

The firm and its environment

[Parts of the World](#), [European Union](#)



CHAPTER 3 The Competitive Environment Learning Objectives Upon completing this chapter, you should be able to: Identify the structural characteristics of the environment faced by the firm and how these drivers influence both competition and value creation Choose the appropriate level of specificity in environmental analysis, depending on the locus of the decision-making group Predict how changes occurring in the environment might influence future competition and value creation Incorporate understanding of environmental changes into the development of strategy Consider options for influencing changes in the firm's environment so as to improve future value creation Analyze customers and competitors to develop a competitive advantage and strategy Appreciate that strategy is realized in the future: decisions are made now but their realization occurs in the future In late 2000, GE proposed to take over Honeywell. Both these firms are U. S.-based, and the value of the merger was \$42 billion. But a merger between two such large firms has global implications and ramifications. Although the U. S. Federal Trade Commission (FTC) had approved the merger, the European Union (EU) decided to oppose it on the grounds that it had the potential to reduce competition in Europe. Its concern was that GE's strong position in the manufacture of jet engines and its ability to offer finance, if added to Honeywell's aviation electronic business, would allow the merged entity to bundle their products together. This bundling would, in the view of the European Commission, amount to unfair competition. At the center of the objection is the fact that GE owns a company, Gecras, which is an aircraft-leasing firm. In 2001, Gecras owned 790 aircraft, which it leased to

airlines, and managed another 321 aircraft for other investors. The concern of the European Commission was that since GE owned this firm, there was the potential for Gecas customers to be forced to purchase GE engines and/or Honeywell electronics. GE's response to the rejection was to offer to put 19.9% of Gecas up for private placement, with this portion worth possibly \$US1.4. Since GE would still own 80.1%, it would maintain the ability to consolidate Gecas earnings. In the face of continued opposition from the EU, GE decided not to pursue the merger.

3.1 Introduction 57

This example emphasizes that managers of global firms must recognize that they operate in multiple countries and that their strategy will be influenced by global as well as domestic considerations. Both GE and Honeywell are U.S. firms, and the U.S. Federal Trade Commission had approved the proposed merger. Nonetheless, the merger did not go ahead due to European Union opposition. Globalization adds a degree of complexity to decision making, and managers responsible for strategy development and implementation must understand this complexity. The example also illustrates how rapidly the business environment might change, shortening the life of a given strategy. Strategy must be reconfigured more frequently to reflect these changes. The EU decision may also have been influenced by considerations independent of the proposed merger, such as decisions by U.S. antitrust authorities on mergers between European firms. However, both the firm and its competitors could influence external changes. GE and its European competitors were active participants in this process, lobbying their respective national governments in an attempt to influence the outcome. Finally, as a consequence of the EU decision, GE

is likely to have to significantly change its strategy regarding aircraft engine and related businesses.

3. 1 INTRODUCTION

The external environment faced by the firm and its business units affects the strategy of the firm, the value of the strategy, and thus the firm's performance. Environmental analysis is therefore not a passive exercise, but rather an active and essential input to strategy development, helping the firm and its business units identify attractive opportunities and make decisions on where and how to compete. The drivers of change are for the most part external to the firm. As the global economy entered the new century, changes were taking place on multiple fronts at a very fast pace. Some of these changes made traditional business models and tools outdated, changing the rules for existing competitors and challenging the assumptions of others, both new and old. In this chapter we review some approaches that can guide us as we wrestle with the challenges of developing strategy in this fast-changing environment. Strategy development requires the firm to understand what critical variables are changing, the pace at which these changes are occurring, and their likely impact on the firm, as illustrated in Figure 3. 1.

1. Select key variables Forecast pace of change Estimate impact

Strategy Figure 3. 1 Process of Environmental Analysis 58 Chapter 3. The Competitive Environment

Select Key Variables First, managers need to select the key variables that can affect their firm or business. What these are will depend on the firm and the judgment, knowledge, and intuition of the senior managers in identifying what is relevant. Consider, for example, forecasting the demand for automobiles. Knowledge of such variables as household income, interest rates, and consumer confidence would

probably be very helpful. On the other hand, in forecasting the demand for baby food, the birth rate would be a key explanatory variable. So what is relevant and important depends on the business concerned. Forecast Changes Second, we need to estimate, or forecast, the nature and pace of these changes. If forecast changes are likely to occur in the distant future, we may just monitor. Continuing the baby food example, birth rates in much of the world are declining. This is a relatively slow process, occurring over many years, so while its impact in any year is relatively minor, its long-term impact is substantial. Other changes, such as those in data storage and communications, are occurring very rapidly, so the firm's response must be more immediate. In some industries the problem is to identify points of discontinuity, times when change is occurring very rapidly. Innovations such as the PC or electronic funds transfer, which generate entire new industries and place established firms under considerable pressure, are examples. 2 In addition, some of these changes, such as population growth, will be relatively easy to forecast while others, such as changes to the Russian legal system, are much less predictable. Estimate the Impact of the Changes Finally, we need to estimate the potential impact of these changes on the firm. Some changes will have a major impact, some a very minor one. The firm should allocate its environmental scanning resources toward those changes that have both a high probability of occurring within the relevant time horizon and a major impact on strategy. A variety of forecasting techniques may assist in this process. For example, in dealing with the trend changes of the type discussed in Chapter 1, times series and regression models can prove very helpful. 3 The reason for trying to understand the

changing world is that strategy and strategic decisions are realized in the future, not the present. Strategic decisions are made now, but their implications are not realized until the future. The success or otherwise of a strategy depends not on the state of the world today but on the state of the world in the future. In analyzing the external environment faced by a firm or a business unit, we distinguish three levels, designated as the remote, industry, and competitive environment, as shown in Figure 3. 2. Successful strategy development requires an understanding of changes at all three levels.

Remote environment: The broad social/technical/economic environment in which the firm competes. This environment is global in nature, exerts a powerful influence on strategy, and in many instances is slow-acting. Due to the breadth of these changes, they can be expected to affect a number of industries.

