



MICHAEL E. PORTER

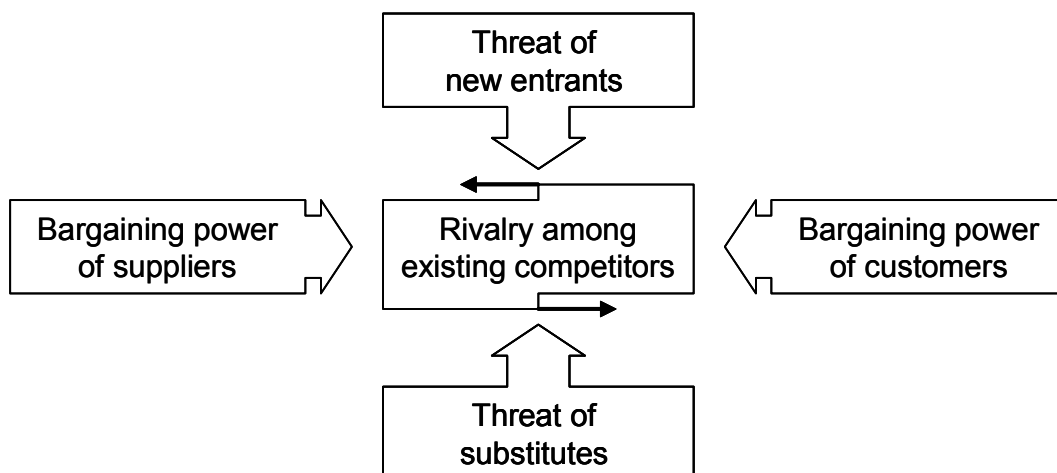
Understanding Industry Structure

The essence of the job of the strategist is to cope with competition. The arena in which competition takes place is the industry in which a company and its rivals vie for business. Each industry has a distinctive structure that shapes the nature of competitive interaction that unfolds there. Understanding the underlying structure of a company's industry, now and in the future, is a core discipline in strategy formation.

On the surface, every industry is different. Consider the global automobile industry, the worldwide market for art masterpieces, the booming private equity industry, and the heavily regulated health-care delivery industry in Europe. At one level, these industries appear to have little in common. Industries also differ in another crucial aspect: they register sharply different levels of average profitability in the long run. For example, **Exhibit 1** shows a histogram of long-run return on invested capital in the United States for more than 400 industries. The most profitable industries generate much higher returns than the least profitable. Equally significant differences arise in other countries, both advanced and emerging.

To understand industry competition and profitability, however, one must look beyond their differences and view industries at a deeper level. In any industry, there are five basic competitive forces—diagrammed in **Figure A**—whose collective strength determines the long-run profit potential

Figure A Forces that Shape Competition in an Industry



Source: Casewriter.

Professor Michael E. Porter prepared this note based on the classic article "How Competitive Forces Shape Strategy," *Harvard Business Review*, July-August 1979, Product Number 79208. Professor Jan W. Rivkin assisted in the preparation of this note, which is an update and extension of the article.

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of the industry. The forces range from intense in industries such as airlines, textiles, and steel, where almost no company earns attractive returns on investment, to mild in industries such as medical supplies, soft drinks, and toiletries, where there is room for quite high returns. Many things can affect industry profitability in the short run—including the weather and the business cycle—but it is industry structure manifested in the competitive forces that sets industry profitability over the long run.

Understanding competitive forces, and their causes, gives a strategist a way to size up any industry, regardless of whether it is a product or a service, emerging or mature, high tech or low tech. An analysis of industry structure reveals the roots of an industry's profitability at any point in time while providing a framework for anticipating and influencing changes in industry competition (and profitability) over time. As we will see, defending against the competitive forces or shaping them in a company's favor becomes an important component of strategy.

Forces that Shape Competition

Managers tend to view competition too narrowly, as manifested only in today's direct competitors. As **Figure A** emphasizes, however, competition goes well beyond the established industry rivals. Customers, suppliers, potential entrants, and substitute products are all competitors in the fight for profits, competitors whose influence may be more or less important depending on the industry. The extended rivalry that results from the interplay of these competitive forces gives rise to industry profitability.

Different forces take on prominence in shaping competition in each industry. In the market for commercial aircraft, the key forces are the fierce rivalry between dominant producers Airbus and Boeing and the bargaining power of the airlines that place huge orders for aircraft. In the movie theater industry, the critical forces are the proliferation of substitute forms of entertainment and the power of the movie producers and distributors who supply the critical input, movies themselves.

The strongest competitive force or forces set the profitability of an industry and become the most important to strategy formulation. For example, even an industry where new entry is not a threat will earn low returns if it faces a superior or lower-cost substitute product—as Kodak and Fuji, the world's leading producers of photographic film, learned with the advent of digital photography. In such a situation, coping with the substitute product becomes the number one strategic priority.

Every industry has an underlying structure, or set of economic and technical characteristics, that gives rise to these competitive forces. We examine industry structure from the perspective of an incumbent company already present in the industry. The analysis can be readily extended to understand the challenges facing a potential entrant.

