4

Further Topics in Industry and Competitive Analysis

Introduction and Objectives

The Porter five forces model offers a systematic approach to analyzing competition. At the same time, it offers a highly simplified view of industry and competition. Consider the following:

- The only relationships between products that we have considered are substitute relations. Many products – both goods and services – have *complementary* relationships with one another. What do complements imply for competition and the potential for profit?

- In many sectors, industry structure may be much less stable than envisaged by the Porter model. Rather than structure determining competition in some predictable way, competition – particularly technological competition – may reshape industry structure very rapidly. How do we analyze industries where structure is continually being recreated by technology and firms' strategies?

- We have not explored the dynamic rivalry that characterizes business competition in the real world. Pepsi-Cola's competitive environment is determined more by the strategy and marketing tactics of Coca-Cola than by the structure of the world soft drinks industry. Similarly, Reuter's competitive environment is dominated by the competitive strategy of Bloomberg, as is Boeing's by Airbus Industrie. To understand competition as a dynamic, personalized process we shall draw upon the tools of game theory and competitor analysis.

- In our discussion of the problems of drawing industry boundaries, we noted the advantages of analyzing competition at different levels. American Airlines competes in the world airline industry. However, each route comprises a different market with a different set of competitors. To take account of the internal heterogeneity of industries, we shall disaggregate industries into segments and analyze each segment as a separate market.

This chapter will extend the analysis of industry and competition to address the above topics. In doing so, you will acquire the following capabilities:

- To analyze the impact of goods and services that are *complements* to those supplied by a firm, and to identify the potential for the firm to make profit through managing relationships with the suppliers of complements.

- To recognize the implications of *game theory* for competitive analysis, in particular, the potential gains to cooperative strategies and the use of threats, commitments, signaling, deterrence, and preemption to gain and sustain competitive advantage.
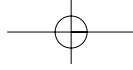
● To use *competitor analysis* to predict the competitive moves rivals are likely to initiate and likely responses by rivals to our own competitive initiatives.

● To *segment* an industry into its constituent markets, to appraise the relative attractiveness of different segments, and identify differences in key success factors among them.

● To classify the firms within an industry into *strategic groups* based on similarities in their strategies.

Extending the Five Forces Framework

Does Industry Matter?

Porter's five forces of Competition has been the subject of constant criticism. Some have attacked its theoretical foundations, arguing that the structure–conduct–performance approach to industrial organization that underlies it lacks rigor (especially when compared with the logical robustness of game theory). The main defense of industry analysis is that it is useful in allowing us to understand competition and to predict changes in profitability on the basis of changes in industry structure.

A more serious attack is that, irrespective of its theoretical rigor, in reality a firm's industry environment is a relatively minor determinant of that firm's profitability. A series of studies measuring the proportion of interfirm differences in profitability attributable to industry factors has produced very different results (see Table 4.1). Despite major differences in the findings of different studies, a common conclusion emerges very clearly: industry factors account for a minority of interfirm differences in profitability (less than 20 percent in all the studies).

These sobering findings have several implications. First, they point to the need to understand more deeply the determinants of competitive behavior between companies and the extent to which it has implications for industry-level profitability. We need to reconsider the relationship between industry structure and competition and explore more rigorous and sophisticated approaches to analyzing competition – game theory in particular. Second, we need to disaggregate broad industry groupings and examine competition at the level of particular segments and strategic groupings of firms. Let us begin by considering the possibilities of extending the Porter framework.

Complements: A Missing Force in the Porter Model?

The Porter framework identifies the suppliers of substitute goods and services as one of the forces of competition that reduces the profit available to the firms within an industry. However, economic theory identifies two types of relationship between different products: substitutes and complements. While the presence of substitutes reduces the value of a product, complements increase value. The availability of ink cartridges for my printer transforms its value to me.
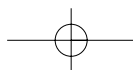
TABLE 4.1 What determines interfirm differences in profitability? The role of industry

	Percentage of variance in firms' return on assets explained by:		
	Industry effects	Firm effects	Unexplained variance
Schmalensee (1985)	19.6%	0.6%	79.9%
Rumelt (1991)	4.0%	44.2%	44.8%
McGahan & Porter (1997)	18.7%	31.7%	48.4%
Hawawini et al. (2003)	8.1%	35.8%	52.0%
Roquebert et al. (1996)	10.2%	55.0%	32.0%
Misangyi et al. (2006)	7.6%	43.8%	n.a.

Notes:

1   "Firm effects" combine business unit and corporate effects.

2   The rows do not sum to 100% because other sources of variance are not reported.

Given the importance of complements to most products – the value of my car depends on the availability of gasoline, insurance, and repair services – our analysis of the competitive environment needs to take them into account. The simplest way is to add a sixth force to Porter's framework (see Figure 4.1).[1]

Having introduced complements into our competitive analysis, the key issue is analyzing their impact. Where products are close complements, they have little value to customers individually – customers value the whole system. But how is the value shared between the producers of the different complementary products? Bargaining power and its deployment are the key. During the early 1990s, Nintendo video game consoles earned it huge profits. Although most of the revenue and consumer value was in the software – mostly supplied by independent developers – Nintendo was able to appropriate most of the profit potential of the entire system. Nintendo's strategic genius was in the management of its relationships with games developers. Nintendo established a dominant relationship with games developers by controlling its operating system, by issuing developer licenses to many producers of games software, and by maintaining tight control over the manufacture and distribution of games cartridges (from which Nintendo earned a hefty royalty).[2]

In PCs, by contrast, power has been on the side of the software suppliers – Microsoft in particular. IBM's adoption of open architecture meant that Microsoft Windows became a proprietary standard, while PCs were gradually reduced to commodity status. This is a very different situation from video games, where hardware suppliers keep proprietary control over their operating systems.

Where two products are complements to one another, profit will accrue to the supplier that builds the stronger market position and reduces the value contributed by the other. How is this done? The key is to achieve monopolization, differentiation, and shortage of supply in one's own product, while encouraging competition, commoditization, and excess capacity in the production of the complementary product. IBM is

FIGURE 4.1 Five Forces, or Six?
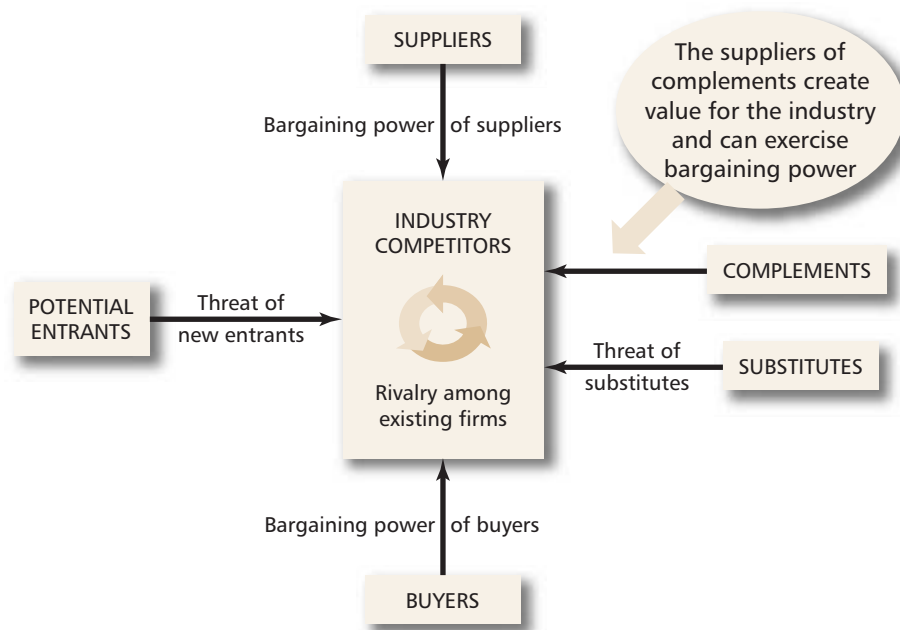
attempting to shift the balance of power between hardware and software producers through its promotion of Linux and other open-source software programs. By pressing to differentiate its hardware products while commoditizing software, it can reduce the power of Microsoft and garner a bigger share of the profit returns from systems of hardware and software.[3]