Industry environment: Changes that impact on all competitors in a specific industry. Examples are changes in entry barriers from changing government regulations, 3. 1 Introduction Remote 59 Industry Competitive FIRM Environment Environment Environment Figure 3. 2 Environmental Analysis technology, or the development of substitute products. Such changes influence all firms in the industry, possibly in different ways.

Competitive environment: Changes in customers and direct competitors that influence the competitive strategy of the business unit, such as the development of new products by competitors, the emergence of new channels of distribution, and the rise of new customer values. Which level of analysis is required depends on the level of strategy that we are considering, corporate or business unit, as shown in Figure 3. 3. Strategy level Corporate Analysis level Remote What analyzed Broad environmental

trends affecting all business units Structural changes in the industry
Environmental trends influencing the specific SBU Suppliers, entrants,
substitutes Customers, competitors Strategic decisions New opportunities,
resource allocation among SBU's Resource allocation Competitive strategy
Competitive strategy Competitive advantage Industry Business unit Remote
Industry Product/market Figure 3. 3 Levels of Environmental Analysis 60
Chapter 3. The Competitive Environment When developing corporate-level
strategy, key decisions are which businesses should the corporation be in,
what should be its geographic scope, and how resources should be allocated
among the business units. At the corporate level, analysis will generally be
undertaken at two levels, the broad remote level and an analysis of
developments in each industry in which the firm competes. Flowing from the
remote analysis is a better understanding of major threats to the firm or
opportunities that it may wish to pursue. For example, the firm may decide
to move a substantial element of its manufacturing offshore to China. Since
it is likely that such an investment may take several years to become
profitable, the decision must incorporate a view on a number of broad
economic variables, such as political stability in China and future exchange
rates. Industry analysis is undertaken at the corporate level to ensure that
the corporate level has a sound understanding of the attractiveness of the
industries in which its various business units compete and thus can form a
view on prospective profit levels of its businesses. Such decisions, whether
to enter new businesses or to commit major resources to an existing
industry, must be based on anticipated results for many years into the
future, possibly as long as 5 to 10 years. The firm must have a view of the

future before it can commit these resources, even if there is considerable uncertainty. Business-unit managers need to undertake analysis at all three levels. Strategy for a given business unit will be influenced by certain developments in the remote environment, although which elements are critical will depend on the specific business unit. They must also understand changes specific to their industry. As we have noted, a business unit must create value, with revenue greater than its costs. But it is possible for the industry structure to be such that while the firm creates value, it cannot capture that value for itself. If the business is in an extremely competitive industry, buyers may capture all the value, with all productivity improvements and cost reductions passed on to customers. Alternatively, it may be that a firm in another industry has developed a substitute product with price/performance characteristics that will have a major impact on the revenue, and thus profitability, of the business. Thus an understanding of the nature of the industry, and how this is changing, is essential in developing strategy at the business-unit level. Strategy at the business-unit level is interlinked with the concept of competitive advantage and should focus on developing such an advantage. This requires a detailed understanding of customer needs and how these differ across customer segments, how these needs are changing, and likely future strategies of competitors. We begin this chapter with a review of the broader or remote environment and the various forces at work therein. We then focus on the more immediate industry environment, reviewing some of the analytic tools that can bring more insight to our understanding of that environment. Finally, we look at the firm's competitive environment, focusing on its

relationships with its customers and direct competitors and the ways in which these are likely to change in the future. We conclude by summarizing the challenge to managers as they contemplate the likely changes that lie ahead. In considering the subject matter in this chapter, there are two key ideas you should bear in mind. First, do not assume that the future will be a mere extrapolation of the past. Many alternative futures are possible, for the future does not yet exist. Where we are uncertain about the future, it may be very beneficial to consider alternative scenarios, opening our minds to the idea that change is inevitable and that we need to be flexible when changes cannot be accurately forecast. 4 Second, you should recognize that since the future does not yet exist, we might be able to influence it through our decisions. Do not assume that the remote or industry environments are not subject to influence. Some of the most successful competitive strategies have involved doing that very thing. 3. 2 The Remote Environment 61 3. 2 THE REMOTE ENVIRONMENT There are obviously many different aspects of the remote environment that can have significant impact on the operation of the firm, its competitors, and its customers. A simple acronym that can assist us in overviewing these aspects is the PESTLE model, so called because it covers the political, economic, sociocultural, technological, legal, and environmental aspects of the overall business environment, as shown in Figure 3. 4 Figure 3. 4 depicts the firm as comprising a number of strategic business units to reinforce our emphasis that the analysis of the remote environment will be undertaken at both the corporate and the business-unit level. Since the firm's strategic business units (SBUs) operate in different product markets, they each need to

undertake their own analysis of the remote environment, analyzing the variables and changes appropriate to them. At the same time, corporate-level staff will also be analyzing the environment, possibly to identify merger and acquisition candidates or other growth opportunities. For example, both corporate and business-unit managers at du Pont may be monitoring economic developments in Malaysia. When this occurs, the firm needs to ensure that these two entities coordinate their activities. Firms often utilize corporate support staff to develop a view on relevant future variables, and all business units adopt that view. For example, corporate economic staff may forecast future exchange rates, and that view is adopted throughout the firm. Political Governments set the rules for business in areas such as competition policy, taxation policy, multinational agreements, and others, as shown in Table 3. 1. Historically, governments intervened in national economies both to pursue political ends and to redress the perceived failure of market mechanisms to fulfill consumer welfare goals. In some countries, such as the United States, this intervention has involved government regulation while in others, such as the United Kingdom and France, state ownership of business corporations was vigorously pursued. In still other countries, such as India and Japan, Political Environmental Social

SBU 4 SBU 1 SBU 3 Multibusiness firm SBU 2 Legal Economic Technological

Figure 3. 4 Framework for Analysis of the Remote Environment 62 Chapter 3.