Threat of Entry

New entrants to an industry bring new capacity and a desire to gain market share. The threat of new entry puts a cap on the profit potential of an industry. When the threat is high, profits cannot rise too high without attracting new competitors. Especially when new entrants are diversifying from other markets, they can leverage existing capabilities to shake up competition, as Microsoft did when it entered the market for Internet browsers.

The threat of entry into an industry depends on the barriers to entry that are present and on the reaction from existing competitors that entrants can expect. If entry barriers are low and newcomers

expect little retaliation from the entrenched competitors, the threat of entry is high and industry profitability is moderated.

There are seven major sources of barriers to entry:

1. *Supply-side economies of scale*—These economies arise when firms that produce at larger volumes enjoy lower costs per unit, because they can spread fixed costs over more units, employ more efficient technology, or command better terms from suppliers. Supply-side scale economies deter entry by forcing the aspirant either to come in at a large scale or to accept a cost disadvantage. Scale economies in research, production, consumer marketing, and original equipment manufacturer (OEM) sales are probably the key barriers to entry in the microprocessor industry, protecting incumbents such as Intel. Economies of scale can also arise in logistics, financing, and information technology infrastructure.
2. *Demand-side benefits of scale*—These benefits, also known as network effects, arise in industries where a buyer's willingness to pay for a company's product increases with the number of other buyers who also patronize the company. Buyers may trust larger companies more for a crucial product; recall the old adage that no one ever got fired for buying from IBM when it was the dominant computer maker. Buyers may also value being in a "network" with a larger set of fellow customers. For instance, each online auction participant is attracted to eBay rather than other auction sites because eBay offers more potential trading partners. Many computer users prefer Microsoft's Windows operating system because other users, with whom they want to be compatible, also opt for Windows. In addition, computer users prefer Windows because its larger base of users has attracted a greater number of independent programmers, who in turn develop more software applications that customers value. Demand-side benefits of scale discourage entry by limiting the willingness of customers to buy from a newcomer and reducing the price the newcomer can command until it builds up a large base of customers.
3. *Customer switching costs*—Switching costs are fixed costs that buyers face when they change suppliers. They may arise because a buyer who switches vendors must alter product specifications, retrain employees to use a new product, or build up new procedures or systems, for example. The larger are switching costs, the harder it will be for an entrant to gain customers.
4. *Capital requirements*—The need to invest large financial resources in order to compete creates a barrier to entry. Capital may be necessary not only for fixed facilities but also for customer credit, inventories, and start-up losses. The barrier is particularly great if the capital is required for unrecoverable expenditures such as up-front advertising or research and development (R&D). While major corporations have the financial resources to invade almost any industry, the huge capital requirements in certain fields, such as mineral extraction, limit the pool of likely entrants. In fields such as tax preparation services, in contrast, capital requirements are minimal and potential entrants plentiful.

It is important, however, not to overstate the degree to which capital requirements alone deter entry. If industry returns are attractive and are expected to remain so, and if capital markets are efficient, investors will provide entrants with the funds they need. This is especially true today, when deep pools of private equity stand ready to fund attractive ventures.

5. *Incumbency advantages independent of size*—Incumbent companies may have cost or quality advantages not available to potential rivals, no matter what their size. These advantages can stem from proprietary technology, access to the best raw material sources, government

subsidies, favorable geographic locations, or cumulative experience that has allowed incumbents to learn how to produce efficiently. Sometimes such advantages are legally enforceable, as they are through patents.

6. *Unequal access to distribution channels*—The newcomer on the block must, of course, secure distribution of its product or service. A new food item, for example, must displace others from the supermarket shelf via price breaks, promotions, intense selling efforts, or some other means. The more limited the wholesale or retail channels are and the more that existing competitors have tied them up, the tougher entry into an industry will be. Sometimes access to distribution is so high a barrier that a new entrant must create its own distribution channels. Thus, upstart low-cost airlines in Europe have avoided distribution through travel agents, who tend to favor established higher-fare carriers, and have encouraged passengers to book their own flights via Internet websites.
7. *Restrictive government policy*—Government can limit or even foreclose entry to industries via controls such as license requirements, patent protection, foreign investment barriers, and limits on access to local raw material sources. Regulated industries such as liquor retailing and taxi services are visible examples in most developed countries; more subtle government restrictions operate in fields such as health care and coal mining. The government can also heighten entry barriers indirectly through controls such as pollution and safety regulations, which raise the standards newcomers must meet. (Of course, government policies may also make entry easier—for instance, by funding basic research and making it available to all firms, new and old.)

The expectations of potential new entrants about the reaction of existing competitors will also influence their decision to enter or stay out of an industry. Newcomers are likely to have second thoughts about entry if:

- Incumbents have previously responded vigorously against new entrants.
- Incumbents possess substantial resources to fight back, including excess cash and unused borrowing power, available productive capacity, or clout with distribution channels and customers.
- Incumbents seem likely to cut prices because they want to retain market shares or because the industry as a whole has excess capacity.
- Industry growth is slow so that newcomers must gain volume by taking it from incumbents.