Dynamic Competition: Creative Destruction and Hypercompetition

The notion that industry structure is relatively stable and determines competitive behavior in a predictable way ignores the dynamic forces of innovation and entrepreneurship. Joseph Schumpeter viewed competition as a "perennial gale of creative destruction" through which favorable industry structures – monopoly in particular – contain the seeds of their own destruction by attracting incursions from new and established firms deploying innovatory strategies and innovatory products to unseat incumbents.[4]

This view of Schumpeter (and the "Austrian school" of economics) that competition is a dynamic process of rivalry that constantly reformulates industry structure suggests that it may be more appropriate to view structure as the outcome of competitive behavior rather than vice versa.[5] The key consideration is the speed of structural change in the industry – if structural transformation is rapid, the five forces model is of limited use in predicting competition and profitability.

In practice, Schumpeter's process of "creative destruction" tends to be more of a breeze than a gale. In established industries, entry occurs so slowly that profits are undermined only gradually,[6] while changes in industrial concentration tend to be

slow.[7] One survey observed: "the picture of the competitive process . . . is, to say the least, sluggish in the extreme."[8] Another study found a "lack of widespread evidence . . . that markets are more unstable now than in the recent past."[9] As a result, both at the firm and the industry level, profits tend to be highly persistent in the long run.[10]

However, some industries show clear evidence of "creative destruction." Jeffrey Williams defines "Schumpeterian industries" as those subject to rapid product innovation with relatively steep experience curves – they include semiconductors, consumer electronics, and computers.[11] In other industries, deregulation has been an important source of instability.[12] Rich D'Aveni uses the term *hypercompetition* to describe industry environments characterized by intense and rapid competitive moves, where competitors must move quickly to build advantages and erode the advantages of their rivals.[13] Hypercompetitive behavior involves continuously generating new competitive advantages and destroying, obsoleting, or neutralizing the opponent's competitive advantage, thereby disrupting the status quo of the marketplace by creating disequilibrium. If competitive advantage is transitory, the only route to sustained superior performance is through continually recreating and renewing competitive advantage. We shall return to this issue in Chapter 7 when we consider competitive advantage in greater depth.

The Contribution of Game Theory

Central to the criticisms of Porter's five forces as a static framework is its failure to take full account of competitive interactions among firms. In Chapter 1, we noted that the essence of strategic competition is the interaction among players, such that the decisions made by any one player are dependent on the actual and anticipated decisions of the other players. By relegating competition to a mediating variable that links industry structure with profitability, the five forces analysis offers little insight into competition as the outcome of strategic decisions by rival firms. Game theory allows us to model competitive interaction. In particular, it offers two especially valuable contributions to strategic management:

1 *It permits the framing of strategic decisions.* Apart from any theoretical value of the theory of games, game theory provides a structure, a set of concepts, and a terminology that allows us to describe a competitive situation in terms of:
   - identity of the players;
   - specification of each player's options;
   - specification of the payoffs from every combination of options;
   - the sequencing of decisions using game trees.

   This permits us to understand the structure of the competitive situation and facilitates a systematic, rational approach to decision making.

2 *It can predict the outcome of competitive situations and identify optimal strategic choices.* Through the insight it offers into situations of competition and bargaining, game theory can predict the equilibrium outcomes of competitive situations and the consequences of strategic moves by any one player. Game theory provides penetrating insights into central issues of strategy that go well beyond pure intuition. Simple game models (e.g.
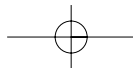
"prisoners' dilemma") predict cooperative versus competitive outcomes, whereas more complex games permit analysis of the effects of reputation,[14] deterrence,[15] information,[16] and commitment[17] – especially within the context of multiperiod games. Particularly important for practicing managers, game theory can indicate strategies for improving the structure and outcome of the game through manipulating the payoffs to the different players.

Despite exploding interest and rapid development of game theory during the 1980s, its influence on strategic management practice remained limited until the 1990s. Since then, practical applications of game theory have grown as a result of a number of practical guides to the application of game theory's tools and insights.[18] Game theory has provided illuminating insights into a wide variety of situations, including the Cuban missile crisis of 1962,[19] rivalry between Boeing and Airbus Industrie,[20] NASCAR race tactics,[21] auctions of airwave spectrum,[22] and the reasons why evolution has conferred such magnificent tails upon male peacocks.[23]

Cooperation

One of the key merits of game theory is its ability to encompass both competition and cooperation. A key deficiency of the five forces framework is in viewing interfirm relations as exclusively competitive in nature. The central message of Adam Brandenburger and Barry Nalebuff's book *Co-opetition* is recognizing the competitive/ cooperative duality of business relationships.[24] Whereas Coca-Cola's relationship with Pepsi-Cola is essentially competitive, that between Intel and Microsoft is primarily complementary.

However, there is no simple dichotomy between competition and cooperation: all business relationships combine elements of both.

For all their intense rivalry, Coca-Cola and PepsiCo cooperate on multiple fronts; including common policies on sales of soda drinks with schools, environmental issues, and health concerns. There is also some evidence of coordination in both pricing and product introductions.[25] Exxon and Shell have battled for over a century for leadership of the world petroleum industry. At the same time, Exxon and Shell cooperate in a number of joint ventures, including NAM, one of Europe's biggest natural gas producers. The desire of competitors to cluster together – antique dealers in London's Bermondsey Market and movie studios in Hollywood – points to the complementary relations among competitors in growing the size of their market and developing its infrastructure. Similarly, with customers and suppliers, though in creating value, they are also rivals in sharing that value.

In many business relationships, competition results in an inferior outcome for the players than would cooperation. The prisoners' dilemma game analyzes this predicament (see Strategy Capsule 4.1).

Deterrence

One way of changing a game's equilibrium through adjusting its payoffs is through *deterrence*. The principle behind deterrence is to impose costs on the other players for actions that we deem to be undesirable. By establishing the certainty that deserters would be shot, the British army provided a strong incentive to its troops to participate in advances on heavily fortified German trenches during World War I.
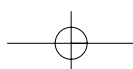
STRATEGY CAPSULE 4.1

The Prisoners' Dilemma

The classic prisoners' dilemma game involves a pair of crime suspects who are arrested and interrogated separately. The dilemma is that each will "rat" on the other with the result that both end up in jail despite the fact that, if both had remained silent, both would have been released for lack of evidence.

The dilemma arises in almost all competitive situations – everyone could be better off with collusion. Consider competition between Coca-Cola and Pepsi-Cola in Ukraine where each has the choice of spending big or small on advertising. The matrix below shows the payoffs to each firm.

