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Industry Analysis: The Fundamentals

When a management with a reputation for brilliance tackles a business with a reputation for poor fundamental economics, it is the reputation of the business that remains intact.

—Warren Buffett, Chairman,
Berkshire Hathaway

The reinsurance business has the defect of being too attractive-looking to new entrants for its own good and will therefore always tend to be the opposite of, say, the old business of gathering and rendering dead horses that always tended to contain few and prosperous participants.

—Charles T. Munger, Chairman,
Wesco Financial Corp.

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INTRODUCTION AND OBJECTIVES

In this chapter and the next we explore the external environment of the firm. In Chapter 1 we observed that profound understanding of the competitive environment is a critical ingredient of a successful strategy. We further noted that business strategy is essentially a quest for profit. The primary task for this chapter is to identify the sources of profit in the external environment. The firm's proximate environment is its industry environment; hence the focus of our environmental analysis will be industry analysis.

Industry analysis is relevant both to corporate-level and business-level strategy.

- Corporate strategy is concerned with deciding which industries the firm should be engaged in and how it should allocate its resources among them. Such decisions require assessment of the attractiveness of different industries in terms of their profit potential. The main objective of this chapter is to understand how the competitive structure of an industry determines its profitability.
- Business strategy is concerned with establishing competitive advantage. By analyzing customer needs and preferences and the ways in which firms compete to serve customers we identify the general sources of competitive advantage in an industry – what we call *key success factors*.

By the time you have completed this chapter you will be able to:

- Identify the main structural features of an industry that influence competition and profitability.
- Use industry analysis to explain why in some industries competition is more intense and profitability lower than in other industries.
- Use evidence on structural trends within industries to forecast changes in competition and profitability in the future.
- Develop strategies to influence industry structure in order to improve industry profitability.
- Analyze competition and customer requirements in order to identify opportunities for competitive advantage within an industry (*key success factors*).

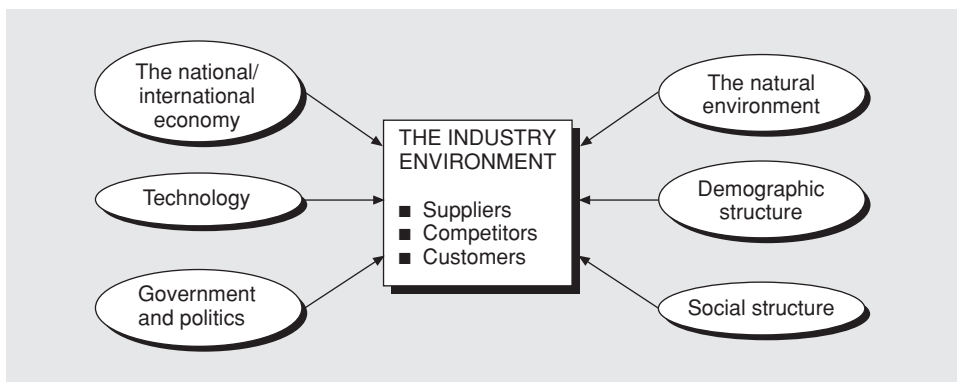
FROM ENVIRONMENTAL ANALYSIS TO INDUSTRY ANALYSIS

The business environment of the firm consists of all the external influences that affect its decisions and performance. Given the vast number and range of external influences, how can managers hope to monitor, let alone analyze, environmental conditions? The starting point is some kind of system or framework for organizing information. For example, environmental influences can be classified by *source* (e.g. into political, economic, social, and technological factors (“PEST analysis”)) or by *proximity* (the “micro-environment” or “task environment” can be distinguished from the wider influences that form the “macro-environment”).¹ Though systematic, continuous scanning of the whole range of external influences might seem desirable, such extensive environmental analysis is unlikely to be cost effective and creates information overload.

The prerequisite for effective environmental analysis is to distinguish the vital from the merely important. To do this, let’s return to first principles. For the firm to make profit it must create value for customers. Hence, it must understand its customers. Second, in creating value, the firm acquires goods and services from suppliers. Hence, it must understand its suppliers and how to form business relationships with them. Third, the ability to generate profitability from value-creating activity depends on the intensity of competition among firms that vie for the same value-creating opportunities. Hence, the firm must understand competition. Thus, the core of the firm’s business environment is formed by its relationships with three sets of players: customers, suppliers, and competitors. This is its industry environment.

This is not to say that macro-level factors such as general economic trends, changes in demographic structure, or social and political trends are unimportant to strategy analysis. These factors may be critical determinants of the threats and opportunities a company will face in the future. The key issue is how these more general environmental factors affect the firm’s industry environment (Figure 3.1). Consider the threat of global warming. For most companies this is not an important strategic issue (at least, not for the next few hundred years). For the producers of automobiles, however, the implications of global warming for taxes on gasoline and restrictions on

FIGURE 3.1 From environmental analysis to industry analysis



burning fossil fuels mean that global warming is a vital issue. However, to analyze the strategic implications of global warming, the automobile manufacturers need to trace its implications for their industry environment:

- What will be the impact on demand? Will consumers favor more fuel-efficient cars, or will there be a shift from gasoline-powered to electrically powered vehicles?
- Will there be substitution of public transportation for private transportation?
- Will there be new entry by manufacturers of electric vehicles into the car industry?
- Will the heavy R&D costs associated with adapting cars to the new environmental challenge cause the industry to consolidate?

THE DETERMINANTS OF INDUSTRY PROFIT: DEMAND AND COMPETITION

If the purpose of strategy is to help a company to survive and make money, the starting point for industry analysis is a simple question: What determines the level of profit in an industry?

As already noted, business is about the creation of value for the customer either by production (transforming inputs into outputs) or commerce (arbitrage). Value is created when the price the customer is willing to pay for a product exceeds the costs incurred by the firm. But value creation does not translate directly into profit. The surplus of value over cost is distributed between customers and producers by the forces of competition. The stronger is competition among producers, the more of the surplus is received by customers in *consumer surplus* (the difference between the price they actually pay and the maximum price they would have been willing to pay) and the less is the surplus received by producers (as *producer surplus* or *economic rent*). A single supplier of bottled water at an all-night rave can charge a price that fully exploits the dancers' thirst. If there are many suppliers of bottled water, then, in the absence of collusion, competition causes the price of bottled water to fall toward the cost of supplying it.

The surplus earned by producers over and above the minimum costs of production is not entirely captured in profits. Where an industry has powerful suppliers – monopolistic suppliers of components or employees united by a strong labor union – a substantial part of the surplus may be appropriated by these suppliers (the profits of suppliers or premium wages of union members).

The profits earned by the firms in an industry are thus determined by three factors:

- The value of the product to customers.
- The intensity of competition.
- The bargaining power of the producers relative to their suppliers.

Industry analysis brings all three factors into a single analytic framework.

ANALYZING INDUSTRY ATTRACTIVENESS

Tables 3.1 and 3.2 show the profitability of different US industries. Some industries (such as tobacco, pharmaceuticals, and medical equipment) consistently earn high rates of profit; others (such as iron and steel, nonferrous metals, airlines, and basic building materials) have failed to cover their cost of capital. The basic premise that underlies industry analysis is that the level of industry profitability is neither random nor the result of entirely industry-specific influences – it is determined by the systematic influences of the industry's structure. The US pharmaceutical industry and the US steel industry not only supply very different products, they also have very different structures, which make one highly profitable and the other a nightmare of

TABLE 3.1 The Profitability of US Industries, 1999–2002

INDUSTRY	MEDIAN ROE 1999–2002 (%)	INDUSTRY	MEDIAN ROE 1999–2002 (%)
Pharmaceuticals	26.8	Trucking, Truck Leasing	10.8
Tobacco	22.0	Energy	10.8
Household and Personal Products	20.5	General Merchandisers	10.5
Food Consumer Products	22.8	Utilities: Gas and Electric	10.5
Diversified Financials	18.5	Food and Drug Stores	10.3
Medical Products and Equipment	18.8	Industrial and Farm Equipment	10.0
Beverages	17.3	Wholesalers: Food and Grocery	10.0
Securities	16.5	Motor Vehicles and Parts	9.8
Scientific, Photographic, and Control Equipment	16.3	Home Equipment, Furnishings	9.5
Saving Institutions	16.0	Railroads	9.0
Commercial Banks	15.8	Mail, Package, and Freight Delivery	8.8
Food Services	15.5	Pipelines	8.5
Engineering, Construction	14.3	Hotels, Casinos, Resorts	8.0
Publishing, Printing	14.3	Insurance: Life and Health	7.6
Petroleum Refining	14.3	Real Estate	7.3
Apparel	13.5	Building Materials, Glass	7.0
Computer Software	13.5	Temporary Help	6.5
Mining, Crude-Oil Production	13.5	Metals	6.0
Computer and Data Services	13.3	Semiconductors and Other Electronic Components	5.8
Furniture	13.3	Insurance: Property and Casualty	5.3
Electronics, Electrical Equipment	12.8	Food Production	5.3
Chemicals	12.8	Telecommunications	3.5
Specialty Retailers	12.3	Forest and Paper Products	3.5
Automotive Retailing and Services	11.8	Network and Other Communications	
Computers, Office Equipment	11.5	Equipment	(4.0)
Healthcare	11.0	Airlines	(34.8)

Source: Fortune 1000 by Industry.

TABLE 3.2 The Profitability of US Industries Measured by EVA and Return on Assets, 1986–97

INDUSTRY	EVA/CE ¹ (%)	ROA ² (%)	INDUSTRY	EVA/CE (%)	ROA (%)
Tobacco	9.4	14.4	Broadcasting and Publishing	(1.5)	6.0
Computer Software and Services	5.9	10.4	Cars and Trucks	(1.5)	2.2
Entertainment	4.4	8.4	Healthcare Services	(1.7)	3.3
Personnel-Supply Services	4.0	–	Machine Tools and Hand Tools	(1.7)	6.0
Personal Care	2.8	8.0	Appliances and Home Furnishings	(1.9)	3.2
Medical Products	2.7	9.5	Transportation Services	(2.0)	3.2
Food Processing	2.5	8.5	Printing and Advertising	(2.0)	2.3
Food Retailing	2.5	6.5	Telephone Equipment and Services	(2.1)	7.0
IT Consulting Services	2.1	6.5	Plastics and Products	(2.6)	5.3
Apparel	1.1	10.7	General Engineering	(3.0)	5.2
Games and Toys	0.8	–	Computers and Peripherals	(3.1)	3.1
Packaging	0.8	5.0	Electrical Products	(3.3)	4.6
Drugs and Research Chemicals	0.7	7.6	Aerospace and Defense	(3.3)	4.8
Beverages	0.3	8.0	Railroads	(3.4)	3.8
Beverages	0.2	5.6	Hotels and Motels	(3.6)	–
Eating Places	0.1	6.9	Machinery	(4.1)	–
Car Parts and Equipment	(0.0)	4.6	Instruments	(4.2)	5.1
Textiles	(0.1)	7.4	Airlines	(4.2)	1.0
Fashion Retailing	(0.4)	9.3	Construction and Engineering	(4.6)	–
Food Distribution	(0.6)	–	Oil and Gas	(4.6)	2.5
Building Materials	(0.6)	5.6	Steel	(6.4)	2.3
Drug Distribution	(0.7)	5.5	Cable Television	(7.2)	(3.3)
Metals	(1.0)	–	Electronics	(9.2)	3.5
Telephone Companies	(1.2)	4.6	Petroleum Services	(9.8)	(0.6)
Discount Retailing	(1.2)	6.4	Average	(1.1)	5.6
Semiconductors and Components	(1.3)	6.0			
Paper and Products	(1.5)	5.2			

Notes:

¹ EVA/CE measures the ratio of Economic Value Added (as estimated by Stern Stewart) to capital employed for the companies in each industry.