Entry barriers should be assessed *relative* to the capabilities of potential entrants, which may be foreign firms or companies in related industries. And, as some of our examples illustrate, the strategist must be mindful of how newcomers might find creative ways to circumvent apparent barriers.

The Power of Suppliers

Suppliers can exert bargaining power by raising prices, shifting costs downstream to industry participants, or limiting the quality of the goods and services they provide. Powerful suppliers can thereby squeeze profitability out of an industry that is unable to pass on cost increases in its own prices. Microsoft, for instance, has contributed to the erosion of profitability among personal computer makers by raising prices on operating systems. The PC makers, competing fiercely for customers who can easily switch among them, have limited freedom to raise *their* prices accordingly.

An industry will depend on multiple groups of suppliers, including suppliers of labor. The power of each important supplier group depends on a number of structural characteristics of the industry. A supplier group is powerful if:

- It is more concentrated than the industry it sells to. Microsoft's near monopoly in operating systems, coupled with fragmentation among PC-making customers, exemplifies this situation.
- Industry participants face switching costs in changing suppliers. For example, they might have invested heavily in specialized ancillary equipment or in learning how to operate a supplier's equipment (as in Bloomberg terminals used by financial professionals or computer-aided design software packages). Or they may have connected their production lines to a supplier's manufacturing facilities (as in some production of beverage containers). When switching costs are high, industry participants find it hard to play suppliers off against one another, and suppliers are then positioned to extract profits from an industry.
- Suppliers offer products that are differentiated. Pharmaceutical makers, each with patented drugs that offer different medical benefits, have more power over hospitals, health maintenance organizations, and other drug buyers, for example, than do suppliers that produce me-too products.
- There are no substitutes to what the supplier group provides. Pilots' unions, for example, exercise considerable supplier power over airlines partly because there are no good alternatives to a well-trained pilot in the cockpit.
- The supplier group can credibly threaten to integrate forward into the industry. Here, if industry participants make too much money relative to suppliers, they will only induce suppliers to enter the market.
- The supplier group does not depend heavily on the industry. Suppliers serving many industries will not hesitate to extract maximum profits from each one. If a particular industry accounts for a large portion of a supplier group's volume or profit, however, suppliers' fortunes will be closely tied to that industry. They will want to protect the industry through reasonable pricing and assistance in activities such as R&D and lobbying.

The Power of Customers

Analogous to suppliers, powerful customers can force down prices, demand higher quality or more service (thereby driving up costs), and play competitors off against each other—all at the expense of industry profits. As with suppliers, groups of customers may differ in their bargaining power. Customers are powerful if (1) they have clout relative to industry participants and especially if (2) they emphasize price reductions as the means to exercise their clout.

A customer group has clout if:

- It is concentrated or purchases in volumes that are large relative to the size of a single vendor. Large-volume buyers are particularly powerful if heavy fixed costs characterize an industry—as they do in telecommunications equipment, large-scale software development, and bulk chemicals; this amplifies the need to keep capacity filled.
- The industry's products are standard or undifferentiated. If buyers believe they can always find equivalent suppliers, they tend to play one vendor against another. In overnight delivery, shippers pit UPS, Federal Express, and DHL against one another.

- Buyers face few switching costs in changing vendors.
- Buyers have a credible threat of integrating backward to produce the industry's product themselves if vendors are too profitable. The makers of soft drinks and beer have long controlled the power of can makers by threatening to make, and at times actually making, cans themselves.

A customer group is price sensitive if:

- The products it purchases from the industry represent a significant fraction of its cost or expenditures. Here buyers are likely to bargain hard for a favorable price, as consumers do for home mortgages. Where the product sold by an industry is a small fraction of buyers' costs or expenditures, buyers are usually much less price sensitive.
- The customer group earns low profits, is strapped for cash, or is otherwise under pressure to trim its purchasing costs. Highly profitable or cash-rich buyers, in contrast, are generally less price sensitive (that is, of course, if the item does not represent a large fraction of their costs). Internet content providers, for instance, became far more selective and powerful buyers of computer equipment after the Internet bubble burst and capital became scarcer.
- The quality of the buyers' products or services is little affected by the industry's product. Where the quality of the buyers' products is very much affected by the industry's product, buyers are generally less price sensitive. When buying or renting production-quality cameras, for instance, makers of major motion pictures opt for equipment made by vendors with strong reputations for quality. They pay limited attention to price.
- The buyer's overall costs are not significantly affected by the industry. Where an industry's product or service can pay for itself many times over, the buyer is usually more interested in quality than in price. This is true in businesses like the logging of oil wells, where an accurate survey can save thousands of dollars in drilling costs, and in services such as investment banking and public accounting, where poor performance can be costly and embarrassing.

Most of these sources of buyer power apply to consumers, not just to industrial and commercial buyers. Consumers tend to be more price sensitive if they are purchasing products that are undifferentiated, expensive relative to their incomes, and of a sort where product performance has limited consequences. Channels can also be analyzed the same way, with one important addition. Channels gain significant bargaining power over upstream manufacturers when they influence the purchasing decisions of downstream customers, as they do in consumer electronics and jewelry retailing and in agricultural equipment distribution. Where channels are powerful, exclusive arrangements often arise as producers attempt to mitigate this clout.