Clearly, the best solution for both firms is for them to each restrain their advertising expen-diture (the upper left cell). However, in the absence of cooperation, the outcome for both firms is to adopt big budgets (the lower right cell) – the reason being that each will fear that any restraint will be countered by the rival seeking advantage by shifting to a big adver-tising budget. The resulting *maxi-min* choice of strategies (each company chooses the strategy that maximizes the minimum payoff) is a *Nash Equilibrium*: no player can increase his/her pay-off by a unilateral change in strategy. Even if collusion can be achieved, it will be unstable because of the incentives for cheating – a con-stant for problem for OPEC, where the mem-ber countries agree quotas, but then cheat on them.

	COKE (Payoffs in $ millions)	
	Small Advertising Budget	Big Advertising Budget
PEPSI Small Advertising Budget	10 10	−2 15
Big Advertising Budget	15 −2	4 4

How can a firm escape from such prisoners' dilemmas? One answer is to change a one-period game (single transaction) into a repeated game. In the case of the supplier–buyer rela-tionship, moving from a spot transaction to a long-term vendor relationship gives the sup-plier the incentive to offer a better-quality product and the buyer to offer a price that offers the seller a satisfactory return. In the case of price competition, markets dominated by two or three suppliers tend to converge toward patterns of price leadership where price com-petition is avoided.

A second solution is to change the payoffs in the game. In the classic prisoners' dilemma, the Mafia shifts the equilibrium from the suspects implicating one another to the suspects not talking by enforcing its "code of silence" through draconian reprisals. Similarly, if both Coke and Pepsi were to threaten one another with an aggressive price war should the other seek advantage through a big adverting budget, this could shift the equilibrium to the top left cell.

Sources: A. Dixit and B. Nalebuff, "Prisoners' Dilemma," *The Concise Encyclopedia of Economics* (www.econlib.org/library/Enc/PrisonersDilemma.html); "Prisoners' Dilemma," *Stanford Encyclopedia of Philosophy* (http://plato.stanford.edu/entries/prisoner-dilemma/).

The key to the effectiveness of any deterrent is that it must be credible. The problem here is that if administering the deterrent is costly or unpleasant for the threatening party, the deterrent is not credible. Incumbents in a market may threaten a would-be entrant with aggressive price cuts. However, the entrant may rationalize that; once it has entered the market, it is no longer in the incumbent firm's best interest to engage in a costly price war. The key is that threats will only deter if they are credible. Investing in excess capacity is an effective means of discouraging entry. Prior to the expiration of its Nutrasweet patents, Monsanto invested heavily in unneeded plant capacity to deter manufacturers of generic asportame.[26] Conversely, in compact disks, the reluctance of the dominant firm (Philips) to invest heavily in new capacity to meet growing demand allowed the entry of a wave of newcomers.[27] However, Marvin Lieberman has cast doubt on the effectiveness of excess capacity in deterring new entry.[28]

Deterrence has provided a central theme in military strategy. The nuclear arms race between the US and the then Soviet Union was based on the logic of "mutual assured destruction." However, the ability for deterrence to produce a stable, peaceful equilibrium depends on the willingness of the adversaries to be deterred. The central weakness of George W. Bush's "war on terror" was that ideologically motivated terrorists are not susceptible to deterrence.[29]

Commitment

For deterrence to be effective it must be credible, which means being backed by commitment. Commitment involves the elimination of strategic options – hence it means accepting increased risk. When Hernan Cortes destroyed his ships on arrival in Mexico in 1519, he achieved, first, motivation for his men to conquer the Aztec empire, and second, a signal to Montezuma that any Aztec aggression could not lead to Spanish withdrawal. Airbus's investments in advertising, research, and supply contracts during 2000–2 for its A380 superjumbo was to signal its commitment both to airlines and to Boeing, so that the airlines would be encouraged to place orders, and Boeing would be discouraged from developing a rival plane. Don Sull argues that commitments are the essence of strategic decision making since they "bind an organization to a future course of action."[30]

These commitments to aggressive competition have been described as "hard commitments." A company may also make commitments that moderate competition; these are called "soft commitments."[31] The airlines' frequent-flier programs commit the airlines to redeem miles flown with free tickets. They also signal to other airlines a willingness to avoid price competition and indicate less vulnerability to a rival's price cuts. How these different types of commitment affect the profitability of the firm making the commitment depends on the type of game being played. Where companies compete on price, game theory shows that they tend to match one another's price changes.[32] Hence, under price adjustments, hard commitments (e.g., a commitment to cut price) tend to have a negative profit impact and soft commitments (e.g., a commitment to raise prices) have a positive impact. Conversely, where companies compete on output, game theory shows that increases in output by one firm results in output reductions by the other.[33] Hence, under quantity adjustments, a hard commitment (e.g., a commitment to build new plants) will tend to have a positive effect on the committing firm's profitability, since it will tend to be met by other firms reducing their output.[34]

Changing the Structure of the Game

Creative strategies can change the structure of the competitive game. A company may seek to change the structure of the industry within which it is competing in order to increase the profit potential of the industry or to appropriate a greater share of the profit available. Thus, establishing alliances and agreements with competitors can increase the value of the game by increasing the size of the market and building joint strength against possible entrants. There may be many opportunities for converting win–lose (or even lose–lose) games into win–win games. A cooperative solution was found to Norfolk Southern's competition with CSX for control of Conrail, for example. The 1997 bidding war was terminated when CSX and Norfolk Southern agreed to cooperate in acquiring and dismembering Conrail.

In some cases, it may be advantageous for a firm to create competition for itself. By offering second-sourcing licenses to AMD, Intel gave up its potential monopoly over its x86 microprocessors. Although Intel was creating competition for itself, it was also encouraging the adoption of the x86 chip by computer manufacturers (including IBM) who were concerned about overdependence on Intel. As we shall see in chapter 11, standards battles typically involve the deliberate creation of competition by the main contestants.

Signaling

How a competitor will react to a company's strategic initiative depends on how the competitor perceives the initiative. The term *signaling* is used to describe the selective communication of information to competitors (or customers) designed to influence their perception and hence to provoke or avoid certain types of reaction.[35] The use of diversionary attacks and misinformation is well developed in military warfare. In 1944, Allied deception was so good that even during the D-Day landings in Normandy, the Germans believed that the main invasion would occur near Calais. The principal role of signaling is to deter and mislead competitors. But, as noted in discussing deterrence, information on its own is not enough: signals need to be credible. Thus, Allied misinformation concerning the invasion of Europe included the marshaling of a phantom army designed to convince the German high command that the Normandy invasion was merely a diversionary mission.

The credibility of threats is critically dependent on the company's reputation.[36] Even though carrying out threats against rivals is costly and depresses short-term profitability, exercising such threats can build a reputation for aggressiveness that deters competitors in the future. The benefits of building a reputation for aggressiveness may be particularly great for diversified companies where reputation can be transferred from one market to another.[37] Hence, Procter & Gamble's protracted market share wars in disposable diapers and household detergents have established a reputation for toughness that protects it from competitive attacks in other markets. Other companies whose aggressive quest for market share has gained them reputations as "killer competitors" include Gillette in razor blades, Anheuser-Busch in beer, and Emerson Electric in sink disposal units. Faced with such formidable and unrelenting rivals, smaller competitors have typically retreated to niches or given up the fight altogether.