² ROA measures the percentage of net income to total assets for each industry.

Source: G. Hawawini, V. Subramanian, and P. Verdin, "Is Firms' Profitability Driven by Industry or Firm-Specific Factors? A New Look at the Evidence," *Strategic Management Journal* 24 (January 2003): 1–16.

price competition and weak margins. The pharmaceutical industry produces highly differentiated products with price-insensitive consumers and each new product receives monopoly privileges in the form of 17-year patents. The steel industry produces a commodity product with declining demand, strong substitute competition, massive overcapacity, and is squeezed on one side by powerful customers and on the other by strong labor unions. Conversely, the US steel industry and the US airline industry supply very different products, but they share a number of similarities

STRATEGY CAPSULE 3.1 Chewing Tobacco, Sausage Skins, and Slot Machines: In Praise of Niche Markets

UST Inc. (formerly US Tobacco) has been the most profitable company in the S&P500 over the past 10 years with return on equity frequently topping 100%. Even in 2002, when an antitrust litigation resulted in a \$1.2 billion charge against earnings, UST succeeded in earning a return on capital employed of 38%. What's the secret of UST's success? It's simple – it controls 78% of the US market for “smokeless tobacco” (chewing tobacco and snuff), with brands such as Skoal, Copenhagen, Long Cut, and Red Seal. Despite its association with a bygone era of cowboys and rural poverty, chewing tobacco has been a growth market over the past two decades with a surprisingly large number of young consumers. UST's long-established brands, its distribution through tens of thousands of small retail outlets, and the unwillingness of major tobacco companies to enter this market (due to the poor image and social unacceptability of the product) have made UST's market position unassailable. Federal controls on the advertising of smokeless tobacco products have buttressed UST's market position by making it more difficult for would-be entrants to establish their brands.

Devro plc is based in the Scottish village of Moodiesburn. It supplies collagen sausage skins (“casings”) worldwide. “From the British ‘Banger’ to the Chinese Lap Cheong, from the French Merguez to the South American Chourizo, Devro has a casing to suit all product types.” Although badly hit by scares over “mad cow” disease and foot-and-mouth disease, Devro's 60% of the world market for collagen casings including 94% of the UK market, 83% of the Australian market and 40% of the US market has allowed it to ride the difficult market conditions of the late 1990s.

United Game Technology (UGT) is the world's dominant manufacturer of slot machines for casinos and other locations where gambling is permitted. With a continuous flow of new gaming machines – 2002 product launches included Elvira: Mistress of the Dark, Hundred Play Draw Poker, and Ms Little Green Men – UGT's US market share exceeded 70%, and it established market leadership in a number of European countries, including the UK. With leadership in mechanical and electronic gaming technologies, a raft of patents, and close relations with the casino companies supported by its policy of leasing rather than selling machines, UGT market leadership appeared unchallengeable. During 1999 to 2002, UGT earned an average return on equity of 61%.

Sources: www.ustinc.com, www.devro.plc.uk, www.igt.com.

of industry structure which result in both earning dismal rates of profit. Some of the most attractive industries are those which supply a niche product – the limited markets for such products often mean dominance by just one or two companies (see Strategy Capsule 3.1).

The underlying theory of how industry structure drives competitive behavior and determines industry profitability is provided by industrial organization (IO) economics. The two reference points are the *theory of monopoly* and the *theory of perfect competition*, which form two ends of the spectrum of industry structures. A single firm protected by barriers to the entry of new firms forms a monopoly in which it can appropriate in profit the full amount of the value it creates. By contrast, many firms supplying an identical product with no restrictions on entry or exit constitute perfect competition: the rate of profit falls to a level that just covers firms' cost of capital. In the real world, industries fall between these two extremes. The US market

TABLE 3.3 The Spectrum of Industry Structures

	<i>Perfect Competition</i>	<i>Oligopoly</i>	<i>Duopoly</i>	<i>Monopoly</i>
<i>Concentration</i>	Many firms	A few firms	Two firms	One firm
<i>Entry and Exit Barriers</i>	No barriers	Significant barriers		High barriers
<i>Product Differentiation</i>	Homogeneous product (Commodity)	Potential for product differentiation		
<i>Information Availability</i>	No impediments to information flow	Imperfect availability of information		

for chewing tobacco is close to being a monopoly; the Chicago grain markets are close to being perfectly competitive. Most manufacturing industries and many service industries tend to be *oligopolies*: they are dominated by a small number of major companies. Table 3.3 identifies some key points on the spectrum. By examining the principal structural features and their interactions for any particular industry, it is possible to predict the type of competitive behavior likely to emerge and the resulting level of profitability.

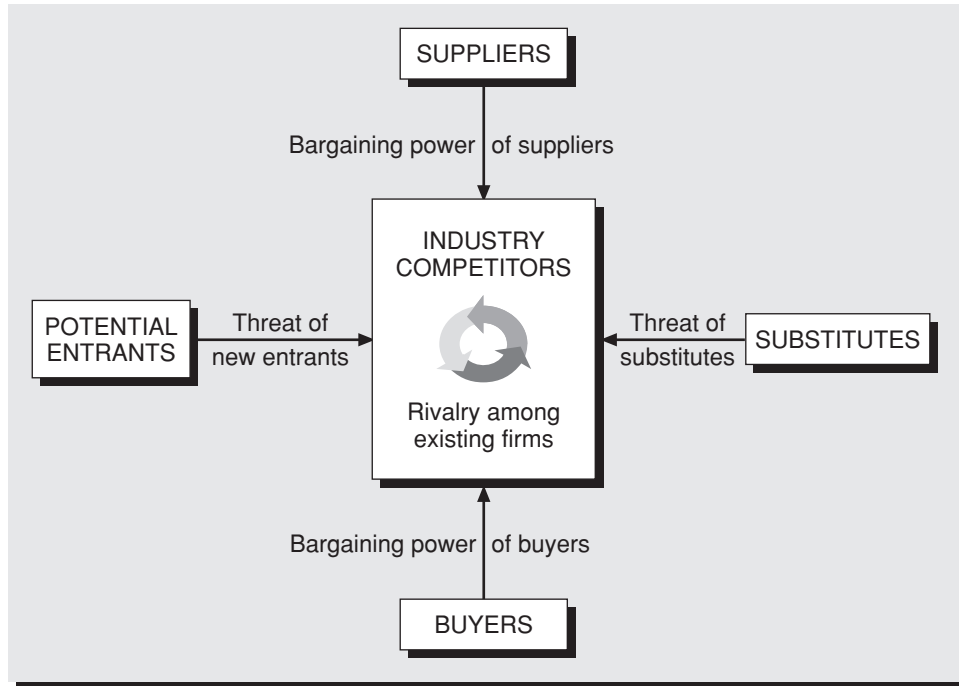
Porter's Five Forces of Competition Framework

Table 3.3 identifies four structural variables influencing competition and profitability. In practice, there are many features of an industry that determine the intensity of competition and the level of profitability. A helpful, widely used framework for classifying and analyzing these factors is the one developed by Michael Porter of Harvard Business School.² Porter's Five Forces of Competition framework views the profitability of an industry (as indicated by its rate of return on capital relative to its cost of capital) as determined by five sources of competitive pressure. These five forces of competition include three sources of "horizontal" competition: competition from substitutes, competition from entrants, and competition from established rivals; and two sources of "vertical" competition: the bargaining power of suppliers and buyers (see Figure 3.2).

The strength of each of these competitive forces is determined by a number of key structural variables, as shown in Figure 3.3.

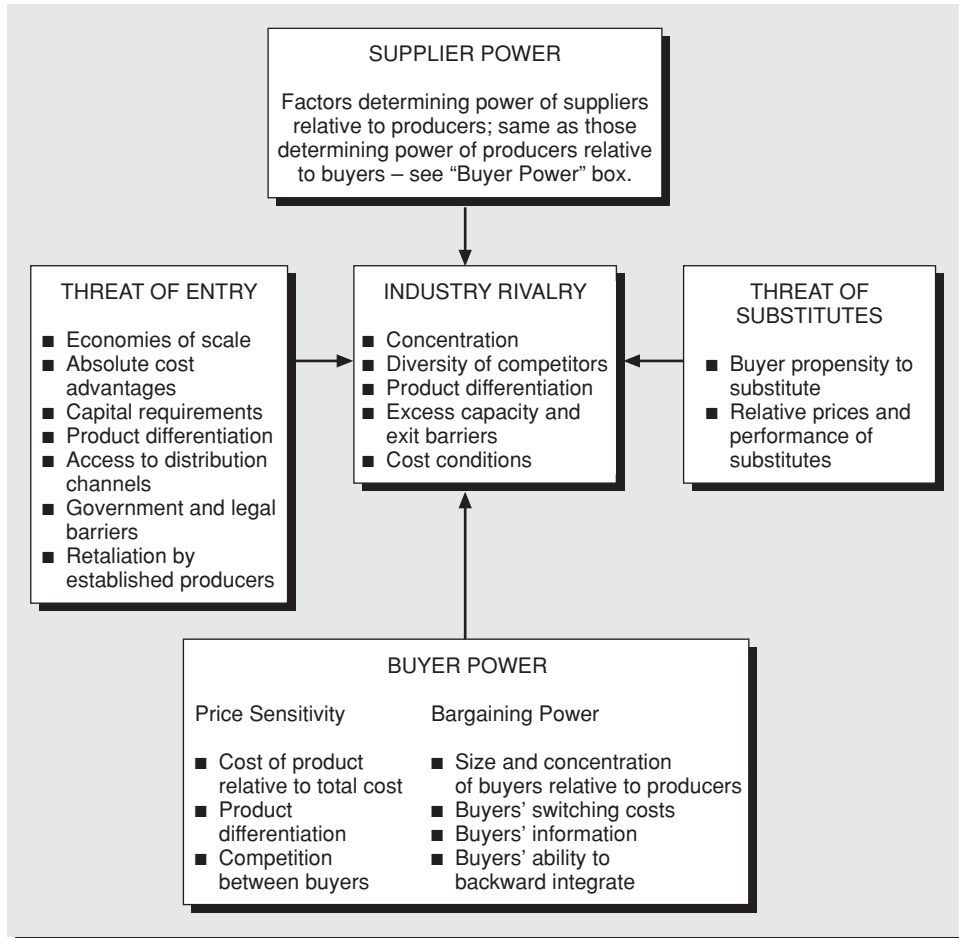
Competition from Substitutes

The price customers are willing to pay for a product depends, in part, on the availability of substitute products. The absence of close substitutes for a product, as in