The Threat of Substitutes

A substitute performs the same or a similar function as an industry's product but by a different means. Videoconferencing is a substitute for travel, plastic is a substitute for aluminum, and e-mail is a substitute for express mail, for example. Substitutes are easy to overlook because they may look very different from the industry's product: to someone searching for a Father's Day gift, neckties and power tools may be substitutes. Substitutes nearly always exist. Many times, one substitute is to do without a product, and another is for customers to perform a service for themselves.

Substitute products or services limit an industry's profit potential by placing a ceiling on the prices that the companies in an industry can charge. An industry must distance itself from substitutes via performance or marketing or it will suffer in terms of earnings and possibly growth.

The more attractive is the price-performance trade-off offered by substitute products, the tighter is the lid placed on the industry's profit potential. Sugar producers confronted with the large-scale commercialization of high-fructose corn syrup, a sugar substitute, learned this lesson in the 1970s and 1980s. More recently, conventional providers of long-distance telephone service have suffered from the advent of Internet-based phone services such as Skype and Vonage. Similarly, video rental outlets are struggling with the emergence of video-on-demand services offered by cable and satellite television service providers and the rise of Internet video sites such as Google Video and YouTube.

Substitutes not only limit profits in normal times; they also reduce the bonanza an industry can reap in good times while constraining the size of the industry. In emerging economies, for example, the surge in demand for wired telephone lines has been capped as many consumers have opted to make a mobile telephone their first and only phone line.

Substitute products that deserve the most strategic attention are those that (a) are subject to trends improving their price-performance trade-off with the industry's product, or (b) are produced by industries reaping high profits that may erode with competition. Substitutes can rapidly come into play if intensifying competition in their industry causes price reduction or performance improvement. For example, fierce competition among Internet portals in the late 1990s led to quick introduction of free e-mail services by the likes of Yahoo!, Microsoft, and Lycos, affecting substitutes such as fax machines and express mail service.

Rivalry among Existing Competitors

Rivalry among existing competitors takes many familiar forms: price discounting, new-product introductions, advertising campaigns, service escalation, and so forth. The degree to which rivalry undermines an industry's profit potential depends, first, on the basis on which companies compete and, second, on the intensity with which they compete. Price is typically the most destructive basis of competition for industry profitability. Price reductions transfer profits directly from an industry to its customers, and they are usually easy for competitors to see and match, making successive rounds of retaliatory cuts more likely. Conversely, competition on services or features can allow industry competitors to support good margins.

Industry competition gravitates to price if:

- The product or service lacks differentiation or switching costs. This makes it easy for buyers to shift vendors and encourages competitors to believe that a modest price cut will bring many new customers. Years of airline price wars reflect these circumstances in that industry.
- Fixed costs are high and marginal costs are low. This creates intense pressures for competitors to cut prices below their average costs, even close to their marginal costs, in order to steal incremental customers who will make some contribution to covering fixed costs. Many basic materials businesses, such as paper and aluminum, suffer from this problem, especially when demand slackens.
- Capacity must be expanded in large increments. The need for large capacity expansions, as in the chloride and vinyl chloride businesses, disrupts the industry's supply-demand balance and often leads to periods of overcapacity and price cutting.

- The product is perishable. Perishability creates a strong temptation to cut prices and sell a product while it still has value. More products and services are perishable than is commonly thought. Just as tomatoes are perishable because they rot quickly, models of computers are perishable because they quickly become obsolete, airline seats are perishable because they are worthless if not sold by flight time, and information may be perishable if it diffuses and thereby loses its value. Indeed, many services are perishable in the sense that unused capacity can never be recovered.

Regardless of whether price is a primary basis of competition, the intensity of competition is greatest if:

- Competitors are numerous or are roughly equal in size and power. In such a situation, rivals find it hard to avoid poaching business. Without an industry leader, practices desirable for the industry go unenforced.
- Industry growth is slow. Slow growth precipitates fights for market share. Slow or negative growth in popular music in the 2000s has intensified rivalry, and pressure on profitability is driving consolidation in the industry.
- Exit barriers are high. Exit barriers, the flip side of entry barriers, arise because of very specialized assets or management's devotion to a particular business. These barriers keep companies competing even though they may be earning low or even negative returns on investment. Excess capacity remains in use, and the profitability of the healthy competitors suffers as the sick ones hang on.
- Rivals are highly committed to the business but have diverse approaches, origins, and "personalities." With different ideas about how to compete, rivals continually run head-on into each other. Clashes of personalities and egos have sometimes exaggerated rivalry in fields such as the media and high technology.

Industry Structure in Context

Industry structure, manifested in the strength of the five competitive forces, determines an industry's long-run profit potential because the forces shape the division of value among industry actors—whether profit is constrained by substitutes or new entrants, bargained away by customers or suppliers, or competed away by rivals. By considering all five forces, a strategist keeps overall structure in mind instead of gravitating to any one element. In addition, attention is paid to long-run industry conditions rather than fleeting factors; industry structure is reflected in profitability over a business cycle, not in a single year.