Signaling through price announcement may also be a means to facilitate collaborative pricing among firms.[38]
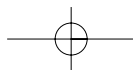
Is Game Theory Useful?

The value of game theory to strategic management has generated lively debate. For economists this seems paradoxical, since to them game theory *is* the theory of strategy. The great virtue of game theory is its rigor. In microeconomics, the game theory revolution of the past quarter-century has established the analysis of markets and firm behavior on a much more secure theoretical foundation.

However, the price of mathematical rigor has been limited applicability to real world situations. Game theory provides clear prediction in highly stylized situations involving few external variables and highly restrictive assumptions. The result is a mathematically sophisticated body of theory that suffers from unrealistic assumptions, lack of generality, and an analysis of dynamic situations through a sequence of static equilibriums.[39] When applied to more complex (and more realistic) situations, game theory frequently results in either no equilibrium or multiple equilibriums, and outcomes that are highly sensitive to small changes in the assumptions. In general, game theory has not developed to the point where it permits us to model real business situations in a level of detail that can generate precise predictions.

In terms of empirical application, game theory has done a much better job of explaining the past than of predicting the future. In diagnosing Nintendo's domination of the video games industry in the 1980s, Monsanto's efforts to prolong Nutrasweet's market leadership beyond the expiration of its patents, or Airbus's wresting of market leadership from Boeing, game theory provides penetrating insight into the competitive situation and deep understanding of the rationale behind the strategies deployed. However, in predicting outcomes and designing strategies, game theory has been much less impressive – the use of game theory by US and European governments to auction wireless spectrum has produced mixed results.[40]

So, where can game theory assist us in designing successful strategies? As with all our theories and frameworks, game theory is useful not because it gives us answers, but because it can help us understand business situations. Game theory provides a set of tools that allows us to structure our view of competitive interaction. If we identify the players in a game, identify the decision choices available to each player, specify the performance implications of each combination of decisions, and predict how each player is likely to react to the decision choices of the other, then we have made huge progress in understanding the dynamics of competition. Most importantly, by describing the structure of the game we are playing, we have a basis for suggesting ways of changing the game and thinking through the likely outcomes of such changes.

Although game theory continues its rapid development, it is still a long way from providing the central theoretical foundation for strategic management. Though we draw on game theory in several places in this book (particularly in exploring competitive dynamics in highly concentrated markets), our emphasis in strategy formulation will be less on achieving advantage through influencing the behavior of competitors and much more on transforming competitive games through building positions of unilateral competitive advantage. The competitive market situations with which we shall be dealing will, for the most part, be different from those considered by game theory. Game theory typically deals with competitive situations with closely matched players where each has a similar range of strategic options (typically relating to price changes, advertising budgets, capacity decisions, and new product introductions). The outcome of these games is highly dependent on order of moves, signals,
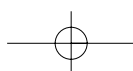
bluffs, and threats. Our emphasis will be less on managing competitive interactions and more on establishing competitive advantage through exploiting uniqueness.

Competitor Analysis

We have argued that in highly concentrated industries, the key characteristics of a company's external environment are determined by the behavior of a few rivals – possibly a single firm. In household detergents, Unilever's industry environment is dominated by the strategy of Procter & Gamble. The same is true in soft drinks (Coke and Pepsi), jet engines (GE, United Technologies, and Rolls-Royce), and business news periodicals (*Business Week*, *Fortune*, and *Forbes*). Similar circumstances exist in more local markets. The competitive environment of my local Costa Coffee house is dominated by the presence of Starbucks across the road. Game theory provides a theoretical apparatus for analyzing competitive interaction between small numbers of rivals but, for everyday business situations, a more empirically based approach to predicting competitor behavior may be more useful. Let us examine how information about competitors can help us to predict their behavior.

Competitive Intelligence

Competitive intelligence involves the systematic collection and analysis of public information about rivals for informing decision making. It has three main purposes:

- To forecast competitors' future strategies and decisions.
- To predict competitors' likely reactions to a firm's strategic initiatives.
- To determine how competitors' behavior can be influenced to make it more favorable.

For all three purposes, the key requirement is to understand competitors in order to predict their responses to environmental changes and our own competitive moves. To understand competitors, it is important to be informed about them. Competitive intelligence is a growth field, with a flood of recent books,[41] a dedicated journal,[42] specialist consulting firms, and professional associations.[43] About one-quarter of large US corporations have set up competitive intelligence units.

The distinction between legitimate competitive intelligence and illegal industrial espionage is blurred. The boundaries between public and private information are not always clear. The scope of trade secrets law is murky. Several well publicized cases of information theft have underlined the dangers. In 2001, Procter & Gamble acknowledged that its efforts to acquire information on Unilever's hair care business had transgressed the limits of propriety and legality in trespassing on Unilever's property and taking documents from Unilever dumpsters.[44]

A Framework for Predicting Competitor Behavior

Competitive intelligence is not simply about collecting information. The problem is likely to be too much rather than too little information. The key is a systematic approach that makes clear what information is required and for what purposes it will be used. The objective is to *understand* one's rival. A characteristic of great generals from Hannibal to Patton has been their ability to go beyond military intelligence and

FIGURE 4.2 A framework for competitor analysis
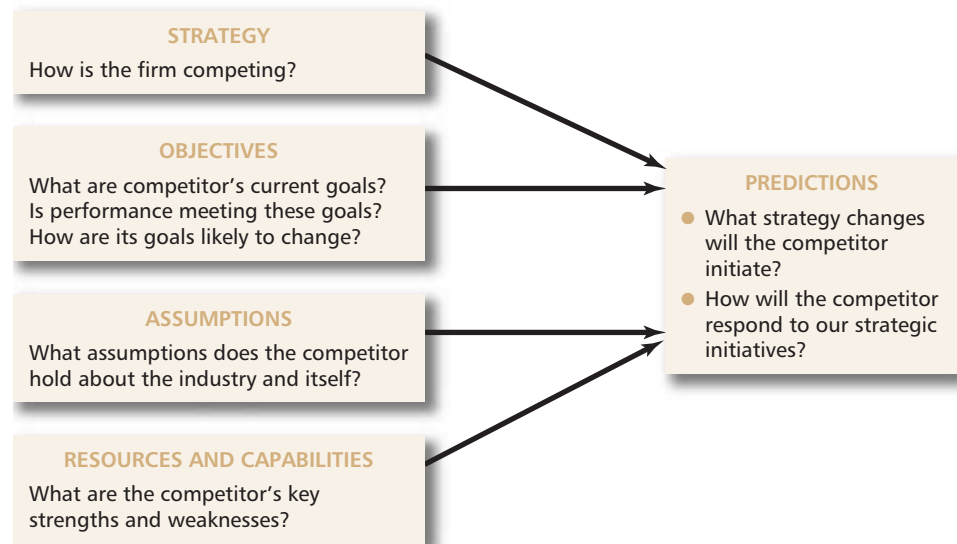
to "get inside the heads" of their opposing commanders. Michael Porter proposes a four-part framework for predicting competitor behavior (see Figure 4.2).