FIGURE 3.2 Porter's Five Forces of Competition framework

the case of gasoline or cigarettes, means that consumers are comparatively insensitive to price (i.e., demand is inelastic with respect to price). The existence of close substitutes means that customers will switch to substitutes in response to price increases for the product (i.e., demand is elastic with respect to price). E-commerce has provided a new source of substitute competition that has proved devastating for a number of established businesses. The travel agency industry in Europe and North America has been pushed to the brink of ruin by the growth of on-line reservations systems operated by specialists such as Expedia and Travelocity and by the airlines directly.

The extent to which substitutes limit prices and profits depends on the propensity of buyers to substitute between alternatives. This, in turn, is dependent on their price-performance characteristics. If city-center to city-center travel between Washington and New York is 50 minutes quicker by air than by train and the average traveler values time at \$30 an hour, the implication is that the train will be competitive at fares of \$25 below those charged by the airlines. The more complex the needs being fulfilled by the product and the more difficult it is to discern performance differences, the lower the extent of substitution by customers on the basis of price differences. The failure of low-priced imitations of leading perfumes to establish significant market share reflects, in part, consumers' difficulty in recognizing the performance characteristics of different fragrances.

FIGURE 3.3 The structural determinants of the Five Forces of Competition

Threat of Entry

If an industry earns a return on capital in excess of its cost of capital, that industry acts as a magnet to firms outside the industry. Unless the entry of new firms is barred, the rate of profit will fall toward its competitive level. The US bagel industry, for example, faced a flood of new entrants in 1996, which caused a sharp diminution of profit prospects.³ The threat of entry rather than actual entry may be sufficient to ensure that established firms constrain their prices to the competitive level. Only American Airlines offers a direct service between Dallas-Fort Worth and Santa Barbara, California, for example. Yet, American may be unwilling to exploit its monopoly position if other airlines can easily extend their routes to cover the same two cities. An industry where no barriers to entry or exit exist is *contestable*: prices and profits

tend towards the competitive level, regardless of the number of firms within the industry.⁴ Contestability depends on the absence of sunk costs. Sunk costs exist where entry requires investment in industry-specific assets whose value cannot be recovered on exit. An absence of sunk costs makes an industry vulnerable to “hit-and-run” entry whenever established firms raise their prices above the competitive level.

In most industries, however, new entrants cannot enter on equal terms with those of established firms. The size of the advantage of established over entrant firms (in terms of unit costs) measures the height of barriers to entry, which determines the extent to which the industry can, in the long run, enjoy profit above the competitive level. The principal sources of barriers to entry are capital requirements, economies of scale, cost advantages, product differentiation, access to channels of distribution, governmental and legal barriers, and retaliation.

Capital Requirements

The capital costs of getting established in an industry can be so large as to discourage all but the largest companies. The duopoly of Boeing and Airbus in large passenger jets is protected by the huge capital costs of establishing R&D, production, and service facilities for supplying these planes. Similarly with the business of launching commercial satellites: the costs of developing rockets and launch facilities make new entry highly unlikely. In other industries, entry costs can be modest. One reason why the e-commerce boom of the late 1990s ended in financial disaster for most participants is that the initial setup costs of new internet-based ventures were typically very low. Across the service sector more generally, startup costs are still such that individual, self-financing entrepreneurs can enter. For example, in the hamburger business, franchise costs for a restaurant are around \$350,000 for a Wendy’s and about \$1 million for a Burger King.⁵

Economies of Scale

In industries that are capital or research or advertising intensive, efficiency requires large-scale operation. The problem for new entrants is that they are faced with the choice of either entering on a small scale and accepting high unit costs, or entering on a large scale and running the risk of underutilized capacity while they build up sales volume. In automobiles, it is generally reckoned that to be a low-cost producer, sales of over four million vehicles a year are necessary. These economies of scale have deterred entry into the industry so that the only new entrants in recent decades have been state-supported companies (e.g., Proton of Malaysia and Maruti of India) or companies that gambled that low input costs would offset their scale inefficiency (e.g., Samsung and Ssangyong of Korea, both of which were in acute difficulty by 2000). The main source of scale economies is new product development costs. Thus, developing and launching a new model of car typically costs over \$1.5 billion. Similarly in passenger jets, the \$20 billion required to develop Airbus’s proposed A380 super-jumbo means that sales of over 800 planes are necessary to break even. Once Airbus had committed to the project, then Boeing was effectively excluded from the super-jumbo segment of the market.

Absolute Cost Advantages

Apart from economies of scale, established firms may have a cost advantage over entrants simply because they entered earlier. Absolute cost advantages often result from the acquisition of low-cost sources of raw materials. Saudi Aramco's access to the world's biggest and most accessible oil reserves give it an unassailable cost advantage over Shell, Exxon Mobil, and the other western majors whose production costs per barrel are at least three times those of Saudi Aramco. Absolute cost advantages may also result from economies of learning. Sharp's cost advantage in flat screen TVs results from its early entry into this market and its ability to move down the learning curve faster than Sony or Philips.

Product Differentiation

In an industry where products are differentiated, established firms possess the advantages of brand recognition and customer loyalty. The percentage of US consumers loyal to a single brand varies from under 30 percent in batteries, canned vegetables, and garbage bags, up to 61 percent in toothpaste, 65 percent in mayonnaise, and 71 percent in cigarettes.⁶ New entrants to such markets must spend disproportionately heavily on advertising and promotion to gain levels of brand awareness and brand goodwill similar to that of established companies. One study found that, compared to early entrants, late entrants into consumer goods markets incurred additional advertising and promotional costs amounting to 2.12 percent of sales revenue.⁷ Alternatively, the new entrant can accept a niche position in the market or can seek to compete by cutting price.

Access to Channels of Distribution

Whereas lack of brand awareness among consumers acts as a barrier to entry to new suppliers of consumer goods, a more immediate barrier for the new company is likely to be gaining distribution. Limited capacity within distribution channels (e.g., shelf space), risk aversion by retailers, and the fixed costs associated with carrying an additional product result in retailers being reluctant to carry a new manufacturer's product. The battle for supermarket shelf space between the major food processors (typically involving lump-sum payments to retail chains in order to reserve shelf space) means that new entrants scarcely get a look in.

Governmental and Legal Barriers

Some economists (notably those of the Chicago School) claim that the only effective barriers to entry are those created by government. In taxicabs, banking, telecommunications, and broadcasting, entry usually requires the granting of a license by a public authority. From medieval times to the present day, companies and favored individuals have benefited from governments granting them an exclusive right to ply a particular trade or offer a particular service. In knowledge-intensive industries, patents, copyrights, and other legally protected forms of intellectual property are major

barriers to entry. Xerox Corporation's monopolization of the plain-paper copier industry until the late 1970s was protected by a wall of over 2,000 patents relating to its xerography process. Regulatory requirements and environmental and safety standards often put new entrants at a disadvantage to established firms, because compliance costs tend to weigh more heavily on newcomers.

Retaliation

Barriers to entry also depend on the entrants' expectations as to possible retaliation by established firms. Retaliation against a new entrant may take the form of aggressive price-cutting, increased advertising, sales promotion, or litigation. The major airlines have a long history of retaliation against low-cost entrants. Southwest and other budget airlines have alleged that selective price cuts by American and other major airlines amounted to predatory pricing designed to prevent its entry into new routes.⁸ To avoid retaliation by incumbents, new entrants may seek initial small scale entry into less visible market segments. When Toyota, Nissan, and Honda first entered the US auto market, they targeted the small car segments partly because this was a segment that had been written off by the Detroit Big Three as inherently unprofitable.⁹

The Effectiveness of Barriers to Entry

Empirical research shows industries protected by high entry barriers tend to earn above average rates of profit¹⁰ and that capital requirements and advertising are particularly important impediments to entry to sources of increased profitability.¹¹

Whether barriers to entry are effective in deterring potential entrants depends on the resources and capabilities that potential entrants possess. Barriers that are effective against new companies may be ineffective against established firms that are diversifying from other industries. George Yip found no evidence that entry barriers deterred new entry.¹² Some entrants possessed resources that allowed them to surmount barriers and compete against incumbent firms using similar strategies. Thus, Mars used its strong position in confectionery to enter the ice cream market, while Virgin has used its brand name to enter a wide range of industries from airlines to telecommunications. Other companies circumvented entry barriers by adopting innovative strategies. During the late 1990s, a host of established consumer products companies from banks to bookstores faced new competition from e-commerce startups that used the internet to by-pass conventional distribution channels.

Rivalry between Established Competitors

For most industries, the major determinant of the overall state of competition and the general level of profitability is competition among the firms within the industry. In some industries, firms compete aggressively – sometimes to the extent that prices are pushed below the level of costs and industry-wide losses are incurred. In others, price competition is muted and rivalry focuses on advertising, innovation, and other

nonprice dimensions. Six factors play an important role in determining the nature and intensity of competition between established firms: concentration, the diversity of competitors, product differentiation, excess capacity, exit barriers, and cost conditions.