In assessing industry competition, analysts are often drawn to a number of industry attributes. These attributes can be highly salient, but their significance depends on their effect on the competitive forces. Consider, for instance:

Industry growth rate A common mistake is to assume that fast-growing industries are attractive industries. Growth *does* tend to mute rivalry because an expanding pie offers opportunities for all competitors. The full effect of growth, however, depends on how growth influences overall industry structure. Fast growth can put suppliers in a powerful position, and high growth with low entry barriers will draw in entrants. Even without new entry, a high growth rate certainly does not guarantee profitability if customers are powerful or substitutes are attractive. Indeed, some fast-

growth businesses such as the personal computer industry have been among the least profitable industries in recent years.

Government Government involvement is not inherently good or bad for industry profitability, nor is government best understood as a sixth force. Instead, it is often most fruitful to analyze each specific government policy to see whether it improves or undermines industry structure. Either effect is possible. For instance, patents raise barriers to entry, boosting industry profit potential. Conversely, government policies favoring unions may raise supplier power and diminish profit potential. Bankruptcy rules that allow failing companies to reorganize rather than exit can lead to excess capacity and intense rivalry. The best way to understand the influence of government on competition is to analyze how present government policies affect the competitive forces.

Technology and innovation Technology or innovations alone are not themselves enough to make an industry structurally attractive (or unattractive). The impact of technology on industry attractiveness depends on how the technology affects the full set of competitive forces. Mundane, low-technology industries are often far more profitable than sexy industries such as software and Internet technology that attract competitors.

The role of complementary products and services Often an industry's product or service is used together with others produced by different industries. Computer hardware and software, for instance, are valuable together and worthless when separated. Personal digital assistants (PDAs) are valuable on their own, but their value is enhanced by thousands of applications that third-party developers have created. When the value of two products together is greater than the sum of each product's value in isolation, we say that the two are complements.

In recent years, strategy researchers have highlighted the role of complements, especially in high-technology industries.¹ By no means, however, do complements appear only in high-tech industries. The value of a car, for example, is greater when the driver also has access to gasoline stations, paved roads, spare parts, auto insurance, a car navigation system, and so forth.

Complements are always important in affecting the overall demand for an industry's product. Especially when demand is small or stagnant, firms should encourage the provision of complements and sometimes produce complementary products themselves or partner with other firms to do so. Michelin, for example, began publishing its now-famous guidebooks in order to encourage travel by car and boost demand for its tires. More recently, Intel invested in companies that produce equipment for videoconferencing via computers. Intel's leaders realized that such computers would require high-end microprocessors, most likely made by Intel.

While the availability of complements boosts demand, complements have an ambiguous effect on overall industry structure. In computers, for example, operating systems and microprocessors are complements. Each industry would benefit if the other industry were more competitive, with lower prices and less profit. Hence makers of operating systems and microprocessors have incentives to spur on rivalry in each other's industry. Similarly, operating systems are complements to application software. Microsoft eagerly provides tool sets that make it easier to write applications for Windows, which lowers the barriers to entry into the application software industry. As these examples illustrate, complements are neither inherently good nor inherently bad for industry profit potential.

¹ See especially Adam Brandenburger and Barry Nalebuff, *Co-opetition* (New York: Currency/Doubleday, 1996). For treatments focused on high-tech industries, see Annabel Gawer and Michael Cusumano, *Platform Leadership* (Boston: Harvard Business School Press, 2002); and David S. Evans, Andrei Hagiu, and Richard Schmalensee, *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries* (Cambridge, MA: MIT Press, 2006).

Rather, their effect on industry profitability depends on how they influence the five competitive forces.

Effective strategists look for opportunities to alter conditions in complementary industries in their favor—by boosting demand, improving overall structure, or advancing a firm's relative standing within its industry. In the market for PDAs, for example, Palm beat out other makers largely because it promoted third-party applications and enabled its product to synch with desktop computers—thereby making computers a complement for PDAs rather than a substitute. In the early days of the videocassette recorder, sets of firms led by JVC and Sony battled to determine whose recording standard would be dominant. JVC realized that prerecorded tapes were a key complement to a VCR. The company convinced movie studios to favor its standard when releasing taped films to video stores. This effort to influence a complementary product helped to tip the VCR market toward JVC even though Sony's standard was probably superior from a technical perspective.

Changes in Industry Structure

So far, we have discussed the competitive forces at a single point in time. Industry structure proves to be relatively stable, and industry profitability differences are remarkably persistent in practice. However, industry structure is constantly undergoing modest adjustment and occasionally changes abruptly. Shifts in structure sometimes emanate from outside an industry due to technological, customer, or other developments. In other cases, choices or innovations from within the industry culminate in a new structure. Sometimes industry structural change boosts the profit potential of an industry; sometimes change reduces it. The five competitive forces provide a framework for identifying those industry developments that are most important and for anticipating their impact on industry attractiveness.