1. Competitor's Current Strategy To predict how a rival will behave in the future, we must understand how that rival is competing at present. A company's strategy may be identified on the basis of what it says and what it does. These two are not necessarily the same. As we noted in Chapter 1, a company's statements of strategy intentions (e.g., in its annual reports – especially the chairman's letter to shareholders – and in presentations to financial analysts) may deviate from its realized strategy as indicated by its capital expenditures, its new product launches, its R&D initiatives, and its HR decisions. Thus, in building a picture of a company's strategy, the key is to link the content of top management communication (with investors, the media, and financial analysts) with the evidence of strategic actions – particularly those that involve commitment of resources. For both sources of information, company websites are invaluable.

2. Competitor's Objectives To forecast how a competitor might change its strategy, we must identify its goals. A key issue is whether a company is driven by financial goals or market goals. A company whose primary goal is attaining market share is likely to be much more aggressive a competitor than one that is mainly interested in profitability. The willingness of the US automobile and consumer electronics producers to cede market share to Japanese competitors was partly a result of their preoccupation with short-term profitability. By comparison, companies like Procter & Gamble and Coca-Cola are obsessed with market share and tend to react aggressively when rivals step on their turf. The most difficult competitors are likely to be those that are not subject to profit disciplines at all – state-owned enterprises in particular.

The level of current performance in relation to the competitor's objectives is important in determining the likelihood of strategy change. The more a company

is satisfied with present performance, the more likely it is to continue with its present strategy. But if performance is falling well short of target, radical strategic change, possibly accompanied by a change in top management, is likely.

3. Competitor's Assumptions about the Industry A competitor's strategic decisions are conditioned by its perceptions of itself and the outside world. The perceptions are guided by its assumptions concerning the industry and business in general. Both are likely to reflect the beliefs that senior managers hold about their industry and the success factors within it. Evidence suggests that not only do these systems of belief tend to be stable over time, they also tend to converge among the firms within an industry. J.-C. Spender has described them as "industry recipes."[45]

Industry recipes may engender "blindspots" that limit the capacity of a firm – even an entire industry – to respond to an external threat. During the 1960s, the Big Three US automobile manufacturers firmly believed that small cars were unprofitable. This belief was partly a product of their own overhead allocation procedures. The result was a willingness to yield the fastest-growing segment of the US automobile market to imports. The complacency of British and US motorcycle manufacturers in the face of Japanese competition reflects similar beliefs (see Strategy Capsule 4.2).

STRATEGY CAPSULE 4.2

Motorcycle Myopia

During the 1960s, BSA was the leading motorcycle manufacturer in Britain, while Harley-Davidson was the leader in the US. During the 1960s, both markets experienced increased import penetration from Japan, but given the emphasis by Honda, Suzuki, and Yamaha on smaller motorcycles, the Japanese challenge was largely discounted.

Eric Turner, chairman of BSA Ltd. (manufacturer of Triumph and BSA motorcycles), commented in 1965:

> *The success of Honda, Suzuki, and Yamaha has been jolly good for us. People start out by buying one of the low-priced Japanese jobs. They get to enjoy the fun and exhilaration of the open road and they frequently end up buying one of our more powerful and expensive machines.*

Similar complacency was expressed by William Davidson, president of Harley-Davidson:

> *Basically, we do not believe in the lightweight market. We believe that motorcycles are sports vehicles, not transportation vehicles. Even if a man says he bought a motorcycle for transportation, it's generally for leisure time use. The lightweight motorcycle is only supplemental. Back around World War I, a number of companies came out with lightweight bikes. We came out with one ourselves. We came out with another in 1947 and it just didn't go anywhere. We have seen what happens to these small sizes.*

By the end of the 1970s, BSA and Triumph had ceased production and Harley-Davidson was barely surviving. The world motorcycle industry, including the large bike segments, was dominated by the Japanese.

Sources: *Advertising Age* (December 27, 1965); *Forbes* (September 15, 1966); Richard T. Pascale, *Honda A* (Harvard Business School Case No. 9-384-049, 1983).
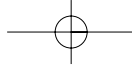
4. Competitor's Resources and Capabilities Evaluating the likelihood and seriousness of a competitor's potential challenge requires assessing the strength of that competitor's resources and capabilities. If our rival has a massive cash pile, it would be unwise for our company to unleash a price war by initiating price cuts. Conversely, if we direct our competitive initiative towards our rivals' weaknesses, it may be difficult for them to respond. Richard Branson's Virgin Group has launched a host of entrepreneurial new ventures, typically in markets dominated by a powerful incumbent – British Airways in airlines, EMI in music, Vodafone in wireless telecommunications. Branson's strategy has been to adopt innovative forms of differentiation that are difficult for established incumbents to respond to.

Segmentation Analysis[46]

The Uses of Segmentation

In Chapter 3 we noted the difficulty of drawing industry boundaries and the need to define industries both broadly and narrowly according to the types of question we are seeking to answer. Initially it may be convenient to define industries broadly, but for more detailed analysis of competition we need to focus on markets that are drawn more narrowly in terms of both products and geography. This process of disaggregating industries into specific markets we call *segmentation*.

Segmentation is particularly important if competition varies across the different submarkets within an industry such that some are more attractive than others. A company can avoid some of the problems of an unattractive industry by judicious segment selection. Consider Dell Computer in the intensely competitive personal computer industry. One of the ways in which Dell has maintained its margins is by continuously shifting towards higher margin products, customer groups, and geographical areas. During 2000–6, Dell shifted resources from desktop PCs to servers, storage systems, laptops, conumables (e.g. ink cartridges), and consumer electronic products (e.g. TVs); and from the more mature markets of North America and Europe to the growth markets of the Asia-Pacific region. Its direct distribution model allows highly detailed segmentation – to the point of analyzing probability at the level of the individual customer. "We cut the market and then cut it again, looking for the most profitable customers to serve," says CEO Kevin Rollins.[47]

Key success factors also differ by segment. In the restaurant industry, the requirements for success are almost totally different between the fast-food segment and luxury restaurants. The result is that within a single industry, very different companies with very different strategies coexist.

Stages in Segmentation Analysis

The purpose of segmentation analysis is to identify attractive segments, to select strategies for different segments, and to determine how many segments to serve. The analysis proceeds in five stages (see Strategy Capsule 4.3 for a summary and application).

1. Identify Key Segmentation Variables The first stage of segmentation analysis is to determine the basis of segmentation. Segmentation decisions essentially are choices about which customers to serve and what to offer them: hence segmentation
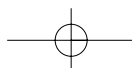
variables relate to the characteristics of customers and the product (see Figure 4.3). The most appropriate segmentation variables are those that partition the market most distinctly in terms of limited substitutability among both customers (demand-side substitutability) and producers (supply-side substitutability). Distinct market segments tend to be recognizable from price differentials. Thus, in the auto industry, color is

STRATEGY CAPSULE 4.3

Segmenting the European Metal Can Industry

1. Identify Key Segmentation Variables and Categories

- Identify possible segmentation variables

  Raw material, can design, can size, customer size, customer's industry, location

- Reduce the number of segmentation variables: Which are most significant? Which are closely correlated and can be combined?

  Type of can, customer industry, customer location

- Identify discrete categories for each segmentation variable.

  Type of can: steel 3-piece, steel 2-piece, aluminum 2-piece, general cans, composite cans, aerosols. Type of customer: food processing, fruit juice, petfood, soft drink, toiletries, beer, oil. Location: France, Germany, Spain/Portugal, Italy, UK, Benelux/Netherlands.