The Competitive Environment TABLE 3. 1 Selected Political Variables

Competition policy Taxation policy Privatization Regulation of financial markets Employment law Government stability Multinational agreements Government spending state-driven mercantilism to increase exports and

reduce imports has been the pattern. In Japan, MITI was a key element in its drive for economic advancement. For much of the 20th century, increased government involvement was the norm around the world. Since the early 1980s there has been a marked shift in competition policy, with an increasing reliance on free markets. Regulatory barriers around the world in such industries as airlines, banking, railroads, insurance, telecommunications, and trucking have been reduced. Governments seem to have realized that the regulations designed to protect consumers or competitors in an earlier era were no longer beneficial. Far too often regulation locked in inefficient competitive structures and restricted entry and innovation, denying consumers the benefits of competition. Such regulation also affected the liquidity of financial markets and the rights of shareholders. The EU is attempting to rewrite the takeover code to permit a larger number of hostile mergers, a move being strongly resisted by Germany. The EU proposals include that companies targeted by hostile bids consult shareholders before executing a defensive strategy, that the board maintain a neutral stance during a takeover bid, and that the board consult shareholders before taking "poison pill" steps to head off unwanted advances from another corporation. 5 If implemented, these measures may prevent the boards of European firms from rejecting takeovers that are in the interests of small minority shareholders. On the other hand, as global competition has increased, some legislation has come to be viewed as limiting the ability of corporations to compete on a global scale. While this enforcement policy has changed somewhat, there may still be some way to go. Thus U. S. regulations have constrained overseas firms attempting to

operate in the United States, and a similar pattern exists in the United Kingdom. RWE is a German utility, primarily in water. In the last few years it has been attempting to expand internationally, since it believes that there are limited investment opportunities in the domestic German market. In 2000 it bought Britain's Thames Water and in 2001 purchased American Water Works, the largest water company in the United States, for \$US4.6. In addition to becoming global, RWE is also attempting to become a multiutility company, but current U. S. law prevents the company from moving into gas or electricity. Interbrew, the Belgian brewer, was ordered by the U. K. government to sell Carling, Britain's most popular beer, as the price for the approval of the £2.3 (\$US3.5) takeover of Bass Brewers. Carling was later bought by Adolph Coors, America's third-largest brewer for £1.2. 6 Another major area where government action affects a firm's strategy is the country's taxation regime. Corporate tax levels vary around the world; as a consequence, some 3.2 The Remote Environment 63 firms have relocated their head office to such low-tax countries as Liechtenstein or Monaco. Another issue to consider is which income will be taxed in which country. U. S. firms are liable for U. S. tax on their worldwide income. The tax regime may also affect the repatriation of profits. Australia is attempting to renegotiate its joint tax arrangements with the United States, which currently applies a significant tax to profits earned in the United States by subsidiaries of Australian firms. Germany has changed its tax system by removing any capital gains tax when companies sell their investments in other firms. 7 The impact of this has been small due to the decline in share markets, but it is expected to have greater impact in the

future, when there could be a major reshaping of the German industrial landscape as shares in several of that nation's companies change hands. In many countries, previously government-owned organizations such as airlines and utilities are being privatized and joining the private sector as governments adopt the view that private enterprise is more effective than government in promoting consumer welfare. This trend started in Europe in the 1980s and is now occurring even in such previously unlikely countries as the People's Republic of China (PRC). This trend has been aided by political change, such as the collapse of communism in the Soviet Union and Eastern Europe. 8 Countries are increasingly entering into multinational agreements through bodies such as the World Trade Organization (WTO), the International Monetary Fund, and the United Nations. After many years, China has finally been admitted to the WTO despite the fact that this opens up many of its inefficient state-owned enterprises to global competition. In Europe, the European Union is taking on increasing importance as individual nation-state members are subject to its regulations, while many other countries have joined together to form economic and political unions, as shown in Table 3. 2. Looking forward in the political arena, we expect further attempts to increase economic cooperation as the world economy becomes ever more tightly integrated. There is a risk that the world may be moving toward a structure of regional trading blocs, as shown above, and that economic warfare might break out between the blocs. Most analysts consider this unlikely, but it is a scenario that prudent global managers should consider, particularly as they expand global sourcing. The ability of individual national governments to pursue independent economic

policies has undoubtedly been limited by increased economic interdependency and emerging international institutions. The political stability of a country is an important issue when considering investment decisions. In the recent past there has been considerable instability in such countries as Argentina (defaulted on its international debt), Yugoslavia (has split up into several independent countries), and the Middle East (affected by war and terrorism).

TABLE 3. 2 Asean European Union Regional Trading Blocks Brunei Darussalam, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam Austria,* Belgium,* Cyprus, Denmark, Estonia, Finland,* France,* Germany,* Greece,* Ireland,* Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, Czech Republic, Italy,* Luxembourg,* Portugal,* Spain,* Sweden, the Netherlands,* United Kingdom

Canada, Chile, Mexico, United States Argentina, Brazil, Paraguay, Uruguay

NAFTA Mercosur * = euro currency. 64 Chapter 3. The Competitive Environment Economic For most products, market attractiveness is strongly influenced by the size and growth of demand, which in turn is influenced by the country's economic well-being. There are a number of economic variables that may be relevant in determining opportunities, as shown in Table 3. 3. Many related measures of economic well-being are available, but critical metrics include total GDP as well as per-capita measures such as GDP per capita and disposable income per capita. In addition, since we are interested in the future, we would also be concerned with the growth rates of these economic variables. China is an attractive market for many firms not because its GDP per capita is high but because its growth rate is high and it is expected to become a major market in the future. With increasing