Concentration

Seller concentration refers to the number and size distribution of firms competing within a market. It is most commonly measured by the concentration ratio: the combined market share of the leading producers. For example, the four-firm concentration ratio ($CR4$) is the market share of the four largest producers. A market dominated by a single firm (e.g., Microsoft in PC operating systems, or UST in the US smokeless tobacco market) displays little competition and the dominant firm can exercise considerable discretion over the prices it charges. Where a market is dominated by a small group of leading companies (an oligopoly), price competition may also be restrained, either by outright collusion, or more commonly through “parallelism” of pricing decisions.¹³ Thus, in markets dominated by two companies, such as alkaline batteries (Duracell and Eveready), color film (Kodak and Fuji), and soft drinks (Coke and Pepsi), prices tend to be similar and competition focuses on advertising, promotion, and product development. As the number of firms supplying a market increases, coordination of prices becomes more difficult, and the likelihood that one firm will initiate price-cutting increases. However, despite the common observation that the elimination of a competitor typically reduces price competition, while the entry of a new competitor typically stimulates it, systematic evidence of the impact of seller concentration on profitability is surprisingly weak. Richard Schmalensee concluded that: “The relation, if any, between seller concentration and profitability is weak statistically and the estimated effect is usually small.”¹⁴

Diversity of Competitors

The extent to which a group of firms can avoid price competition in favor of collusive pricing practices depends upon how similar they are in terms of origins, objectives, costs, and strategies. The cozy atmosphere of the US auto industry prior to the advent of import competition was greatly assisted by the similarities of the companies in terms of cost structures, strategies, and top management mindsets. The intense competition that affects the car markets of Europe and North America is partly due to the different national origins, costs, strategies, and management styles of the competing firms. Similarly, the key challenge faced by OPEC is agreeing and enforcing output quotas among member countries that are sharply different in terms of objectives, production costs, politics, and religion.

Product Differentiation

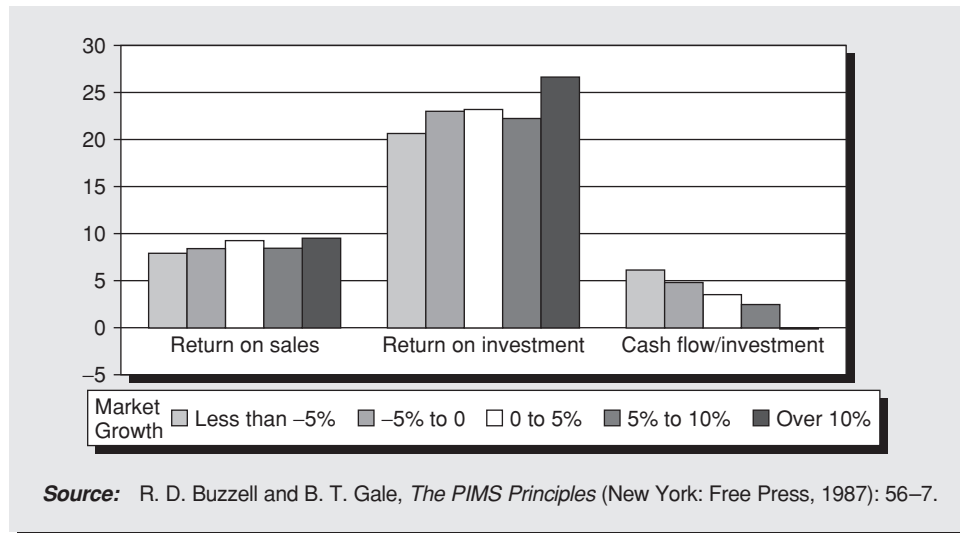
The more similar the offerings among rival firms, the more willing customers are to substitute and the greater the incentive for firms to cut prices to increase sales. Where the products of rival firms are virtually indistinguishable, the product is a

commodity and price is the sole basis for competition. Commodity industries such as agriculture, mining, and petrochemicals tend to be plagued by price wars and low profits. By contrast, in industries where products are highly differentiated (perfumes, pharmaceuticals, restaurants, management consulting services), price competition tends to be weak, even though there may be many firms competing.

Excess Capacity and Exit Barriers

Why does industry profitability tend to fall so drastically during periods of recession? The key is the balance between demand and capacity. Unused capacity encourages firms to offer price cuts to attract new business in order to spread fixed costs over a greater sales volume. Excess capacity may be cyclical (e.g. the boom–bust cycle in the semiconductor industry); it may also be part of a structural problem resulting from overinvestment and declining demand. In these latter situations, the key issue is whether excess capacity will leave the industry. *Barriers to exit* are costs associated with capacity leaving an industry. Where resources are durable and specialized, and where employees are entitled to job protection, barriers to exit may be substantial.¹⁵ Exit barriers in the European oil refining industry resulting from the high costs of dismantling refineries, environmental cleanup, and employee layoffs have resulted in a continuing overhang of excess capacity that has kept profits at a very low level. Conversely, rapid demand growth creates capacity shortages that boost margins. During the latter half of 2003, for instance, bulk cargo shipping rates increased fourfold as a result of increased Chinese demand for iron ore. On average, companies in growing industries earn higher profits than companies in slow growing or declining industries (see Figure 3.4).

FIGURE 3.4 The impact of growth on profitability



Cost Conditions: Scale Economies and the Ratio of Fixed to Variable Costs

When excess capacity causes price competition, how low will prices go? The key factor is cost structure. Where fixed costs are high relative to variable costs, firms will take on marginal business at any price that covers variable costs. The consequences for profitability can be disastrous. Between 2001 and 2003, the total losses of the US airline industry exceeded the cumulative profits earned during the entire previous history of the industry. The willingness of airlines to offer heavily discounted tickets on flights with low bookings reflects the very low variable costs of filling empty seats. The devastating impact of excess capacity on profitability in petrochemicals, tires, steel, and semiconductors is a result of high fixed costs in these businesses and the willingness of firms to accept additional business at any price that covers variable costs.

Scale economies may also encourage companies to compete aggressively on price in order to gain the cost benefits of greater volume. If scale efficiency in the auto industry means producing four million cars a year, a level that is achieved by only six of the nineteen international auto companies, the outcome is a battle for market share as each firm tries to achieve critical mass.¹⁶

Bargaining Power of Buyers

The firms in an industry operate in two types of markets: in the markets for inputs and the markets for outputs. In input markets firms purchase raw materials, components, and financial and labor services. In the markets for outputs firms sell their goods and services to customers (who may be distributors, consumers, or other manufacturers). In both markets the transactions create value for both buyers and sellers. How this value is shared between them in terms of profitability depends on their relative economic power. Let us deal first with output markets. The strength of buying power that firms face from their customers depends on two sets of factors: buyers' price sensitivity and relative bargaining power.

Buyers' Price Sensitivity

The extent to which buyers are sensitive to the prices charged by the firms in an industry depends on four main factors:

- The greater the importance of an item as a proportion of total cost, the more sensitive buyers will be about the price they pay. Beverage manufacturers are highly sensitive to the costs of metal cans because this is one of their largest single cost items. Conversely, most companies are not sensitive to the fees charged by their auditors, since auditing costs are such a small proportion of overall company expenses.
- The less differentiated the products of the supplying industry, the more willing the buyer is to switch suppliers on the basis of price. The manufacturers

of T-shirts, light bulbs, and blank videotapes have much more to fear from Wal-Mart's buying power than have the suppliers of perfumes.

- The more intense the competition among buyers, the greater their eagerness for price reductions from their sellers. As competition in the world automobile industry has intensified, so component suppliers are subject to greater pressures for lower prices, higher quality, and faster delivery.
- The greater the importance of the industry's product to the quality of the buyer's product or service, the less sensitive are buyers to the prices they are charged. The buying power of personal computer manufacturers relative to the manufacturers of microprocessors (Intel, Motorola, Advanced Micro Devices) is limited by the critical importance of these components to the functionality of their product.

Relative Bargaining Power

Bargaining power rests, ultimately, on refusal to deal with the other party. The balance of power between the two parties to a transaction depends on the credibility and effectiveness with which each makes this threat. The key issue is the relative cost that each party sustains as a result of the transaction not being consummated. A second issue is each party's expertise in leveraging its position through gamesmanship. Several factors influence the bargaining power of buyers relative to that of sellers:

- *Size and concentration of buyers relative to suppliers.* The smaller the number of buyers and the bigger their purchases, the greater the cost of losing one. Because of their size, health maintenance organizations (HMOs) can purchase health care from hospitals and doctors at much lower cost than can individual patients.
- *Buyers' information.* The better informed buyers are about suppliers and their prices and costs, the better they are able to bargain. Doctors and lawyers do not normally display the prices they charge, nor do traders in the bazaars of Tangier and Istanbul. Keeping customers ignorant of relative prices is an effective constraint on their buying power. But knowing prices is of little value if the quality of the product is unknown. In the markets for haircuts, interior design, and management consulting, the ability of buyers to bargain over price is limited by uncertainty over the precise attributes of the product they are buying.
- *Ability to integrate vertically.* In refusing to deal with the other party, the alternative to finding another supplier or buyer is to do it yourself. Large food-processing companies such as Heinz and Campbell Soup have reduced their dependence on the manufacturers of metal cans by manufacturing their own. The leading retail chains have increasingly displaced their suppliers' brands with their own-brand products. Backward integration need not necessarily occur – a credible threat may suffice.

TABLE 3.4 The Impact of Unionization on Profitability

	PERCENTAGE OF EMPLOYEES UNIONIZED				
	none	1 to 35%	35 to 60%	60 to 75%	over 75%
ROI (%)	25	24	23	18	19
ROS (%)	10.8	9.0	9.0	7.9	7.9

Source: R. D. Buzzell and B. T. Gale, *The PIMS Principles: Linking Strategy to Performance* (New York: Free Press, 1987): 67.

Empirical evidence points to the tendency for buyer concentration to depress prices and profits in supplying industries.¹⁷ PIMS data show that the larger the average size of customers' purchases and the larger the proportion of customers' total purchases the item represents, the lower the profitability of supplying firms.¹⁸

Bargaining Power of Suppliers

Analysis of the determinants of relative power between the producers in an industry and their suppliers is precisely analogous to analysis of the relationship between producers and their buyers. The only difference is that it is now the firms in the industry that are the buyers and the producers of inputs that are the suppliers. The key issues are the ease with which the firms in the industry can switch between different input suppliers and the relative bargaining power of each party.

Because raw materials, semi-finished products, and components are often commodities supplied by small companies to large manufacturing companies, their suppliers usually lack bargaining power. Hence, commodity suppliers often seek to boost their bargaining power through cartelization (e.g., OPEC, the International Coffee Organization, and farmers' marketing cooperatives). A similar logic explains labor unions. Conversely, the suppliers of complex, technically sophisticated components may be able to exert considerable bargaining power. The supplier power of Intel in microprocessors, Microsoft in operating systems, Sharp in flat screens, and Seagate in disk drives has been a powerful factor depressing the profitability of the PC manufacturers. Forward integration by suppliers into a customer industry increases their supplier power and depresses profitability in the customer industry.¹⁹

Labor unions are important sources of supplier power. Where an industry has a high percentage of its employees unionized – as in steel, airlines and automobiles – profitability is reduced (see Table 3.4).