2. Construct a Segmentation Matrix

3. Analyze Segment Attractiveness

Apply five forces analysis to individual segments. For example, the market for aluminum 2-piece cans to soft drink canners in Italy may be analyzed as follows:

SUPPLIER POWER
—strong labor union
—competitive aluminum supply

BARRIES TO MOBILITY
—high cost of
  aluminum can lines

INTERNAL RIVALRY
—few companies
—low differentiation
—little excess capacity

SUBSTITUTES
—steel cans not viable
—plastic unattractive in
  small sizes
—glass heavy

BUYER POWER
—influence of a few
  large soft drink bottlers
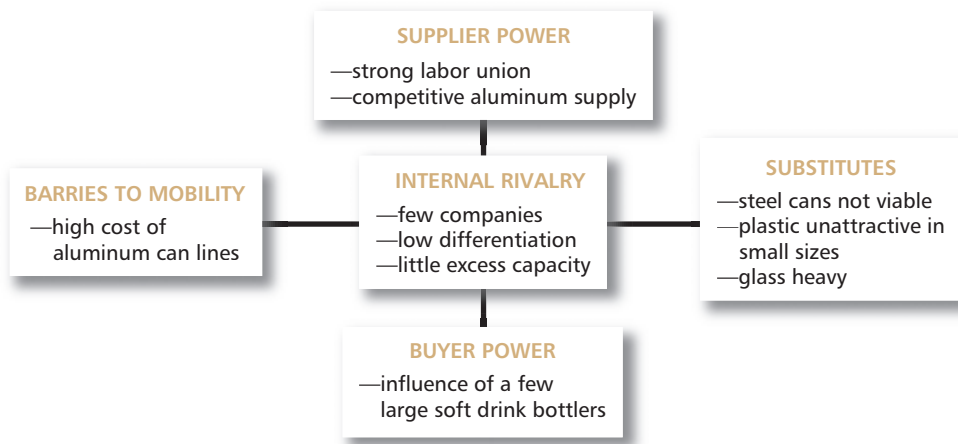
4. Identify Key Success Factors in Each Segment

Within each segment, how do customers choose, and what is needed to survive competition?

5. Analyze Attractions of Broad versus Narrow Segment Scope

● What is the potential to share costs and transfer skills across segments?

● How similar are key success factors between segments?

● Are there benefits of segment specialization?

probably not a good segmentation variable (white and red Honda Civics sell at much the same price); size is a better segmentation variable (full-size cars sell at a price premium over sub-compact cars).

Typically, segmentation analysis generates far too many segmentation variables. For our analysis to be manageable, we need to reduce these to two or three. To do this we need to:

● Identify the most *strategically significant* segmentation variables. Which variables are most important in creating meaningful divisions in a market?

● Combine segmentation variables that are closely correlated. Thus, in the restaurant industry, price level, service level (waiter service/self-service), cuisine (fast-food/full meals), and alcohol license (wine served/soft drinks only) are likely to be closely related. We could use a single variable, restaurant type, with three categories – full-service restaurants, cafés, and fast-food outlets – as a proxy for all of these variables.

2. Construct a Segmentation Matrix   Once the segmentation variables have been selected and discrete categories determined for each, the individual segments may be identified using a two- or three-dimensional matrix. Thus, the European metal container industry might be analyzed in a three-dimensional segmentation matrix (see

FIGURE 4.3 The basis for segmentation: the characteristics of buyers and products
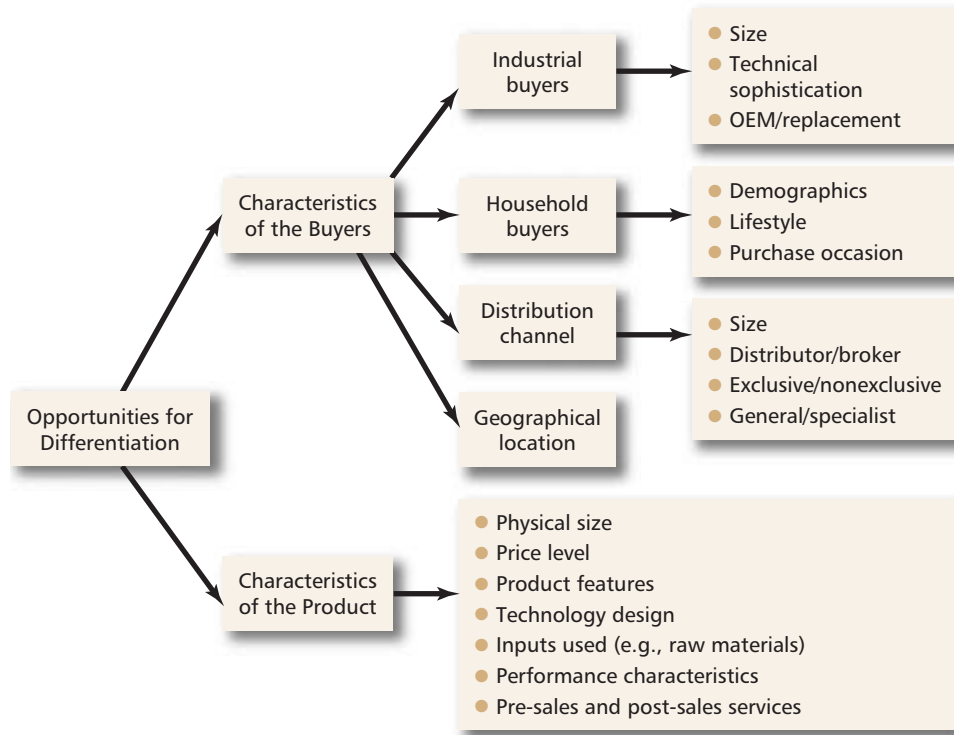
Strategy Capsule 4.3), whereas the world automobile industry might be segmented simply by vehicle type and geographical region (see Strategy Capsule 4.4).

3. Analyze Segment Attractiveness Profitability within an industry segment is determined by the same structural forces that determine profitability within an industry as a whole. As a result, Porter's five forces of competition framework is equally effective in relation to a segment as to an entire industry. Strategy Capsule 4.4 points to some implications of a five forces analysis for certain segments of the world automobile industry.

There are, however, a few differences. First, when analyzing the pressure of competition from substitute products, we are concerned not only with substitutes from other industries, but, more importantly, substitutes from other segments within the same industry. Second, when considering entry into the segment, the main source of entrants is likely to be producers established in other segments within the same industry. The barriers that protect a segment from firms located in other segments are called *barriers to mobility* to distinguish them from the *barriers to entry* that protect the industry as a whole.[48] When barriers to mobility are low, then the superior returns of high-profit segments tend to be quickly eroded. Thus, the high margins earned on sport utility vehicles during the mid-1990s were competed away once most of the world's main auto producers had entered the segment.

STRATEGY CAPSULE 4.4

Segmenting the World Automobile Market

A global automobile producer such as Ford or Toyota might segment the world auto market by product type and geography. A first-cut segmentation might be along the following lines:

REGIONS

PRODUCTS	North America	Western Europe	Eastern Europe	Asia	Latin America	Australia & NZ	Africa
Luxury cars							
Full-size sedans							
Mid-size sedans							
Small sedans							
Station wagons							
Minivans							
Sports cars							
Sport utility							
Pickup trucks							
Hybrids							

To identify segments with the best profit prospects for the future, we need to understand why, in the past, some segments have been more profitable than others. For example, during the 1990s:

● The North American market for small sedans was unprofitable due to many competitors (all the world's major auto producers were represented), lack of clear product differentiation, and customers' price sensitivity.