globalization and interconnectedness among countries, the effects of an economic downturn in one country are no longer confined to that country alone. During the late 1990s, after having enjoyed strong economic growth for many years, such "Asian Tigers" as Indonesia, South Korea, and Thailand suffered recessions and unstable financial markets that reverberated around the world. Of equal importance to strategists is not only the mean per-capita income but also its distribution across the population. In India, although average incomes are still quite low, there is a large middle class, estimated at over 200 million people, representing a significant market opportunity for quite sophisticated products. Major PRC conurbations such as Shanghai and Beijing provide similar opportunities. The economic development of China has exerted significant pressure on the rest of the world, particularly since China has average manufacturing labor costs of \$US0.6 per hour. Along with European and U. S. companies, Asian firms are also establishing production facilities in China. Half the information technology products of Taiwanese firms are currently made in China. This movement has resulted in many Asian firms attempting to change their position in the value chain. Manufacturing is outsourced to China, and Asian firms are attempting to concentrate on marketing, design and innovation, development of differentiation and brand image, and intangibles. 9 For global firms, exchange-rate movements can have a major effect on profitability and costs. A resources company may find that its revenues are in U. S. dollars but its costs are in South African rand. Changes in the exchange rate can have a major impact on profitability unless the firm takes some hedging action. Firms use a range of derivatives, such as

currency swaps, to attempt to reduce risk, as we discuss later in the book. The European Union, the most advanced grouping of nations, introduced a single currency, the euro, in 12 member countries on January 1, 2001. For the first time, Euro-

TABLE 3. 3 Selected Economic Variables

GDP	GDP per capita	Disposable income	Interest rates	Exchange rates	Inflation	Unemployment	Balance of payments	Savings rate	Capital productivity	Labor cost and productivity
3. 2	The Remote Environment	65	pean consumers will be able to directly compare prices in different countries without having to worry about exchange rates. At the same time, firms will find it easier to assess the performance of subsidiaries operating in different countries, since they now all use the same currency. For example, a Dutch business such as Philips can more easily assess the financial performance of its Italian subsidiary, which now reports in euros. This common currency places restrictions on the member states, since if a member country faces economic difficulties, it is limited in the extent to which it can use exchange rates or interest rates in monetary policy. These economic variables have to be treated holistically. For example, in 2002 there was concern about the sustainability of the U. S. economy and whether the United States was moving into recession at the same time that its trade deficit reached the unsustainable value of 5% of GDP, possibly plunging the world into a period of economic instability. Given the uncertainty about the future performance of the U. S. economy, together with the lack of transparency in audited accounting data of U. S. firms, it was feared that foreigners would no longer be prepared to support this trade deficit with inward investment.	10	Not only were foreigners investing less in U. S. shares; acquisitions of U.					

S. Investments by foreign companies also slowed, reflecting concern about the future of the U. S. economy. As a result of these trends, there was a significant fall in the value of the U. S. dollar. Sociocultural Strategy will also be influenced by changes in a number of sociocultural variables, as indicated in Table 3. 4. Culture can be defined as “ the distinctive customs, achievements, products, outlook, etc. of a society or group; the way of life of a society or group. ”¹¹ The society or group may be the inhabitants of a nation state, such as Chile; a geographic region within a nation state, such as the South or the Midwest in the United States; a geographic region encompassing multiple nation-states, such as the Hispanic countries; or a people without regard to geographic location, such as the Armenian, Jewish, and Chinese diasporas. Furthermore, a single individual may belong to multiple groups, each having different cultures, such as Turkish immigrants domiciled in Germany. Cultures differ from one another on many bases, such as language, religion, values and attitudes, education, social organization, technical and material culture, politics, law, and aesthetics. They also change over time. Furthermore, within any individual cultural group, subcultures develop that may reflect both the broad group culture but also specific subcultural elements, such as baby-boomers and Generations X and Y. ¹² The buying behaviors of these different cultural groups vary significantly. In Western families,

TABLE 3. 4 Selected Sociocultural Variables

Culture	Population size and growth	Population age and ethnic mix	Lifestyle changes	Social mobility	Educational levels	Labor market participation rates	Religion	Attitudes toward technology
Country	Australia	Japan	Niger					

66 Chapter 3. The Competitive Environment

TABLE 3. 5 Country Australia Japan Niger

Spain United States Median Age by Country Median Age, 2000 35. 2 41. 2 15. 1 37. 7 35. 5 Median Age, 2040 42. 0 53. 0 18. 3 54. 6 41. 0 Source: " UN Population Statistics": www. un. org. for example, women traditionally did the shopping for many products and services, whereas in rural Bangladesh, men do the shopping. Population size, growth, and distribution must also be analyzed. Significant strains may result from such demographic shifts. One of the best known is the impact on social security systems as birth rates drop, longevity increases, and the number of older beneficiaries rises relative to the number of contributors. Not only does this change raise possibly divisive strains; it has significant economic and political ramifications. As shown in Table 3. 5, the median age in many countries is forecast to increase dramatically, raising the possibility of a crisis in social security systems. Indeed, some countries are considering raising their immigration rate to reduce the median age. In other countries, a growing proportion of the older population have private pension arrangements, which will ameliorate the state-funded pension problem. In turn, these demographic changes create new opportunities and relationships for insurance and mutual funds. Other socioeconomic changes that may need to be analyzed are lifestyle changes, such as the increasing sophistication of customers, higher levels of education, better access to information, and a greater acceptance of and familiarity with technology. The advance of automation and information-based industries typically leads to (relatively) decreased demand for unskilled labor and increases in demand for highly skilled technical and professional labor. The net result is larger income differentials within societies, differentials that carry a number of social

implications, such as permanent unemployment of those individuals who cannot cope with the modern knowledge-based society. Another component of these changes is the shifting attitude toward globalization and the tension between localism and globalism. On the one hand, individual groups both seek their own identities and act out their group membership in various ways. Important bases for group membership include religion and nationalism. Thus the growth of Muslim and Hindu fundamentalism is an important factor in the Middle East/North Africa and India. In such diverse areas as Turkey, Wales, the Basque country of Spain, and Brittany in France, these local and regional pressures are evident. Concern has been raised about American influence and Western influence in general in many countries. The French government is fighting what some regard as a rearguard action against what it views as an American cultural invasion in general and an anglicizing of the French language in particular. However, concern is not limited to language. In late 1999, protests in many European countries against genetically modified foods led to rejections of and/or bans on Monsanto's Roundup Ready soybean seeds. In August 1999, several McDonald's franchises in Belgium and France were badly damaged or destroyed by protesters angry about the "globalization of food." Protesters angry at the impact of globalization have disrupted several WTO meetings. Malaysia and other Asian countries have also expressed concern at the "Westernization" of their societies and have issued calls for a return to Asian values.