Shifting threat of new entry Changes to any of the seven entry barriers described above can raise or lower the threat of new entry. The expiration of a patent, for instance, may unleash new entrants. On the first day that Merck's patents for the cholesterol reducer Zocor expired, three pharmaceutical makers entered the market for the drug. Conversely, proliferation of products in the ice cream industry has filled up the limited freezer space in grocery stores, making it harder for new ice cream makers to gain access to distribution in North America and Europe.

Strategic decisions of leading competitors often have a major impact on the threat of entry. Starting in the 1970s, for example, retailers such as Wal-Mart, Kmart, and Toys R Us began to adopt new distribution and inventory-control technologies with large fixed costs, including automated distribution centers, bar coding, and point-of-sale terminals. These investments increased the economies of scale in retailing and made it more difficult for small retailers to enter the business (and for existing small players to survive).

Changing supplier and buyer power As the factors underlying supplier and buyer power change with time, their power rises or declines. In the global appliance industry, for instance, competitors including Electrolux, General Electric, and Whirlpool have been squeezed by the consolidation of retail channels (e.g., the decline of appliance specialty stores and the rise of big-box retailers such as Best Buy and Home Depot in the United States). At the same time, rising global demand for appliance-grade steel, driven by such things as the rapid growth of China, has made suppliers more powerful, at least in the short run.

Shifting substitution threat The most common reason that substitutes become more or less threatening over time is that advances in technology create new substitutes or shift price-

performance comparisons in one direction or another. The earliest microwave ovens, for example, were large and priced above \$2,000, making them poor substitutes for conventional ovens. With technological advances, they are now serious substitutes. Flash computer memory has improved enough recently to be a meaningful substitute for low-capacity hard disk drives.

New bases of rivalry Rivalry often intensifies naturally over time. As an industry matures, growth slows. Competitors become more similar as industry conventions emerge, technology diffuses, and consumer tastes converge. Industry profitability falls, and weaker competitors are driven from the business. This story has been played out in industry after industry; televisions, snowmobiles, aerosol packaging, and telecommunications equipment are just a few examples.

It is not inevitable, however, that industries will trend toward more intense rivalry, and especially toward price-based rivalry. The U.S. casino industry has seen enormous competitive activity in recent decades, but most of it has been directed toward new geographic segments and niches (e.g., riverboats, trophy properties, Native American reservations, international expansion, and novel customer groups such as families). Head-to-head rivalry that lowers prices or boosts payouts to customers has been limited.

Mergers and acquisitions can also alter the nature of rivalry in an industry. In the global petroleum industry, for instance, mergers of Exxon and Mobil, British Petroleum and Amoco, Chevron and Texaco, and Conoco and Phillips have raised concerns among consumer advocates and some policymakers about the possibility of muted competition. Technological innovation is another factor in reshaping rivalry. In the retail brokerage industry, the advent of the Internet triggered far more intense competition on commissions and fees than in the past.

Implications for Strategy

Understanding the forces that shape competition in an industry is the starting point for developing strategy. It reveals the most salient aspects of the competitive environment and the crucial constraints to overall profitability. It highlights the industry changes that pose the greatest threats and opportunities.

Industry structure also provides a baseline for sizing up a company's strengths and weaknesses: where does the company stand versus buyers, suppliers, entrants, rivals, and substitutes? Most importantly, an understanding of industry structure guides managers toward possibilities for strategic action, including (1) positioning the company vis-à-vis the current competitive forces; (2) anticipating shifts in the forces and exploiting them; and (3) shaping the balance of forces to create a new more favorable structure or one that favors the company.

Positioning the Company

Industry structure reveals insights for positioning. Here, strategy can be viewed as building defenses against the competitive forces or as finding a position in an industry where the forces are weakest.

Consider, for instance, the position of PACCAR in the market for heavy trucks. The heavy-truck industry is structurally challenging. Many buyers are large fleets or leasing companies, with a keen interest and the clout to drive down the price for one of their largest purchases. Many trucks are built to regulated standards and offer similar features, so price competition is rampant. Capital intensity causes rivalry among competitors to be fierce, especially during the cyclical downturns in demand.

Unions exercise considerable supplier power. Though there are few direct substitutes for an 18-wheeler, truck buyers face important substitutes for their service, such as cargo delivery by rail.

In this tough setting, PACCAR, a Bellevue, Washington-based company with about 20% of the North American heavy-truck market, has chosen to concentrate on owner-operators: drivers who own their own trucks and contract directly with shippers or are subcontractors to larger trucking companies. Such individuals have limited bargaining power and take great pride in and live for long stretches in their trucks. Owner-operators tend to be willing to pay more for amenities and customization. PACCAR has invested heavily to develop an array of special features: luxurious sleeper cabins, plush leather seats, noise-insulated cabins, sleek exterior styling, and so on. At the company's extensive network of dealers, prospective buyers use software to select among thousands of options. Orders are conveyed to PACCAR's factories, where customized trucks are built to order, not to stock, and delivered in six to eight weeks. Customers pay PACCAR a 10% premium for its trucks, and not only because its Kenworth- and Peterbilt-branded trucks are considered status symbols at truck stops. PACCAR's trucks also have aerodynamic designs that reduce fuel consumption, and they maintain their resale value better than other trucks. PACCAR's roadside assistance program and its IT-supported system for distributing spare parts reduce the time a truck is out of service (a crucial consideration for an owner-operator). PACCAR complements its other activities by helping owner-operators with financing their trucks.