● Sport utility vehicles and passenger minivans were highly profitable segments due to strong demand relative to capacity, and comparatively few participants.

However, the influx of companies into these segments has eroded margins.

● The luxury car segment is traditionally a high-margin segment due to few players, high product differentiation, and price insensitivity of buyers. However, new entry and excess capacity has increased competition.

● Hybrids have earned big margins due to few players and shortage of capacity relative to demand.

Once we understand the factors that determined segment profitability in the past, we can predict segment profitability in the future.

Segmentation analysis can also be useful in identifying unexploited opportunities in an industry. For example, a segmentation matrix of the restaurant industry in a town or locality might reveal a number of empty segments. Companies that have built successful strategies by concentrating on unoccupied segments include Wal-Mart (discount stores in small towns), Enterprise Rent-A-Car (suburban locations), and Edward Jones (full-service brokerage for small investors in smaller cities). This can be an intermediate step in the quest for "blue oceans" – new markets untainted by competition.[49]

4. Identify the Segment's Key Success Factors Differences in competitive structure and in customer preferences between segments result in different key success factors. By analyzing buyers' purchase criteria and the basis of competition within individual segments, we can identify key success factors for individual segments. For example, the US bicycle market can be segmented on the basis of the age group of the customer (infants, children, youths, adults), price, branding, and distribution channel. Combining and categorizing these segmentation variables results in four major segments, each with different key success factors (see Figure 4.4).

FIGURE 4.4 Segmentation and key success factors: the US bicycle market

| SEGMENT	KEY SUCCESS FACTORS
Low-price bicycles sold primarily through department and discount stores, mainly under the retailer's own brand (e.g., Sears' "Free Spirit")	• Low costs through global sourcing of components and low-wage assembly • Supply contract with major retailer *Leading competitors*: Taiwanese and Chinese assemblers, some US manufacturers, e.g., Murray Ohio, Huffy
Medium-priced bicycles sold primarily under manufacturer's brand name and distributed mainly through specialist bicycle stores	• Cost efficiency through large-scale operation and either low wages or automated manufacturing • Reputation for quality (durability, reliability) through effective marketing to dealers and/or consumers • International marketing and distribution *Leading competitors*: Raleigh, Giant, Specialized, Fuji, Marin
High-priced bicycles for enthusiasts	• Quality of components and assembly, innovation in design • Reputation (e.g., through success in racing) • Strong dealer relations *Leading competitors*: Trek, Bianchi, LeMonde, Cannondale
Children's bicycles (and tricycles) sold primarily through toy retailers (discount toy stores, department stores, and specialist toy stores)	Similar to low-price bicycle segment

5. Select Segment Scope Finally, a firm needs to decide whether it wishes to be a segment specialist, or compete across multiple segments. The advantages of a broad over a narrow segment focus depend on two main factors: similarity of key success factors and the presence of shared costs. If key success factors are different across segments, a firm will need to deploy distinct strategies and may have difficulties in drawing upon the same capabilities. Harley-Davidson's attempt to compete in sports motorcycles through its Buell brand has met limited success.

The ability to share costs across different segments has been a major factor in automobiles where very few specialist manufacturers survive and most of the world's main automakers offer a full range of vehicles allowing them to share costs through common platforms and components. The analysis of a company's optimal segment range is similar to the analysis of diversification versus specialization. We shall return to this issue in Chapter 15.

Vertical Segmentation: Profit Pools

Segmentation is usually horizontal – markets are disaggregated according to products, geography, and customer groups. An industry can also be segmented vertically by identifying different value chain activities. Bain & Company show that profitability varies greatly between different vertical activities and proposes *profit pool mapping* as a technique for analyzing the vertical structure of profitability.[50] For example, in the US automobile industry, downstream activities such as finance, leasing, insurance, and service and repair are much more profitable than manufacturing (see Figure 4.5). During 2003–6, all of Ford and GM's profits were derived from the financial services they offered to dealers and car buyers.

FIGURE 4.5 The US auto industry profit pool
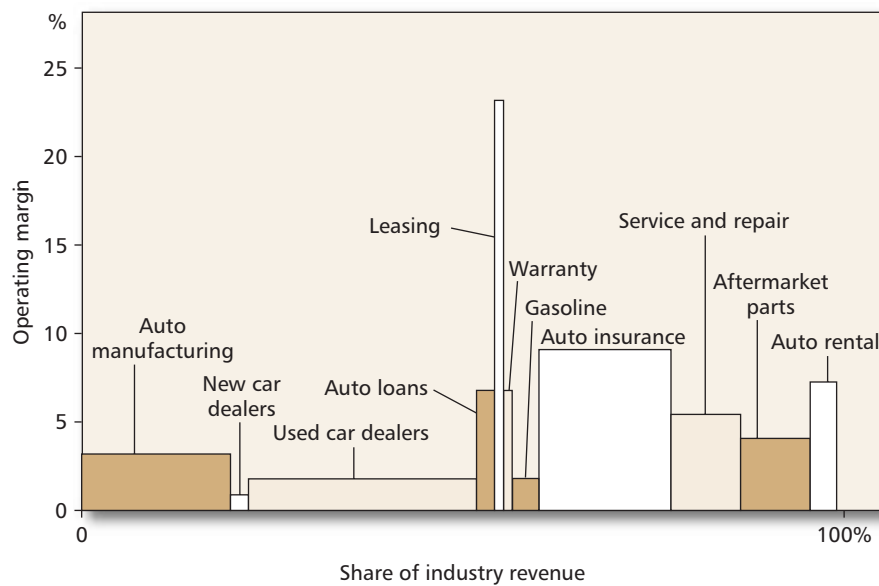
To map an industry's profit pool, Bain & Company identifies four steps:

1 *Define the pool's boundaries*. What is the range of value-adding activities that your business sector encompasses? It may be useful to look upstream and downstream beyond conventional industry boundaries.

2 *Estimate the pool's overall size*. Total industry profit may be estimated by applying the average margin earned by a sample of companies to an estimate of industry total revenues.

3 *Estimate profit for each value chain activity in the pool*. Here is the key challenge. It requires gathering data from companies that are "pure players" – specialized in the single value chain activity – and disaggregating data for "mixed players" – those performing multiple activities.

4 *Check and reconcile the calculations*. Compare the aggregation of profits in each activity (stage 3) with the total for the industry (stage 2).