3. 2 The Remote Environment 67 To a large extent people don't notice culture on a day-by-day basis, but it becomes very evident when they encounter different cultures as firms move from domestic into foreign

markets. Here, the issue is less one of cultural change than it is of attempting to understand a culture that is different. Companies acting in an ethnocentric manner may ruin an otherwise successful strategy implementation. Technological Virtually all observers of the business scene agree that not only is the pace of technological change extremely fast; it is accelerating. If we were to arbitrarily select the end of World War II as a start date, we would find that many of the products and services we take for granted today have been developed since that time. A partial list includes color television, dry copier machines, synthetic fibers and almost all plastics, cellular telephones, computers, integrated circuits, microwave ovens, passenger jet aircraft, communication satellites, virtually all antibiotics and numerous other life-saving drugs, ATMs, space travel, video and audio tape recorders, and CDs and DVDs. Many of these innovations represented disruptive technological change that fundamentally restructured industries. Some technological variables are shown in Table 3. 6. Information technology is having a pervasive impact on firms and their strategies, driven by the rapid and continuing reductions in price of these products. This rapid decline in costs is well expressed by Moore's law—that the number of transistors on a computer chip doubles every 18 to 24 months and thus that the speed of microprocessors, at constant cost, also doubles every 18 to 24 months. Although some observers anticipate that exponential gains in chip performance will eventually slow down, most experts agree that Moore's law will govern the industry for at least another 10 years. Intel has reportedly developed a chip with a speed of 10 gigahertz at room temperature, which is a major improvement over current (2002) speeds of 2.2 gigahertz. Other

technological developments have resulted in faster processing speeds as well as and reduced heat and power consumption. 13 Moore's law means that computing power will become ever faster and cheaper. Not only will increasing numbers of people around the world have access to powerful computing, but computer power will be built into devices other than computers themselves. Already, computers allow such diverse products as vehicles, aircraft, surgical equipment, and elevators to operate more efficiently, predictably, and safely. In the future we may even see computer chips in packaging as costs continue to decline. 14 These applications reï-, ect the effects of the convergence of computing, communications, and

TABLE 3. 6 Selected Technological Variables

Information technology R&D spending New products New technology Global technology transfer Technological advantages of a country The Internet Incremental and disruptive technologies Biotechnology 68 Chapter 3. The Competitive Environment 1 0. 9 0. 8 Capital Investment Rate 0. 7 0. 6 0. 5 0. 4 0. 3 0. 2 0. 1 0 1965 1970 1975 1980 1985 Year 1990 1995 2000 2005

Figure 3. 5 Ratio of IT Investment to All Other Investment by U. S. Firms " Fixed Assets Tables, Table 2. 7, Historical-Cost Investment in Private Fixed Assets, " Bureau of Economic Analysis, 2002. www. bea. doc. gov. media technologies as well as the growth of the knowledge economy, a topic to which we will return in Chapter 5. The changes above are illustrative of the impact that information technology is having on business practices. This impact is also manifest in the changing mix of capital investment. As shown in Figure 3. 5, U. S. ï-ïrms have been allocating an increasing proportion of their capital expenditure to information technology, computer hardware and

software, and communications equipment. This chart shows the proportion of investment in information-processing equipment and software to investment in all other fixed assets by U. S. businesses over the period 1970—2001. As can be seen, this ratio has increased dramatically, from 31. 7% in 1970 to 85. 4% in 2001, although there was a slight reduction in 2000 due to 1999 overspending in anticipation of Y2K. In dollar terms, IT investment has increased from \$16 billion in 1970 to \$403 billion in 2001. The Internet is a major new technology affecting the business landscape. The Internet is, or can be, many things. It is a distribution channel, a communications tool, a marketplace, and an information system. For example, it can alter the way in which the firm communicates with its customers and suppliers, the way in which it collects customer data, and the amount of information available to customers. We have already noted that firms are created because the costs of organizing and maintaining them are lower than transaction costs in the market. One of the implications of developments in computers, networks, communications, and data storage is that they have changed transactions costs and hence are opening up the possibility of significant industry restructuring. These developments may also create disintermediation, which means that the function of an intermediary can be dispensed with. When buyers and sellers of, say, insurance, can find each other easily over the Internet, who needs intermediaries such as brokers? These changes are most likely to occur in industries where “ products” can be digitized, among which are personal financial services. Table 3. 7 shows the average cost per transaction in retail banking for five different modes. As the data indicate, there is a substantial incentive for retail banks to move to other channels of

distribution, but they are 3. 2 The Remote Environment TABLE 3. 7 Mode In Branch Teller Telephone; Customer Service Office ATM (Excluding Deposits) Telephone; Voice Response Internet Source: Internal Costing Data; Major Australian Bank 69 Average Cost per Transaction in Retail Banking Cost/Transaction (\$AU) 5. 40 5. 20 0. 60 0. 16 0. 06 constrained by their legacy assets of a branch network. A new entrant without this highcost structure may find barriers to entry have been reduced, the new barrier being technology, customer acceptance of technology, and data security. Similar developments have occurred in industries such as hotels, car rentals, and share trading, where online trading now accounts for about 20% of all trades. The Internet is an example of Metcalfe's law, namely that the value of a network to an individual user is proportional to the square of the number of users. Hence the interest in interconnection, open standards, and the development of new protocols such as XML, which carries information on what data are being transmitted as well as the format of that data. At the same time, the Internet has increased firms' concern with data security from external hackers or internal staff abusing the system. Data security is seen as a major obstacle to the widespread adoption of e-commerce, and developments in sophisticated encryption systems will be critical. Major changes can also be expected in electronic markets, either business-to-business (B2B) or business-to-consumer (B2C), where firms interact with actual and potential customers and suppliers over the Internet. Such electronic markets are estimated to capture cost savings of 10% to 20%, but they also possess other benefits. Sellers can reach more customers, gather better data, and communicate more effectively. Buyers are able to