PACCAR illustrates the essence of positioning a company within a given industry structure. PACCAR has found a portion of its industry where competitive forces are weaker—where it can avoid buyer power and price-based rivalry. And it has tailored every single internal function to cope well with the forces in that part of the industry. As a result, PACCAR has been profitable for 68 straight years and has earned a long-run return on equity above 20%.

Exploiting Industry Change

Industry change brings with it the opportunity to spot and claim promising strategic new positions. The rise of Dell's direct-distribution model in the personal computer industry, for example, exploited a number of industry trends. An increase in customer knowledge of PCs led more corporate customers to want unique specifications and not require third-party resellers. Increasing reliance on standardized and modular inputs, coupled with declining component prices, opened an opportunity for Dell to build customized computers to order.

To tap the opportunities posed by industry change, a strategist needs a sophisticated understanding of competitive forces and their underpinnings. Consider, for instance, the evolution of the music industry during the past decade. With the advent of the Internet and digital distribution of music, some analysts predicted the birth of thousands of music labels (that is, record companies that develop artists and bring their music to market). This, the analysts argued, would break a pattern that had held since Edison invented the phonograph: between three and six major record companies have always dominated the industry. The Internet would remove distribution of music as a barrier to entry, unleashing a flood of new players.

A careful analysis, however, would have revealed that physical distribution was not the crucial barrier to entry. Rather, entry was barred by other benefits that large music labels enjoyed. Large labels could pool the risks of developing new artists over many bets, cushioning themselves from the impact of inevitable failures. Even more important, they had advantages in breaking through the clutter and getting their new artists heard. To do so, they could promise radio stations and record stores access to well-known artists in exchange for promotion of new artists. New entrants would find this nearly impossible to match. Since digital distribution became a significant issue, new music

labels have been rare, and the number of major record companies has *declined*—from six in 1997 to four today.

This is not to say that the music industry is structurally unchanged by digital distribution. Piracy and unauthorized downloading created illegal but potent substitutes. The labels tried for years to develop technical platforms for digital distribution themselves, but major companies hesitated to sell their music through a platform owned by a rival. Into this vacuum stepped Apple with its iTunes music store, launched in 2003. iTunes and its recent imitators have become a potentially powerful channel.

When industries are in flux, the framework for analyzing industry structure can not only point a company toward promising positions within its existing industry but can also help the company weigh diversification into other industries. The framework provides a road map for answering the extremely difficult question inherent in diversification decisions: “What is the potential of this business?” Using the framework, creative strategists may be able to spot an industry with a good future before this good future is reflected in the prices of acquisition candidates. Industry-structure analysis may also reveal industries that are not necessarily attractive for the average entrant, but where the company itself has reason to believe that it can surmount entry barriers at lower cost than most firms or has a unique ability to cope with the competitive forces there.

Shaping Industry Structure

Exploiting structural change is recognizing, and reacting to, the inevitable. But companies also have the ability to *shape* industry structure. A company can lead its industry toward new ways of competing that alter the five forces for the better. As rivals follow, the entire industry can be transformed. In the process, many industry participants may benefit. Yet the innovator may benefit more by shifting competition in directions where it can excel.

All of the competitive forces are subject to influence. To neutralize supplier power, for example, companies in an industry may establish clear standards for producing inputs, sponsor second-source suppliers, or backward-integrate into production of some inputs. To counter customer power, companies may enhance services that also raise switching costs. Product or service features can be designed that open up more distance from substitutes or establish weapons other than price as the basis for competition. To scare off entrants, incumbents can raise the fixed cost of competing—for instance, by escalating their R&D or marketing expenditures.

As an example of shaping industry structure, consider the long-running efforts of Intel in the market for computer microprocessors. Intel’s immediate customers are computer makers such as Dell, Hewlett-Packard, and Lenovo. Over the years, however, it has spent billions of dollars on its “Intel Inside” advertising campaign focused on computer users—its customers’ customers. This has created brand loyalty to Intel’s microprocessors among consumers, and the loyalty makes it harder for PC makers to switch to rival chip producers like AMD. In selling microprocessors, Intel has also maintained what it calls a “level playing field”: all PC makers, regardless of size, buy microprocessors from Intel at the same price, with no volume discounts. This makes entry easier for PC makers and controls the growth of customer power. By investing enormous sums in R&D and fabrication plants and by making its own products obsolete quickly, Intel has made entry into microprocessors very costly and has made performance, not just price, an important dimension of rivalry. Performance-based rivalry tends to favor large competitors like Intel with the greatest ability to invest in performance improvements. Nevertheless, rival AMD has gained ground as Intel’s execution has slipped.