Strategic Groups

Whereas segmentation analysis concentrates on the characteristics of markets as the basis for disaggregating industries, strategic group analysis segments an industry on the basis of the strategies of the member firms. A strategic group is "the group of firms in an industry following the same or a similar strategy along the strategic dimensions."[51] These strategic dimensions might include product range, geographical breadth, choice of distribution channels, level of product quality, degree of vertical integration, choice of technology, and so on. By selecting the most important strategic dimensions and locating each firm in the industry along them, it is possible to identify groups of companies that have adopted more or less similar approaches to competing within the industry. Figure 4.6 identifies strategic groups within the world automobile industry; Figure 4.7 shows strategic groups within the oil industry.[52]

Strategic group analysis developed out of initial work on the domestic appliance[53] and brewing industries.[54] Most of the empirical research into strategic groups has been concerned with analyzing differences in profitability among firms.[55] The basic argument is that mobility barriers between strategic groups permit some groups of firms to be persistently more profitable than other groups. In general, the proposition that profitability differences *within* strategic groups are less than differences *between* strategic groups has not received robust empirical support.[56] The inconsistency of empirical findings may reflect the fact that the members of a strategic group, though pursuing similar strategies, are not necessarily in competition with one another. For example, within the European airline industry, budget airlines such as EasyJet, BalticAir, Virgin Express, Volare, and Ryanair pursue similar strategies, but do not, for the most part, compete on the same routes. Strategic group analysis is very useful in identifying strategic niches within an industry and the strategic positioning of different firms; it is less useful as a tool for analyzing interfirm profitability differences.[57]

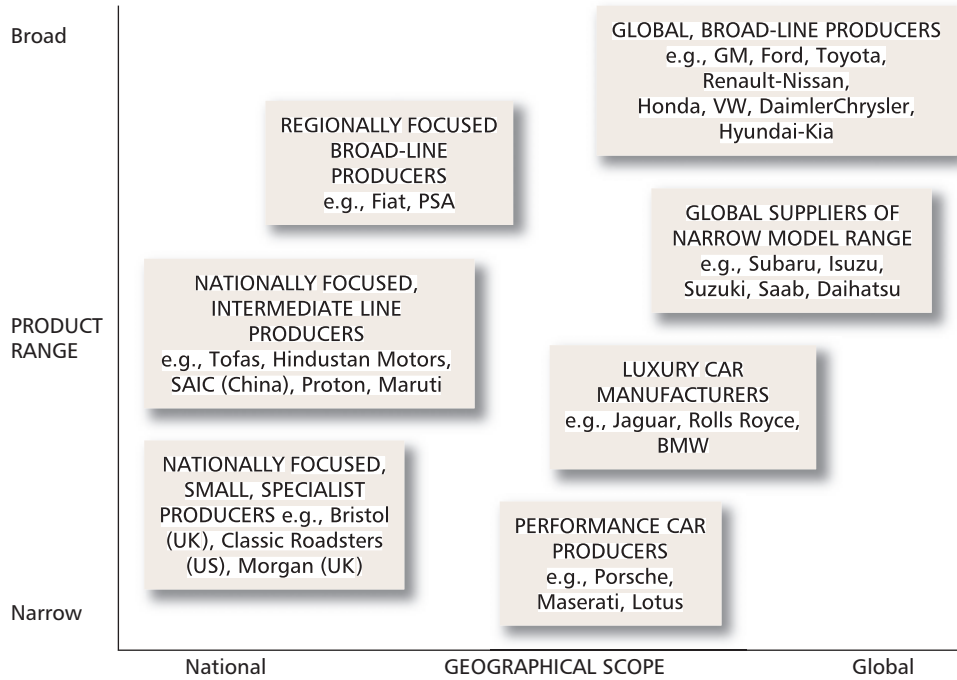**FIGURE 4.6** Strategic groups within the world automobile industry
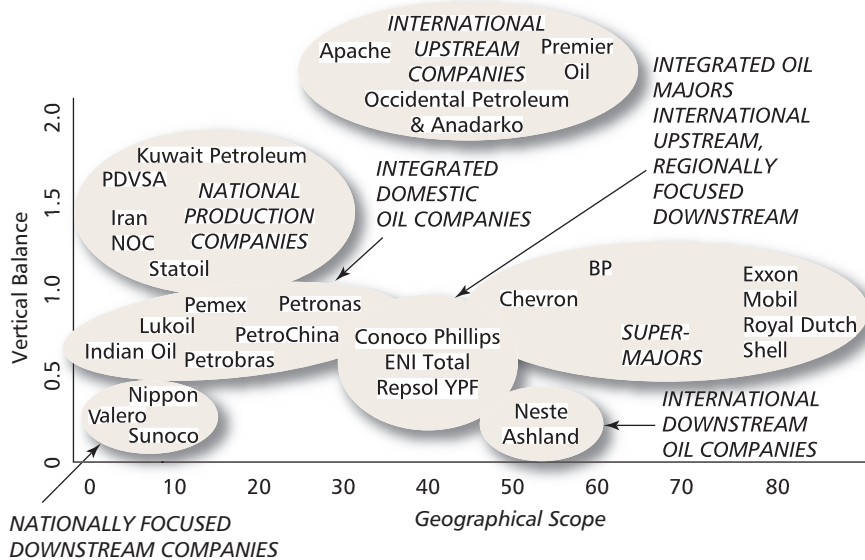

FIGURE 4.7 Strategic groups within the world petroleum industry

Summary

The purpose of this chapter has been to go beyond the basic analysis of industry structure, competition and profitability presented in Chapter 3, and consider the interactive nature of competition and the complexities of industries and markets.

In terms of our capabilities in analyzing industry and competition, we have extended our strategy tool kit in a number of directions:

● We have recognized the potential for complementary products to add value and noted the importance of developing strategies that can exploit this source of value.

● We have noted the importance of competitive interactions between close rivals and learned a structured approach to analyzing competitors and predicting their behavior. At a more sophisticated theoretical level, we have recognized some of the findings of game theory that we can use to understand competition and develop winning strategies.

● We examined the microstructure of industries and markets and the value of segmentation analysis, profit pool analysis, and strategic group analysis in understanding industries at a more detailed level and in selecting an advantageous strategic position within an industry.

Self-Study Questions

1 HP, Canon, Lexmark, and other manufacturers of inkjet printers make most of their profits on the sales of ink cartridges. Why are cartridges more profitable than printers? If cartridges were manufactured by different firms from those which make printers, would the situation be different?

2 In November 2005, six of Paris's most luxurious hotels – including George V, Le Bristol, the Ritz, and Hotel de Crillon – were fined for colluding on room rates. Several regular guests were unsurprised and noted that at these hotels it was always possible to negotiate substantial discounts for the listed rates. How do you think that the hotels involved were able to overcome the "prisoners' dilemma" problem of colluding over rates and how does the "prisoners' dilemma" model explain the eagerness of the hotels to offer individually negotiated discounts?

3 In August 2006, Rupert Murdoch's News International announced its intention of launching a free evening newspaper, *TheLondonPaper* to challenge Associated Newspapers' London *Evening Standard* (daily sales 390,000). Given that the *Evening Standard* was already believed to be loss making, the new competion could be fatal for the paper. What steps might Associated Newspapers take to deter News International from launching its new paper, and if it goes ahead with the launch, what would Associated Newspapers' best response be?

4 During 2006–7, Sony was locked in a ferocious war with Microsoft for leadership in the market for video game consoles. Because of its early lead, Microsoft's Xbox had a substantial lead in installed base, but Sony's PS3 had superior specifications. Sony is anxious to predict how aggressive Microsoft is likely to be in this market. Using the competitor analysis framework in Figure 4.2 and what you know about Microsoft, what predictions can you make about Microsoft's likely competitive strategy in the game console market?

5 How would you segment the restaurant market in your home town? Which segments do you consider to be the most attractive in terms of profit potential?

Notes

1 Adam Brandenburger and Barry Nalebuff (*Co-opetition* New York: Doubleday, 1996) propose an alternative framework, the *value net*, for analyzing the impact of complements.

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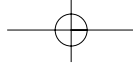
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