compare products and prices from different suppliers, which may increase price competition between suppliers. Underlying all this is the capacity to reduce costs through better information and better systems. In the United States, the ratio of inventories to shipments across the economy has fallen from 2.0 in 1970 to about 1.2 in 2000, representing a huge increase in capital productivity. 15 Firms unable to achieve such improvements operate at a considerable disadvantage. While future developments of these exchanges is uncertain, it is expected that they will grow in scope and importance, driven by developments in information technology and its cost-reducing potential. At the same time, we expect to see a range of structural forms of these exchanges. Some are likely to be vertical, with all members in a single industry. In the United States, Ford, GM, and DaimlerChrysler formed such an exchange with combined purchases of \$US\$240. The basic aim was to reduce costs in the supply chain, while forcing down supplier prices. 16 Others will be horizontal, based on products that span several industries. These exchanges will certainly be scrutinized by regulators to ensure that firms do not engage in anticompetitive behavior. Many technological innovations are characterized by nonlinear growth patterns and often follow a logistics adoption curve. Managers who project initially low growth rates into the future may be surprised as inflection points are passed and rapid growth occurs. 17 As Christensen has noted, technological change can be categorized as sustaining or disruptive. 18 Sustaining technologies improve the performance of established products along the dimensions that mainstream customers in major markets 70 Chapter 3. The Competitive Environment have historically valued. This type of technological change

rarely precipitates the failure of established firms—it represents a continuation of the present and is seen as more controllable by management. Disruptive technologies are those that bring a new and very different value proposition to the customer. One such example is digital cameras; another is discount brokerage. Such products have features that are highly valued (initially) by a limited number of customers, often customers new to the market. These new products are often seen as inferior by existing customers, initially underperforming in comparison with established products, but they are often simpler, smaller, cheaper, and easier to use than existing products. In new applications, these attributes may have significant value. Such disruptive technology may precipitate the failure of leading firms since they pay too much attention to the issue of cannibalization of their existing products. The real problem often arises from their lack of awareness of the rate of technological change in, and consequent functional improvement of, the new technology. Since it is difficult to analyze such markets, established and bureaucratic firms are unlikely to give them the attention they require. Business history is also replete with examples of major companies that turned down inventions that were ultimately extremely successful. Chester Carlson, inventor of xerography, was turned down by IBM, RCA, A. B. Dick, and many other companies before Joe Wilson, CEO of a relatively small Rochester company, Haloid Corporation, had the courage to bet the future of his company on Carlson's invention. 19 All major appliance manufacturers turned down James Dyson, inventor of the bagless vacuum cleaner, when he approached them with his invention. He eventually started his own company, which by

2001 was the market leader in the United Kingdom and in 2002 entered the U. S. market. 20 Legal As we saw in the opening example, global firms must pay considerable attention to legal considerations and ensure that their strategies comply with legal requirements, as illustrated in Table 3. 8. The legal framework of a country influences firm strategy through its laws regarding such areas as mergers and acquisitions, capital movements, industry regulation, and employment conditions. Legal frameworks differ across countries. The United States and the United Kingdom have well-developed legal systems based on precedence and case law. In most of Europe the basis of the legal system is the Napoleonic Code. Other countries such as Russia are still trying to develop a strong and independent legal system. Similarly the Peoples Republic of China is struggling to develop a commercial code, and the laws governing business activities are still in evolution. Different countries have different views on the social responsibility of the firm. The EU is strengthening the obligation of European firms to "inform and consult" workers' representatives about company strategy, and the EU employment commissioner has suggested that staff are the main stakeholders in a firm. This may affect the ability of a firm to close a plant or reduce staff in the EU, as experienced by Marks and Spencer when it attempted to close several stores in continental Europe. Some managers regard these requirements as an infringement on the right to manage, since it will make labor markets less flexible.

Proposed regulations include consultation about layoffs in all companies with

50 or more staff after 2008. 21 Many developed countries have an active and politically independent regulatory framework. In the United States, bodies such as the Environmental Protection Agency (EPA), Securities and Exchange Commission (SEC), and Federal Trade Commission (FTC) are powerful actors that have to be considered when establishing strategy. During the decade up to 2001, Microsoft was under investigation by the U. S. Justice Department, with the final resolution being made in the court. In the EU, there are several directorates-general responsible for defined areas of regulation. There is a D-G Competition, a D-G Environment, and a D-G Health and Consumer Protection. The latter body is responsible for food labeling in general and labeling of genetically modified foods in particular. 22 The investment banking and accounting industries in the United States are under considerable pressure from the Department of Justice and the Securities and Exchange Commission to change their practices. There is concern about conflict of interest: can an audit firm provide an audit that is unbiased and independent when it also engages in consulting work for the same client? Can an investment bank provide unbiased investment reports on a firm when it is also soliciting for consulting work, mergers, and acquisitions or IPOs with that same firm? In late 2002, we saw most of the large accounting firms split off their consulting business, with PWC selling its consulting business to IBM for \$US3.5. 23 Some professional bodies also have a major impact on firm behavior. International accounting bodies are attempting to get firms to record all financial assets and liabilities at their current market value rather than at their historical cost, since financial markets are now more volatile. This would have major

implications for banks. The value of loans would fluctuate with changes in interest rates, and banks could be forced to write down loans if their credit quality was reduced. These changes would have to be incorporated into the bank's income statement, possibly producing a large accounting loss.