APPLYING INDUSTRY ANALYSIS

Once we understand how industry structure drives competition, which, in turn, determines industry profitability, we can apply this analysis, first to forecasting industry profitability in the future, and second to devising strategies for changing industry structure.

Describing Industry Structure

The first stage of industry analysis is to identify the key elements of the industry's structure. In principle, this is a simple task. It requires identifying who are the main players – the producers, the customers, the suppliers, and the producers of substitute goods – then examining some of the key structural characteristics of each of these groups that will determine competition and bargaining power.

In most manufacturing industries the identity of the different groups of player is usually straightforward, in other industries – particularly in service industries – building a picture of the industry may be more difficult. Consider the television industry. There are a number of different types of player and establishing which are buyers, which are sellers, and where the industry boundaries lie is not simple. In terms of industry definition, do we consider all forms of TV distribution or identify separate industries for broadcast TV, cable TV, and satellite TV? In terms of identifying buyers and sellers, we see that there the industry has quite a complex value chain with the producers of the individual shows, networks that put together program schedules, and local broadcasting and cable companies that undertake final distribution. For the distribution companies there are two buyers – viewers and advertisers. Some companies are vertically integrated across several stages of the value chain – thus, networks such as Fox and NBC not only create and distribute program schedules, they are also backward integrated into producing some TV shows and they are forward integrated into local distribution through ownership of local TV stations.

Sorting out the different players and their relationships therefore involves some critical issues of industry definition. Which activities within the value chain do we include the industry? What are the horizontal boundaries of the industry in terms of both products and geographical scope? We shall return to some of these issues of industry definition in a subsequent section.

Forecasting Industry Profitability

We can use industry analysis to understand why profitability has been low in mining for metals and high in medical equipment but, ultimately, our interest in industry analysis is not to explain the past, but to predict the future. Investment decisions made today will commit resources to an industry for a decade or more – hence, it is critical that we are able to predict what industry profitability is likely to be in the future. Current profitability tends to be a poor indicator of future profitability. However, if an industry's profitability is determined by its structure of an industry, then we can use observations of the structural trends in an industry to forecast the likely changes in competition and profitability. Given that changes in industry structure tend to be long term and are the result of changes in customer buying behavior, changes in technology, and the strategies being implemented by the firms in the industry, we can use our current observations to identify emerging structural trends.

To predict the future profitability of an industry, our analysis proceeds in three stages:

1. Examine how the industry's current and recent levels of competition and profitability are a consequence of the industry's present structure.
2. Identify the trends that are changing the industry's structure. Is the industry consolidating? Are new players seeking to enter? Are the industry's products becoming more differentiated or more commoditized? Does it look as though additions to industry capacity will outstrip the industry's growth of demand?
3. Identify how these structural changes will affect the Five Forces of Competition and resulting profitability of the industry. Compared with the present, does it seem as though the changes in industry structure will cause competition to intensify or to weaken? Rarely do all the structural changes move competition in a consistent direction – typically, some factors will cause competition to increase, others will cause competition to moderate. Hence, determining the overall impact on profitability is likely to be a matter of judgment.

Strategy Capsule 3.2 discusses the profitability prediction in relation to the US casino industry.

Since the late 1990s, industry profitability in most of the world's major industrial nations has been declining – indeed, some studies suggest that profitability, in real terms, has been on a downward long-term trend for the past four decades. Increasing international competition appears to be a major contributor to deteriorating profitability. For a brief period of the late 1990s, there was a widespread belief that – in the US at least – the technology boom and the productivity gains associated with it might have reversed this trend, even at the point where the standard approaches to industry analysis might need to be abandoned or at least rewritten. The downturn of 2000–2002, and the bursting of the internet bubble in particular, have restored faith in the notion that the so-called “New Economy” did not require any rewriting of the principles of industry and competitive analysis. In retrospect, it appears fairly obvious that the impact of digital technologies was primarily to intensify competition and erode industry profits (see Strategy Capsule 3.3).

Strategies to Alter Industry Structure

Understanding how the structural characteristics of an industry determine the intensity of competition and the level of profitability provides a basis for identifying opportunities for changing industry structure in order to alleviate competitive pressures. The first issue is to identify the key structural features of an industry that are responsible for depressing profitability. The second is to consider which of these structural features are amenable to change through appropriate strategic initiatives. For example:

- In the European and North American oil refining industry, most firms have earned returns well below their cost of capital due to multiple competitors, excess capacity, and commodity products. In response, the oil majors have consolidated to reduce rivalry and facilitate capacity rationalization. In Europe,

STRATEGY CAPSULE 3.2 Prospects for the US Casino Industry

The late 1990s and early 2000s saw rapid development of the US casino gambling industry. The perception of the industry as a gold mine was shared not just by the existing casino operators, but also by municipalities, states, and entertainment companies. The result was unprecedented expansion.

In terms of new entry, casino gambling expanded well beyond its traditional centers in Las Vegas, Nevada, and Atlantic City, NJ. The municipalities and state governments saw gambling as offering new tax revenue sources and economic development opportunities. The result was the introduction of riverboat casinos and the licensing of casinos in Mississippi and seven other states (in addition to Nevada and New Jersey). The 1988 Indian Gaming Regulatory Act opened the way for casinos on Indian reservations. By 2002 there were over 100 casinos on Indian reservations across 17 states. One of the biggest was Foxwood's, owned by the Mashantucket Pequot tribe in Ledyard, CT. During 2000, the relaxation of gambling restrictions on the Indian reservations in California encouraged a new wave of casino projects.

For the major casino companies, rivalry to build the "biggest and best" hotel/casino complexes in Las Vegas and Atlantic City became increasingly intense. Between 1996 and 2000, the number of hotel rooms at Las Vegas casinos doubled. New "mega-casinos" in Vegas included the \$390 million Luxor, the \$450 million Treasure Island, the \$1 billion MGM Grand resort, the \$1.6 billion Bellagio, the \$1.4 billion New York, and the 6000-room, \$1.5 billion Venetian Hotel. Personal rivalry between Donald Trump and Mirage Resorts' Steve Wynn helped fuel capacity expansion in Atlantic City, where the impact of excess capacity was exacerbated by the high fixed costs of operating casinos.

Competition between casino companies involved ever more ambitious differentiation. The new casinos in Las Vegas broke fresh ground in spectacle, entertainment, theming, and sheer scale. Price competition was also evident in terms of subsidized travel packages, free rooms and other perks for "high rollers."

Growing substitute competition included an increasing number of state lotteries, offshore gambling on cruiseships, the installation of slot machines at horsetracks, and, most significantly, the growth of internet gambling.

Increasing competition encouraged rapid industry consolidation. By 2003, three major players dominated the industry: MGM Mirage, Park Place (which combined the casino interests of Hilton Hotels and Starwood Hotels), and Harrah's Entertainment.

The impact of new entry, excess capacity, and substitute competition upon industry margins depends on the extent to which new supply will create its own demand and the ability of the industry leaders to keep their instincts for aggressive competition under control. During the 1990s increased demand for gambling was able to absorb the rapid increase in casino capacity and the growth in alternative gambling media. Total US gambling revenues rose from \$124 billion in 1982, to \$304 billion in 1991, \$509 billion in 1996, and over \$700 billion in 1999. Nevertheless, as the data below show, industry profitability remained low.

<i>Company</i>	<i>Return on equity (%), 1998–2002</i>
MGM Mirage	7.8
Park Place Entertainment	9.4
Harrah's Entertainment	12.2
Mandalay Resorts Group	12.6
Trump Hotels and Casinos	4.2

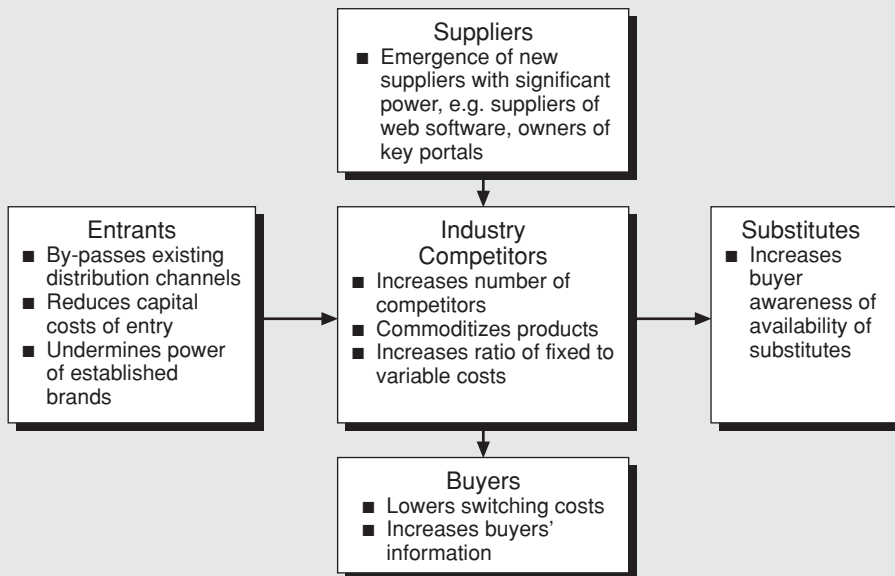
The critical issue for the period 2004–2008 was whether the demand for casino gambling would continue to grow at a pace that would take up the new casino capacity under construction, or whether new casino capacity, new gambling locations, and new forms of gambling would cause increasingly aggressive competition to destroy the industry's profitability.

Sources: www.ft.com; Shawn Tully, "The New King of Casinos," *Fortune*, September 18, 2000: 156–68.

STRATEGY CAPSULE 3.3 Competition in the New Economy

The development and diffusion of information and communications technologies (ICT) spawned the growth of many new industries – wireless telephony, satellite TV, and a host of e-commerce businesses – and transformed many established businesses from bookselling to financial services. The resulting boom in productivity, spawning of new investment, and the shift from an industrial-based to knowledge-based economy encouraged the belief that the advanced industrialized economies were entering a “New Economy” where the economic laws that had governed the “Old Economy” would not necessarily apply.

Certainly, many features of the knowledge-based economy based upon digital technologies were different – in particular the increasing returns associated with the information and knowledge.* However, in terms of *profitability*, the implications of the virtual, information-based economy looked less favorable. Let us consider specifically the implications of the internet for competition and profitability within industries. By applying the good-old Five Forces framework, Michael Porter showed that – rather than usher in a new era of opportunity and profitability, most of the implications of internet technology for existing industries were profoundly negative in terms of profitability. Thus, whether we are considering stockbroking, bookselling, banking, or educational services, the advent of the internet has typically resulted in increased rivalry among competitors, reduced barriers to entry, and enhanced the power of buyers. While the advent of the internet during the 1990s made available a wide range of e-commerce opportunities, the harsh reality is that where we look at established industries such as retailing or financial services, or new industries such as internet service provision or electronic markets, the main impact of the internet has been to intensify competition and erode industry attractiveness. The bursting of the dot.com bubble in 2000–2001 seems to be the inevitable result of the stock market catching up with strategic reality.



