations?		
Experience-based advantages of incumbents?		
Network externalities: demand-side advantages to incumbents from large installed base?		
Government protection of incumbents?		
Perceptions of entrants about expected retaliation of incumbents/reputations of incumbents for "toughness"?		

Factors Affecting or Reflecting Pressure from Substitute Products and Support from Complements

To what extent does competition from substitute products outside the industry erode the profitability of a typical firm in the industry?

	Characterization (Current)	*Future Trend*
Availability of close substitutes?		
Price-value characteristics of substitutes?		
Price elasticity of industry demand?		
Availability of close complements?		
Price-value characteristics of complements?		

Factors Affecting or Reflecting Power of Input Suppliers

To what extent do individual *suppliers have the ability to negotiate high input prices with typical firms in this industry? To what extent do input prices deviate from those that would prevail in a perfectly competitive input market in which input suppliers act as price takers?*

	Characterization (Current)	*Future Trend*
Is supplier industry more concentrated than industry it sells to?		
Do firms in industry purchase relatively small volumes relative to other customers of supplier? Is typical firm's purchase volume small relative to sales of typical supplier?		
Few substitutes for suppliers' input?		
Do firms in industry make relationship-specific investments to support transactions with specific suppliers?		
Do suppliers pose credible threat of forward integration into the product market?		
Are suppliers able to price-discriminate among prospective customers according to ability/ willingness to pay for input?		

Factors Affecting or Reflecting Power of Buyers

To what extent do individual *buyers have the ability to negotiate low purchase prices with typical firms in this industry? To what extent do purchase prices differ from those that would prevail in a market with a large number of fragmented buyers in which buyers act as price takers?*

	Characterization (Current)	*Future Trend*
Is buyers' industry more concentrated than the industry it purchases from?		
Do buyers purchase in large volumes? Does a buyer's purchase volume represent a large fraction of the typical seller's sales revenue?		
Can buyers find substitutes for industry's product?		
Do firms in industry make relationship-specific investments to support transactions with specific buyers?		
Is price elasticity of demand of buyer'sproduct high or low?		
Do buyers pose credible threat of backward integration?		
Does product represent significant fraction of cost in buyer's business?		
Are prices in the market negotiated between buyers and sellers on each individual transaction, or do sellers post a "take-it-or-leave-it" price that applies to all transactions?		

ENDNOTES

[1]Community hospitals treat a variety of patients on a short-term basis. Another type of hospital not considered here is the psychiatric hospital.

[2]Benkard, L. "Learning and Forgetting: The Dynamics of Airplane Production," *American Economic Review*, September 2000.

[3]The Chicago Sky, a new team in the Women's NBA, does not play during the same time of the year.

[4]There are nuances in some sports, as in basketball where the worst teams participate in a "lottery" to decide which one gets the top pick. The Cleveland Cavaliers won the lottery in 2003 and selected LeBron James with the top pick, immediately rejuvenating a struggling franchise.

[5]The cities with overlapping franchises were New York and Los Angeles. By 1962, the Los Angeles franchise had moved to San Diego. In 1960, the NFL added a new franchise in Dallas, one of the original AFL cities. In 1963, the AFL Dallas franchise moved to Kansas City.

[6]Just one web site, http://BETonSPORTS.com, totaled over 500,000 wagers for the 2005 Super Bowl.

[7]As it turned out, Sullivan initially paid a total of $10,000 to eight players. Most of the Sox involved in the scandal still went along with the plan, except apparently for Jackson. Sullivan eventually came up with more money, and Cincinnati won the series five games to three.

[8]In both cases, bettors gambled that Northwestern would lose by more than 14 points. By intentionally missing shots or turning the ball over to the other team, the players involved made sure that Northwestern lost by more than 14 points. Two other nonstarters on the basketball team were also implicated. In an unrelated matter, a former Northwestern football player was charged with betting against his own team in the early 1990s and taking actions (such as deliberately fumbling the football) aimed at increasing the odds that his team would lose. We are obliged to point out that Northwestern is not the only school where such scandals have occurred.

[9]The typical argument by politicians is that sports stadiums generate millions of dollars in ticket sales for the local economy. This ignores the fact that virtually all ticket buyers live in the community and would have spent their entertainment dollars on some other local activity had there been no sports. Moreover, many, if not most, athletes do not live in the community, so much of the ticket revenues flow out of the local market. This would not be the case for money spent on, say, restaurants or local theater.