Looking at likely future trends, we believe that countries are likely to maintain policies that lead to competition in product markets. On the other hand, in such areas as health and safety, the environment, rights of various minorities, and so on, it seems likely that firms will face more stringent standards in the future. For example, the British government is considering mandatory paid paternity leave for fathers. Further, globalization is beginning to have significant repercussions on the legal environment. The U. S. FTC prevented the takeover of a British firm, BOC, by a combination of L'Air Liquide (French) and Air Products (U. S.). Environmental Senior managers can expect to have to deal with a variety of environmental issues that may have significant impact on their companies' future prospects, as shown in Table 3. 9. Executives in the automobile industry, for example, have been subject to increased pressure from governments, environmental groups, various single-issue advocacy groups, and the public at large. Indeed, the European Union has proposed that car manufacturers bear the cost of taking back scrap cars from 2003 onward and be required to recycle or reuse 80% of a car's weight from 2005 onward. The industry and some governments- including those of Britain, Spain, and Germany-have resisted this proposal. Their

counterproposal is that car manufacturers should bear such a cost, but only for new cars sold after the law is finally passed. Some firms, such as BP, are committed to reducing their impact on the environment; in fact, their stated goal is to do no damage to the environment. In pursuit of this goal, BP claims their verified greenhouse gas emissions were 10% lower in 2001 than in 1990. 24 Changes in the physical environment, roughly viewed as comprising the natural and man-made environment, affect our daily lives and the functioning of our organizations. Natural and man-made forces coexist in an uneasy equilibrium but whereas some natural forces seem independent of human action, other changes in the natural environment result from it. More fundamental changes may have a variety of consequences. For example, heightened awareness of the damage to the natural environment caused by pollution has given rise to new industries such as pollution control and renewable energy. In countries such as France and Germany, pollution has become an important political issue and legislators are elected as members of "green" parties. Indeed, in many countries, the strength of the environmental movement has led to strong legislation affecting firms' production systems, products, and packaging. In Germany, firms are responsible for the disposal of packaging in which their products are shipped. Perhaps as a consequence, German consumers used 11% less packaging in 1995 than in 1991, while disposable packaging use in the United States grew by 13% over the same period. 25 In response to these pressures, some individuals have proposed that business firms should adopt the concept of the triple bottom line, suggesting that the firm must pursue social, environmental, and economic objectives. 26

Although the PESTLE approach makes the elements of a remote environment scan easy to remember, there is a potential danger. Many of the changes we have discussed are in fact interrelated. Such technological innovations as the computer or the World Wide Web have enormous sociocultural and political implications. Legal-regulatory decisions may have vital economic, environmental, and political dimensions, and so on. There is therefore a danger of overcompartmentalizing, when in fact the important changes in our time typically have multiple and interrelated effects. When planning strategy, you should never allow debates over "which box?" to impede an understanding of the potential impacts of expected changes—after all, that's what's important! Global firms, by their very nature, need to be aware of these changes in the remote environment in every region of the world. In addition, a diversified firm will need to undertake such an analysis at several levels. It will need to understand the changes occurring that are important for the firm as a total entity, such as the admission of China and Taiwan to the WTO. At the same time, we reiterate that each of the individual business units will need to undertake a thorough analysis of its own remote environment. We have used a general approach to analysis, but the specific dimensions and tools used to understand changes will depend on the specific firm and business unit for which strategy is being developed.

3. 3 THE INDUSTRY ENVIRONMENT

While the remote environment will have a major impact on the firm's strategy, our next level of analysis goes deeper, exploring the structural characteristics of the industry in which a business competes and the effect of these on strategy. Since global firms are likely to operate in a

number of different industries, this level of analysis is more appropriate at the business-unit level. Corporate-level staff would be expected to undertake this analysis when exploring mergers and acquisitions or when setting performance standards for a business unit. Figure 3. 6 depicts our model of industry structure, where industry structure includes suppliers, buyers, entrants, and substitutes as well as direct competitors. The depiction is based on the work of Michael Porter and is sometimes referred to as the five forces model. 27 The structural variables identified in the model affect all the firms in the industry, but not all firms will be affected equally. An industry analysis helps in understanding the power relationships among the players in the industry, which in turn influence the firm's performance. Figure 3. 6 The Industry Environment Adapted with permission of The Free Press, a Division of Simon & Schuster Adult Publishing Group, from *Competitive Strategy: Techniques for Analyzing Industries and Competitors* by Michael E. Porter, Copyright © 1980, 1998 by The Free Press. All rights reserved. 74 Chapter 3. The Competitive Environment

Figure 3. 6 illustrates the five forces model, which identifies the structural variables that affect all firms in an industry. The forces are: Suppliers, Environmental, Direct Entrants, FIRM, Competitors, Indirect competitors, Buyers, Legal, Economic, Technological. The diagram shows these forces surrounding a central FIRM. The text explains that these forces affect all firms in the industry, but not all firms will be affected equally. An industry analysis helps in understanding the power relationships among the players in the industry, which in turn influence the firm's performance. The text also mentions that the structural factors are generally grouped into five categories, and we now review each of these. First is the pressure from direct competitors, or, to use another phrase, the competitive intensity of the industry. If intensity is high, profitability of firms in the industry is likely to be low. For

example, a combination of slow growth and excess capacity is likely to produce lower margins, particularly if this is coupled with high exit barriers. The second factor influencing industry profitability is the ease of entry of new competitors. Industry profitability is likely to be low when entry barriers are low-when it is easy for competitors to enter and compete. Barriers to entry include the capital required to enter as well as non-financial barriers such as access to distribution channels, knowledge, and economies of scale, as we discuss in later chapters. Low industry profitability itself can also be considered as a barrier to entry. When industry profitability is high, this acts as a signal to other firms-including potential competitors who may be operating in the same industry in different locales (so-called parallel competitors)-to enter our market. The spread of the multinational, resulting in today's global marketplace, is a consequence of this behavior. An important strategic implication from the above is that good profits are often a leading indicator of increased competition. Too often, good results cause firms to be less competitive, complacency rendering them vulnerable to new sources of competition. Economic theory also suggests that under conditions of oligopolistic competition, we should devote considerable effort to attaining deeper understanding of our competitors (current and potential) and their likely future course of action. Profitable markets, however, do not just attract potential direct competitors, those who do business in the same way we do; they also attract substitutes, or indirect competitors, the third factor influencing industry profitability. These are competitors capable of meeting the same customer needs as our own business but which do so in a