Note:

* Paul Romer, “Increasing Returns and Long-run Growth,” *Journal of Political Economy* 54 (1986): 897–908; Paul Romer, “The Soft Revolution,” *Journal of Applied Corporate Finance* (Summer 1998).

Source: Adapted from M. E. Porter, “Strategy and the Internet,” *Harvard Business Review* (March 2001): 63–77.

BP and Mobil merged their downstream activities and, in the US, Shell and Texaco formed a downstream joint venture. In the subsequent wave of mega mergers, BP acquired Amoco, then Arco. Exxon merged with Mobil and Chevron with Texaco. The merger of Total, Fina, and Elf created a super-major that dominated the oil products markets of France and the Low Countries.

- Excess capacity has also been a major problem in the European petrochemicals industry. Through a series of bilateral plant exchanges, each company has sought to build a leading position within a particular product area.²⁰
- In the US airline industry, the major airlines have sought to offset an unfavorable industry structure by a number of strategies. In the absence of significant product differentiation, the airlines have used frequent-flier schemes as a means of recreating customer loyalty. Through hub-and-spoke route systems, the companies have achieved dominance of particular airports: American at Dallas-Fort Worth, US Airways at Charlotte NC, and Northwest at Detroit and Memphis. Mergers and alliances have reduced the numbers of competitors on many routes.
- Building entry barriers is a vital strategy for preserving high profitability in the long run. A primary goal of the American Medical Association has been to maintain the incomes of its members by controlling the numbers of doctors trained in the United States and imposing barriers to the entry of doctors from overseas.

DEFINING INDUSTRIES: WHERE TO DRAW THE BOUNDARIES

In our earlier discussion of the structure of the television broadcasting industry, I noted that a key challenge in industry analysis is defining the relevant industry. The Standard Industrial Classification (SIC) offers an official guide, but this provides limited practical assistance. Suppose Jaguar, a subsidiary of Ford Motor Company, is assessing its future prospects. In forecasting the profitability of its industry, should Jaguar consider itself part of the “motor vehicles and equipment” industry (SIC 371), the automobile industry (SIC 3712), or the luxury car industry? Should it view its industry as national (UK), regional (Europe), or global?

Industries and Markets

The first issue is clarifying what we mean by the term “industry.” Economists define an industry as a group of firms that supplies a market. Hence, a close correspondence exists between markets and industries. So, what’s the difference between analyzing industry structure and analyzing market structure? The principal difference is that industry analysis – notably Five Forces analysis – looks at industry profitability being determined by competition in two markets: product markets and input markets.

Everyday usage makes a bigger distinction between industries and markets. Typically, industry is identified with relatively broad sectors, while markets refer to specific products. Thus, the firms within the packaging industry compete in many distinct product markets – glass containers, steel cans, aluminum cans, paper cartons, plastic containers, and so on. The distinction between the economist’s approach to industry and everyday usage of the term also relates to geographical boundaries. From an economist’s viewpoint, the US automobile industry would denote all companies supplying the US auto market – irrespective of the location. In everyday usage, the term “US auto industry” typically refers to auto manufacturers located within the US, and is often restricted to US-owned automakers (which now includes primarily Ford and General Motors).

For the purposes of industry analysis, we need to adopt the economist’s approach to identifying and defining industries. Thus, our starting point is the market – which are the group of firms that compete to supply a particular service? The result may be that, for the purposes of industry analysis, we may wish to disregard conventional concepts of industry. For example, if we are examining competition within the banking industry, it is likely that we would want to regard banking as comprising a number of industries – banks supply a number of distinct services and competition in each product market comprises different sets of firms. Most basic is the distinction between retail banking and investment banking. Even within retail banking we can distinguish different industry groups. For example, credit cards and consumer lending are closely related products, but they involve distinct product offerings and different groups of competing firms.

Given the conventional view of industries as broad economic sectors, Shiv Mathur and Alfred Kenyon argue that, in order to focus on the realities of competition, it is best to abandon the concept of industry in favor of a micro-level approach that begins with customers choosing between rival offerings. Strategy Capsule 3.4 outlines their approach.

STRATEGY CAPSULE 3.4 Mathur and Kenyon’s Approach to Competitive Analysis

Mathur and Kenyon argue that our conventional concept of industry is fundamentally flawed. In order to analyze competition, we must begin with customer choice. Customers do not choose a product or a company, their unit of choice is the single offering. Competitive strategy is the “positioning of a single offering vis-à-vis a unique set of potential customers and competitors.” Thus:

- Land Rover’s Discovery and Defender models are separate offerings because they compete for different groups with different preferences and with different competing offerings from other companies. To the extent that customer preferences and the range of competitors are different in France from Canada or Malaysia, then we can regard each model in each country as a separate offering competing in a separate market.
- London’s Dorchester Hotel comprises a number of separate offerings: luxury hotel accommodation, restaurant services, cocktail bar drinks, and various personal services and retail products. The customers for these may be much the same, but each will have a separate set of competitors.

STRATEGY CAPSULE 3.4 (*cont'd*)

The result is a micro approach to analyzing markets and competitive strategy that contrasts sharply with that associated with Michael Porter. Not only are offerings much more narrowly defined than products, but each offering has its own unique market.

Should we abandon our more aggregated industry analysis in favor of the meticulously micro analysis advocated by Mathur and Kenyon? The critical consideration is the type of question that we want our competitive analysis to answer. For decisions relating to marketing strategy – including product design, pricing, advertising, distribution, and entry into specific market segments – analysis of competition between narrowly defined offerings in relation to specific customers and customer groups is likely to be particularly revealing.

The case for retaining a more broadly-based approach to industry analysis rests on the objective of understanding and predicting medium-term profit trends (periods of over one year). Here the conventional Five Forces analysis of fairly broadly-defined industries has two virtues. First, it allows us to consider competition in two markets simultaneously – the market for outputs and markets for inputs. Second, it takes account of supply-side substitution. Even though Ford's different brands – Land Rover, Jaguar, Volvo and Lincoln – compete for different customers with different sets of competitors, they utilize many common components and can (with some reequipping) be produced at different Ford plants. Other car manufacturers can similarly switch production capacity between their different models. Hence, although heavily segmented, we can conceive of the automobile industry as a single industry subject to some common trends that will influence profitability similarly throughout the many different market segments.

Source: Shiv Mathur and Alfred Kenyon, *Creating Value: Successful Business Strategies* (Oxford: Butterworth-Heinemann, 2002).

Defining Markets: Substitution in Demand and Supply

I have argued that the key to defining industry boundaries is identifying the relevant market. By focusing on the relevant market, we do not lose sight of the critical relationship among firms within an industry: competition. But how do we define markets?

A market's boundaries are defined by substitutability. There are two dimensions to this – substitutability on the demand side and the supply side. Let us consider once more the market within which Jaguar competes. Starting with the demand side, if customers are unwilling to substitute trucks for cars on the basis of price differences, Jaguar's market should be viewed as automobiles rather than all motor vehicles. Again, if customers are only willing to substitute between Jaguars and other makes of luxury cars, then Jaguar's relevant market is luxury cars rather than the automobile market as a whole.

But this fails to take account of substitutability on the supply side. If manufacturers find it easy to switch their production from luxury cars to family sedans to sports cars and the like, such supply-side substitutability would suggest that Jaguar is competing within the broader automobile market. The ability of Toyota, Nissan, and Honda to penetrate the luxury car market suggests that supply-side substitutability between mass-market autos and specialty autos is moderately high. Similarly, the

automobile industry is frequently defined to include vans and light trucks, since these can be manufactured at the same plants as automobiles (often using the same platforms and engines). So too with “major appliance” manufacturers. They tend to be classified as a single industry, not because consumers are willing to substitute between refrigerators and dishwashers, but because the manufacturers can use the same manufacturing plants and distribution channels for different appliances.

The same considerations apply to the geographical boundaries of markets. Should Jaguar view itself as competing in a single global market or in a series of separate national or regional markets? The criterion here again is substitutability. If customers are willing and able to substitute cars available on different national markets, or if manufacturers are willing and able to divert their output among different countries to take account of differences in margins, then a market is global. The key test of the geographical boundaries of a market is price: if price differences for the same product between different locations tend to be eroded by demand-side and supply-side substitution, then these locations lie within a single market.

In practice, drawing the boundaries of markets and industries is a matter of judgment that depends upon the purposes and context of the analysis. If Ford is considering the pricing and market positioning of its Jaguar cars, it must take a micro-level approach that defines markets around each model, in each country, and in relation to different categories of customer (e.g., distinguishing between sales to car rental companies and sales to individual consumers). In considering decisions over investments in fuel cell technology, the location of engine plants, and which new products to develop over the next five years, Ford will view Jaguar as one part of its auto and light truck business and will define its market as global and extending across its full range of models. The longer term the decisions are that it is considering, the more broadly it will wish to consider its markets, since substitutability is higher in the long run than in the short term.

Second, the precise delineation of the boundaries of a market or industry is seldom critical to the outcome of our analysis so long as we remain wary of external influences. The market in which an offering competes is a continuum rather than a bounded space. Thus, we may view the competitive market of Disneyland, Anaheim as a set of concentric circles. Closest is Universal Studios Tour. Slightly more distant competitors are Sea World and Six Flags. Further still might be a trip to Las Vegas, or a skiing weekend. Beyond these would be the broader entertainment market that might include cinemas, the beach, or playing video games.

For the purposes of applying the Five Forces framework, industry definition is not critical. We define an industry “box” within which industry rivals compete, but because we include competitive forces outside the industry box – notably entrants and substitutes – the precise boundaries of the industry box are not greatly important. Whether we view Harley-Davidson as competing in the “retro” segment of the heavyweight motorcycle industry, in the heavyweight motorcycle industry, or in the motorcycle industry as a whole is not critical to the outcome of our analysis. Even if we define Harley’s market narrowly, we can still take into account competition from Triumph and Ducati as substitute competition. Indeed, we might want to consider competition from more distant substitutes – sports cars, motorized water craft, and participation in “extreme sports.”