Sysco, the leading food service distributor in North America, offers another revealing example. Food service distributors purchase food and related items from food processors and farmers. They then deliver them to restaurants, cafeterias, schools, and other food service institutions. With low barriers to entry, the industry has historically been highly fragmented, with numerous local competitors. Rivals try to cultivate customer relationships, but buyers are price sensitive because food represents a large share of costs. Buyers can also choose the substitute approaches of buying direct or using retail sources. Food suppliers wield bargaining power: they are often large, and they own strong brand names that food preparers and consumers recognize. Average profitability in the industry has been modest.

Sysco recognized that, with its size and national reach, it might change this state of affairs. It led moves to introduce private-label distributor brands, mitigating supplier power. It emphasized value-added services such as credit, menu planning, and inventory management to shift rivalry away from just price. These moves, together with stepped-up investments in information technology and regional distribution centers, substantially raised the bar for new entrants while making the substitutes less attractive. Not surprisingly, the industry has been consolidating, and industry profitability appears to be rising.

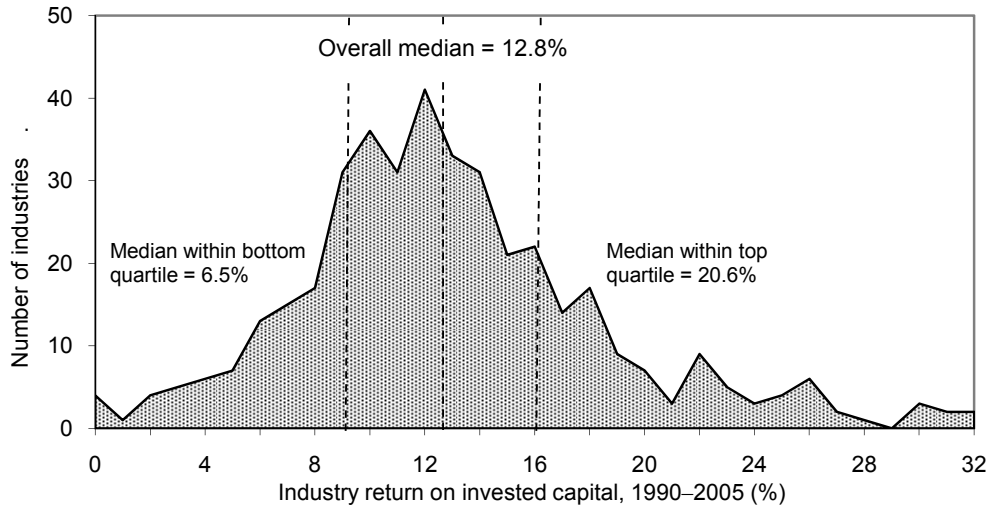
Industry leaders have a special responsibility for improving industry structure. Doing so often requires resources, credibility, and clout that only large players possess. Moreover, an improved industry structure is partly a “public good”: it may benefit every firm in the industry, not just the company that initiated the improvement. Often, only a significant firm in an industry has enough motivation to invest for the common good, for leaders are likely to benefit the most from industry improvement. A common error among industry leaders is to focus more on preserving the status quo or improving one’s own position than on leading the industry in favorable directions.

There is also a dark side to shaping industry structure that is equally important to understand. Ill-advised changes in practices and ways of competing can undermine industry structure instead of improving it. Facing pressures to gain market share or enamored with innovation for its own sake, managers can spark new kinds of competition that no incumbent can win. When taking actions to improve their own company’s competitive advantage, industry leaders should ask whether they are setting in motion dynamics that will undermine industry structure in the long run. In the early days of the personal computer industry, for instance, IBM tried to make up for its late entry by offering an open architecture that would set industry standards and attract complementary makers of application software and peripherals. In the process, it gave ownership of the critical pieces of the PC—the operating system and the microprocessor—to Microsoft and Intel. By standardizing PCs, it encouraged price-based rivalry. Consequently, IBM became the temporarily dominant firm in an industry with an enduringly unattractive structure.

Defining Competition

Numerous authorities have stressed the need to look beyond product to function in defining a business, to look beyond national boundaries to potential international competition, and to see beyond the ranks of one’s competitors today to those that may become competitors tomorrow. Inherent in these exhortations is the fear of overlooking latent sources of competition that someday may threaten the industry. Yet the issue is an even bigger one. Many managers concentrate so single-mindedly on their direct antagonists in the fight for market share that they fail to realize that they are also competing with their customers and their suppliers for bargaining power and they are also battling the subtle threat of substitute products.

The broad view of competitive forces offered here is an antidote for such thinking. A strategist who sees rivalry as extending well beyond existing competitors will detect wider competitive threats. A strategist who understands the structural underpinnings of each competitive force will be equipped to analyze these threats. At the same time, industry-structure thinking reveals differences in customers, suppliers, substitutes, potential entrants, and rivals that demark distinct competitive arenas in which distinct strategies are needed, and sometimes an entirely different industry. In a world of more open competition and relentless change, it is more important than ever to think structurally about competition.

Exhibit 1 Histogram of Return on Invested Capital among U.S. Industries

Source: Standard & Poor's Compustat, author's calculations.

Note: Return on invested capital is calculated as earnings before interest and taxes divided by the sum of long-term debt, total equity, and minority interest.