very different manner. Thus plastic bottles compete with aluminum cans for beverages, while digital cameras compete with traditional film cameras. Substitutes often feature new technology that has basic quality and high cost early in its life cycle. This may cause incumbent firms to dismiss the threat posed by the substitute. Too often, incumbents ignore the potential for rapid technological advancement with the substitute, as is illustrated in Table 3. 10, which shows the price and performance characteristics of a nonprofessional single-lens reflex digital camera produced by Canon. The prices of these cameras have declined rapidly over time (Canon's competitors would have followed a similar pattern). At the same time the functionality of these cameras has improved significantly, so picture quality, measured by the number of pixels, has increased almost fivefold. The challenge for incumbents making traditional film-based cameras is to comprehend the rate of this technological change. The rate of technological change for their product is likely to be very slow, since the product is technologically mature. In 1995 it would have been difficult for these firms to understand that in just seven years the prices of the competing product would decline from ¥M1. 98 to ¥M0. 358 while functionality improved. Physical size and weight have declined at the same time as picture resolution has increased, and prices have fallen dramatically. Since these are salient characteristics influencing purchase, the value of the product to customers increased significantly over the time period. This is a classic example of the well-known S-curve of technological change: improvements occur slowly at first, accelerate, and then slow down as the technology reaches its limit. 28 It may be difficult for executives in

Table 3. Characteristics of Canon Digital Camera

Model	EOS DCS 3	EOS D 2000	EOS D 30	EOS D 60	Price/Performance
Date Introduced	July 1995	March 1998	October 2000	March 2002	
Price (¥)	1,980,000	1,980,000	358,000	358,000	
Picture Resolution (megapixels)	1.3	2.0	3.25	6.3	75
Weight (grams)	1800*	1650	780	780	* = with battery.

Source: "Canon Camera Museum," 2003: www.canon.com. Reproduced by permission of Canon.

(e.g., film-based cameras), for which technological improvements are gradual, to recognize the threat posed by a disruptive technology. Without doubt, technological advance and deregulation have combined to vastly increase the threats posed by indirect competition. The probability that new indirect entrants will be successful is typically viewed as lower than that for parallel competitors, but the effects of their infrequent successes may be devastating. They provide examples of the low-probability, high-impact event against which it is so difficult to defend. The other forces bearing on the firm act vertically. The fourth is the pressure from suppliers which is very much dependent on their importance to the firm. Sometimes this can be assessed in terms of the importance of the input product as a percentage of the firm's total costs. In other cases, suppliers can be critical for different reasons. They may add appeal for the firm's subsequent customers, or their product or service may be critical to the continuity of the customer firm's production processes. Whenever dependency is high, however, the supplier's bargaining power is enhanced, and this tends to be reflected in their margins vis-à-vis those of their customer, as well as other dimensions such as delivery time and flexibility. Of course, as the

power of suppliers rises, so does the threat of their forward integration down the channel of distribution into competition with the firm. This may occur via direct entry or acquisition. In other cases, the supplier may engage in promoting its brand directly to the firm's customers, raising the firm's switching costs as their customers' preferences move toward products incorporating the promoting supplier's products. Intel provides one of the best-known examples. Many of their customers that manufacture PCs have co-branded Intel inside on their own products, recognizing that their customers' brand associations should be favorable and lead to improved sales of their products, compared with those using other manufacturers' chips. Intel's advertising budget at the time of writing was over more than \$US1. Very similar forces operate with respect to the final set of factors, the firm's relationship with its immediate customers. If the firm becomes dependent on a few large customers, its bargaining power is significantly diminished. These large customers will pressure for discounts, and their margins will usually benefit at the expense of the seller's. In the early 21st century, these battles are being actively fought between the suppliers to the major automobile firms and their customers, the auto firms. Automobile firms are very powerful customers that, when faced with overcapacity, declining market shares in the critical U. S. market, and large losses, were able to pressure horrified suppliers for price reductions of up to 15%. Structural characteristics may significantly affect firm and industry profitability. For some industries, structural characteristics are such that almost no firm in the industry is able to make an adequate return, yet firms refuse to exit. For example,

profitability in 76 Chapter 3. The Competitive Environment the paper industry worldwide is poor—and has been for many years. The international airline industry has also been a poor profit performer, and the devastating consequence of September 11, 2001, is likely to be that other airlines beyond Swiss Air, Ansett, and Sabena will fall into insolvency or be merged out of existence. Industry Value Chain Industry analysis of the type discussed above is incomplete since it neglects the dynamics of what we will call the industry value chain—the linked set of firms and the activities undertaken by those firms. Interindustry competition is increasingly common in today's world. In such cases competition can be seen as occurring between two complete industry value chains. Consider the beverage-packaging market, with two competing packaging systems: aluminum cans and plastic bottles. Figure 3. 7 compares the industry value chain for each type of container. Changes at any level of the value chain for aluminum cans influence the competitiveness of cans versus bottles. For example, aluminum smelting is a very energy-intensive process, using huge amounts of electricity. Any increase in electricity costs will obviously increase the cost of cans. On the other hand, feedstock for the plastic bottles is dependent on petrochemical prices, which will undoubtedly be influenced by the actions of the OPEC cartel. Currently, bottles made from polyethylene terephthalate (PET) have high levels of permeability, making them unsuitable for beverages such as beer. Should technological developments overcome this characteristic, the impact on the aluminum can industry is likely to be severe. Whether a firm is in the aluminum, plastics, or packaging in