FROM INDUSTRY ATTRACTIVENESS TO COMPETITIVE ADVANTAGE: IDENTIFYING KEY SUCCESS FACTORS

The Five Forces framework allows us to determine an industry's potential for profit. But how is industry profit shared between the different firms competing in that industry? As we have noted in our discussion of industry dynamics, competition between industry participants is ultimately a battle for competitive advantage in which firms rival one another to attract customers and maneuver for positional advantage. The purpose of this section is to look explicitly at the sources of competitive advantage within an industry. In subsequent chapters, we develop a more comprehensive analysis of competitive advantage. Our goal here is to identify those factors within the firm's market environment that determine its ability to survive and prosper – its *key success factors*.²¹ In Strategy Capsule 3.5, Kenichi Ohmae of McKinsey's Tokyo office discusses key success factors in forestry and their link with strategy.

STRATEGY CAPSULE 3.5 Probing for Key Success Factors

As a consultant faced with an unfamiliar business or industry, I make a point of first asking the specialists in the business, "What is the secret of success in this industry?" Needless to say, I seldom get an immediate answer, and so I pursue the inquiry by asking other questions from a variety of angles in order to establish as quickly as possible some reasonable hypotheses as to key factors for success. In the course of these interviews it usually becomes quite obvious what analyses will be required in order to prove or disprove these hypotheses. By first identifying the probable key factors for success and then screening them by proof or disproof, it is often possible for the strategist to penetrate very quickly to the core of a problem.

Traveling in the United States last year, I found myself on one occasion sitting in a plane next to a director of one of the biggest lumber companies in the country. Thinking I might learn something useful in the course of the five-hour flight, I asked him, "What are the key factors for success in the lumber industry?" To my surprise, his reply was immediate: "Owning large forests and maximizing the yield from them." The first of these key factors is a relatively simple matter: purchase of forest land. But his second point required further explanation. Accordingly, my next question was: "What variable or variables do you control in order to maximize the yield from a given tract?"

He replied: "The rate of tree growth is the key variable. As a rule, two factors promote growth: the amount of sunshine and the amount of water. Our company doesn't have many forests with enough of both. In Arizona and Utah, for example, we get more than enough sunshine but too little water, and so tree growth is very low. Now, if we could give the trees in those states enough water, they'd be ready in less than fifteen years instead of the thirty it takes now. The most important project we have in hand at the moment is aimed at finding out how to do this."

Impressed that this director knew how to work out a key factor strategy for his business, I offered my own contribution: "Then under the opposite conditions, where there is plenty of water but too little sunshine – for example, around the lower reaches of the Columbia River – the key factors should be fertilizers to speed up the growth and the choice of tree varieties that don't need so much sunshine."

Having established in a few minutes the general framework of what we were going to talk about, I spent the rest of the long flight very profitably hearing from him in detail how each of these factors was being applied.

Source: Kenichi Ohmae, *The Mind of the Strategist* (Harmondsworth: Penguin, 1982): 85.

Like Ohmae, our approach to identifying key success factors is straightforward and common sense. To survive and prosper in an industry, a firm must meet two criteria: first, it must supply what customers want to buy; second, it must survive competition. Hence, we may start by asking two questions:

- What do our customers want?
- What does the firm need to do to survive competition?

To answer the first question we need to look more closely at customers of the industry and to view them not so much as a source of bargaining power and hence as a threat to profitability, but more as the basic rationale for the existence of the industry and as the underlying source of profit. This implies that the firm must identify who its customers are, what are their needs, and how they choose between competing offerings. Once we have identified the basis of customers' preference, this is merely the starting point for a chain of analysis. For example, if consumers' choice of supermarkets is based primarily on which charges the lowest prices and if the ability to charge low prices depends on low costs, the key issues concern the determinants of costs among supermarkets.

The second question requires that the firm examines the basis of competition in the industry. How intense is competition and what are its key dimensions? Thus, in the luxury car market, consumers select primarily on the basis of prestige, design, quality, and exclusiveness. However, these qualities are an insufficient basis for success. In this intensely competitive market, survival requires a strong financial position (to finance new product development) and costs that are sufficiently low to allow a company to cover its cost of capital.

A basic framework for identifying key success factors is presented in Figure 3.5. Application of the framework to identify key success factors in three industries is outlined in Table 3.5.

FIGURE 3.5 Identifying key success factors

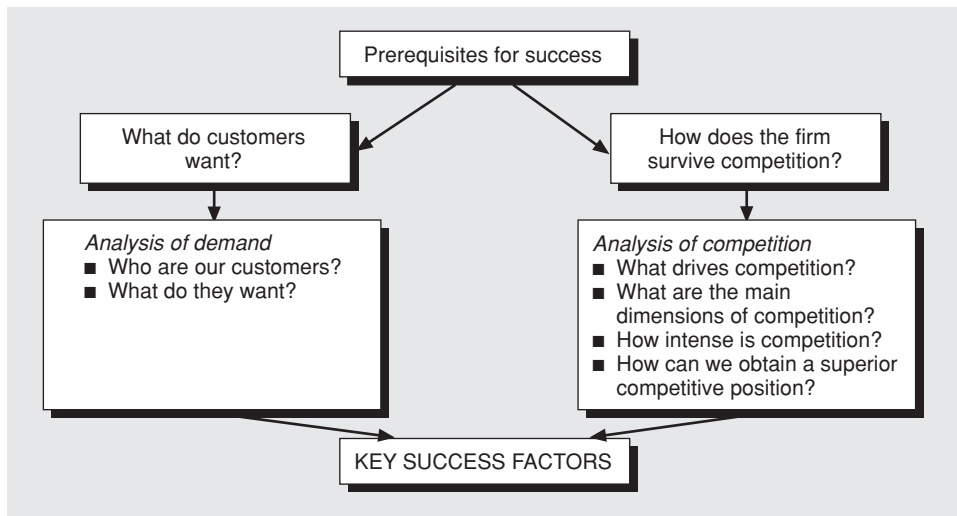


TABLE 3.5 Identifying Key Success Factors: Steel, Fashion Clothing, and Supermarkets

	WHAT DO CUSTOMERS WANT? (Analysis of demand)	HOW DO FIRMS SURVIVE COMPETITION? (Analysis of competition)	KEY SUCCESS FACTORS
Steel	<ul style="list-style-type: none"> ■ Low price. ■ Product consistency. ■ Reliability of supply. ■ Specific technical specifications for special steels. 	<ul style="list-style-type: none"> ■ Commodity products, excess capacity, high fixed costs, excess capacity, exit barriers, and substitute competition mean intense price competition and cyclical profitability. ■ Cost efficiency and strong financial resources essential. 	<ul style="list-style-type: none"> ■ Conventional sources of cost efficiency include: large-scale plants, low-cost location, rapid adjustment of capacity to output. ■ Alternatively, high technology, small scale plants can achieve low costs through flexibility and high productivity. ■ Differentiation through technical specifications and service quality.
Fashion clothing	<ul style="list-style-type: none"> ■ Wide variety of customer preferences relating to garment type, style, quality, color. ■ Customers willing to pay price premium for brand, stylishness, exclusivity, and quality. ■ Mass market highly price sensitive. 	<ul style="list-style-type: none"> ■ Low barriers to entry and exit, low seller concentration, and buying power of retail chains imply intense competition. ■ Differentiation can yield substantial price premium, but imitation is rapid. 	<ul style="list-style-type: none"> ■ Need to combine effective differentiation with low costs. ■ Key differentiation variables are speed of response to changing high fashions, style, reputation and quality. ■ Cost efficiency requires manufacture in low wage countries.
Supermarkets	<ul style="list-style-type: none"> ■ Low prices. ■ Convenient location. ■ Wide range of products adapted to local preferences. ■ Fresh/quality produce; good service; ease of parking; pleasant ambience. 	<ul style="list-style-type: none"> ■ Markets localized. ■ Intensity of price competition depends on number and proximity of competitors. ■ Bargaining power a critical determinant of cost of bought-in goods. 	<ul style="list-style-type: none"> ■ Low-cost operation requires operational efficiency, scale-efficient stores, large aggregate purchases to maximize buying power, low wage costs. ■ Differentiation requires large stores (to allow wide product range), convenient location, easy parking.

Key success factors can also be identified through the direct modeling of profitability. In the same way that our Five Forces analysis models the determinants of industry-level profitability, we can also attempt to model firm-level profitability in terms of identifying the key factors that drive a firm's relative profitability within an industry. In Chapter 2, we made some progress on this front. By disaggregating a firm's return on capital employed into individual operating factors and ratios, we can pinpoint the most important determinants of firm success (see Figure 2.2). In many industries, these primary drivers of firm-level profitability are well known and widely used as performance targets. Strategy Capsule 3.6 gives a well-known

STRATEGY CAPSULE 3.6 Identifying Key Success Factors by Modeling Profitability: Airlines

Profitability, as measured by operating income per available seat-mile (ASM), is determined by three factors: yield which is total operating revenues divided by the number of revenue passenger miles (RPM); load factor which is the ratio between RPMs and ASMs; and unit cost which is total operating expenses divided by ASMs. Thus:

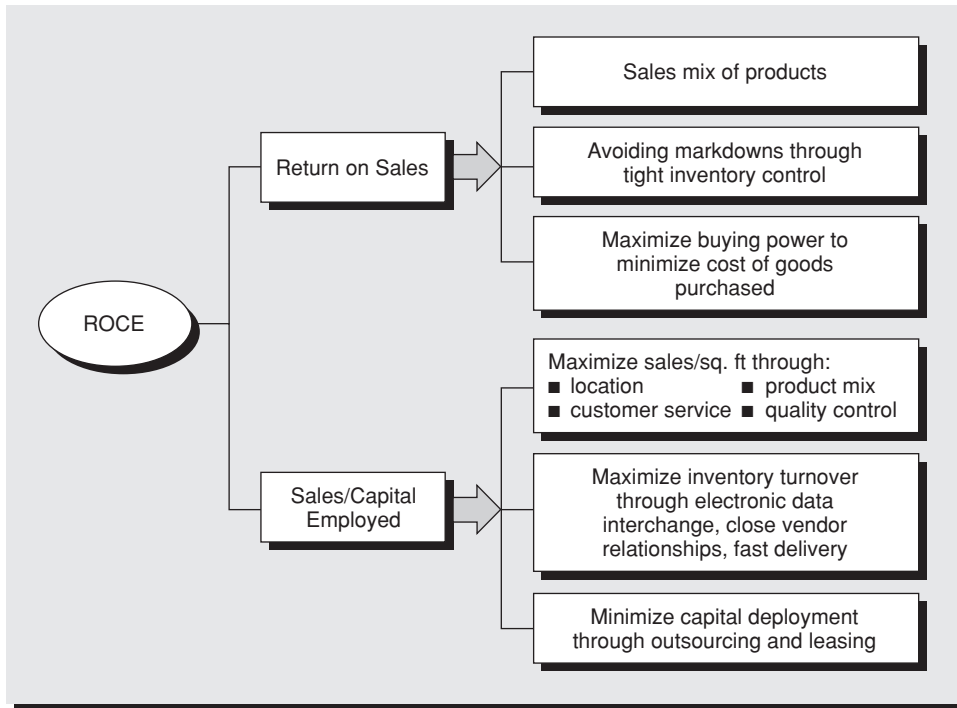
$$\frac{\text{Income}}{\text{ASMs}} = \frac{\text{Revenue}}{\text{RPMs}} \times \frac{\text{RPMs}}{\text{ASMs}} \text{ less } \frac{\text{Expenses}}{\text{ASMs}}$$

Some of the primary determinants of each of these measures are the following:

- Revenue/RPMs
 - Intensity of competition on routes flown.
 - Effective yield management to permit quick price adjustment to changing market conditions.
 - Ability to attract business customers.
 - Superior customer service.
- Load factors
 - Competitiveness of prices.
 - Efficiency of route planning (e.g., through hub-and-spoke systems).
 - Building customer loyalty through quality of service, frequent-flier programs.
 - Matching airplane size to demand for individual flights.
- Expenses/ASMs
 - Wage rates and benefit levels.
 - Fuel efficiency of aircraft.
 - Productivity of employees (determined partly by their job flexibility).
 - Load factors.
 - Level of administrative cost.

In their battle for survival, the airlines have sought to optimize as many of these factors as possible in order to improve their profitability. To enhance revenue, several airlines have withdrawn from their most intensely competitive routes, others have sought to achieve a fare premium over the cut-price airlines through superior punctuality, convenience, comfort, and services. To improve load factors, companies have become more flexible in their pricing and in allocating different planes to different routes. Most notably, companies have sought to cut costs by increasing employee productivity, reducing overhead, sharing services with other airlines, and reducing salaries and benefits.

FIGURE 3.6 Identifying key success factors through analyzing profit drivers: the case of retailing



profitability formula used in the airline industry, then identifies the factors that drive the profitability ratios. More generally, the approach introduced in Chapter 2 to disaggregate return on capital into its component ratios can be extended to identify the specific operational and strategic drivers of superior profitability. Figure 3.6 applies this analysis to identifying success factors in retailing.

The value of success factors in formulating strategy has been scorned by some strategy scholars. Pankaj Ghemawat observes that the “whole idea of identifying a success factor and then chasing it seems to have something in common with the ill-considered medieval hunt for the philosopher’s stone, a substance that would transmute everything it touched into gold.”²² The objective here in identifying key success factors is less ambitious. There is no universal blueprint for a successful strategy and, even in individual industries, there is no “generic strategy” that can guarantee superior profitability. However, each market is different in terms of what motivates customers and how competition works. Understanding these aspects of the industry environment is a prerequisite for an effective business strategy. Nevertheless, this does not imply that firms within an industry adopt common strategies. Since every firm comprises a unique set of resources and capabilities, even when an industry is subject to common success factors (e.g. low costs), firms will select unique strategies to link their resources and capabilities to industry success factors.

SUMMARY

In Chapter 1, we established that profound understanding of the competitive environment is a critical ingredient of a successful strategy. In this chapter, we have developed a systematic approach to analyzing a firm's industry environment in order to evaluate that industry's profit potential and to identify the sources of competitive advantage. The centerpiece of our approach is Porter's Five Forces of Competition framework, which links the structure of an industry to the competitive intensity within it and to the profitability that it realizes. Although every industry is unique, competition and profitability are the result of the systematic influences of the structure of that industry. The Porter framework provides a simple, yet powerful organizing framework for classifying the relevant features of an industry's structure and predicting their implications for competitive behavior. The framework is particularly useful for predicting industry profitability and for identifying how the firm can influence industry structure in order to improve industry profitability.

As with most of the tools for strategy analysis that we shall consider in this book, the Porter Five Forces framework is easy to comprehend. While its basis is a substantial body of microeconomic theory, the relationships it posits are straightforward and consistent with commonsense. However, the real learning about industry analysis, and about the Porter framework in particular, derives from its *application*. It is only when we apply the Porter framework to analyzing competition and diagnosing the causes of high or low profitability in an industry that we are forced to confront the complexities and subtleties of the model. What industry (or industries) does a company compete in? Where do the industry's boundaries lie? How wide a range of substitutes do we consider? How do excess capacity, cost structures, and exit barriers interact with one another?

I urge you to put the tools of industry analysis to work – not just in your strategic management coursework, but also in your interpretation of everyday business events. Why are the telecom equipment makers having such a tough time currently? What will be the impact of direct internet-based IPOs (such as Google's) on competition and profitability within investment banking? Is your cousin's plan to leave her law firm and run an antique stall in London's Portobello Road such a good idea given the competitive forces within this market?

Through practical applications of the Porter framework, we shall also become aware of its limitations. In the next chapter we shall consider some of these limitations and look to ways in which we can extend and augment our analysis with additional concepts, tools, and frameworks.

NOTES

- ¹ For a review of macro-environmental (“PEST”) analysis, see V. K. Narayanan and L. Fahey, “Macroenvironmental Analysis: Understanding the Environment Outside the Industry,” in L. Fahey and R. M. Randall (eds.), *The Portable MBA in Strategy*, 2nd edn (New York: Wiley, 2001): 189–214.
- ² Michael E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (New York: Free Press, 1980): Chapter 1. For a summary, see his article, “How Competitive Forces Shape Strategy,” *Harvard Business Review* 57 (March–April 1979): 86–93.
- ³ The *Wall Street Journal* (“For Bagel Chains, Investment May Be Money in the Hole,” December 30, 1997: B8) reported that the influx of new bagel chains, including Einstein/Noah Bagel Corp., Manhattan Bagel, BAB Holdings (Big Apple Bagels), Uncle B’s Bakery, Bruegger’s Bagel, Big City Bagels, and a host of others, resulted in widespread losses as prices were cut and margins fell.
- ⁴ W. J. Baumol, J. C. Panzar, and R. D. Willig, *Contestable Markets and the Theory of Industry Structure* (New York: Harcourt Brace Jovanovitch, 1982). See also Michael Spence, “Contestable Markets and the Theory of Industry Structure: A Review Article,” *Journal of Economic Literature* 21 (September 1983): 981–90.
- ⁵ “Annual Franchise 500,” *Entrepreneur* (January 2001).
- ⁶ “Brand Loyalty Is Rarely Blind Loyalty,” *Wall Street Journal* (October 19, 1989): B1.
- ⁷ Robert D. Buzzell and Paul W. Farris, “Marketing Costs in Consumer Goods Industries,” in Hans Thorelli (ed.), *Strategy + Structure = Performance* (Bloomington, IN: Indiana University Press, 1977): 128–9.
- ⁸ In October 1999, the Dept. of Justice alleged that American Airlines was using unfair means in attempting to monopolize air traffic out of Dallas-Fort Worth. (<http://www.aeroworldnet.com/1tw05179.htm>).
- ⁹ Marvin Lieberman (“Excess Capacity as a Barrier to Entry,” *Journal of Industrial Economics* 35, June 1987: 607–27) argues that, to be credible, the threat of retaliation needs to be supported by incumbents holding excess capacity giving them the potential to flood the market.
- ¹⁰ See for example: J. S. Bain, *Barriers to New Competition* (Cambridge, MA: Harvard University Press, 1956) and H. M. Mann, “Seller Concentration, Entry Barriers, and Rates of Return in Thirty Industries,” *Review of Economics and Statistics* 48 (1966): 296–307.
- ¹¹ W. S. Comanor and T. A. Wilson, *Advertising and Market Power* (Cambridge: Harvard University Press, 1974); and L. Weiss, “Quantitative Studies in Industrial Organization,” in M. Intriligator (ed.), *Frontiers of Quantitative Economics* (Amsterdam: North Holland, 1971).
- ¹² George S. Yip, “Gateways to Entry,” *Harvard Business Review* 60 (September–October 1982): 85–93.
- ¹³ F. M. Scherer and D. R. Ross, *Industrial Market Structure and Economic Performance*, 3rd edn (Boston: Houghton Mifflin, 1990); R. M. Grant, “Pricing Behavior in the UK Wholesale Market for Petrol. A ‘Structure-Conduct Analysis’,” *Journal of Industrial Economics* 30 (March 1982).
- ¹⁴ Richard Schmalensee, “Inter-Industry Studies of Structure and Performance,” in Richard Schmalensee and Robert D. Willig, *Handbook of Industrial Organization*, 2nd edn (Amsterdam: North Holland, 1988): 976. For evidence on the impact of concentration in banking, airlines, and railroads, see D. W. Carlton and J. M. Perloff, *Modern Industrial Organization* (Glenview, IL: Scott, Foresman, 1990): 383–5.
- ¹⁵ The problems caused by excess capacity and exit barriers are discussed in Charles Baden Fuller (ed.), *Strategic Management of Excess Capacity* (Oxford: Basil Blackwell, 1990).
- ¹⁶ R. M. Grant, “Daimler Chrysler and the World Automobile Industry,” in R. M.

- Grant, *Cases in Contemporary Strategy Analysis*, 3rd edn (Oxford: Blackwell, 2002).
- ¹⁷ S. H. Lustgarten, "The Impact of Buyer Concentration in Manufacturing Industries," *Review of Economics and Statistics* 57 (1975): 125–32; and Robert M. Grant, "Manufacturer–Retailer Relations: The Shifting Balance of Power," in G. Johnson (ed.), *Business Strategy and Retailing* (Chichester: John Wiley, 1987).
- ¹⁸ Robert D. Buzzell and Bradley T. Gale, *The PIMS Principles: Linking Strategy to Performance* (New York: Free Press, 1987): 64–5.
- ¹⁹ Ibid.
- ²⁰ Joe Bower, *When Markets Quake* (Boston: Harvard Business School Press, 1986).
- ²¹ The term was coined by Chuck Hofer and Dan Schendel, *Strategy Formulation: Analytical Concepts* (St. Paul: West Publishing, 1977): 77, who defined key success factors as "those variables that management can influence through its decisions and that can affect significantly the overall competitive positions of the firms in an industry . . . Within any particular industry they are derived from the interaction of two sets of variables, namely, the economic and technological characteristics of the industry . . . and the competitive weapons on which the various firms in the industry have built their strategies."
- ²² Pankaj Ghemawat, *Commitment: The Dynamic of Strategy* (New York: Free Press, 1991): 11.