CHAPTER 4

The External Environment

The Environmental Domain
Task Environment • General Environment • International Context

Environmental Uncertainty
Simple-Complex Dimension • Stable-Unstable Dimension • Framework

Adapting to Environmental Uncertainty
Positions and Departments • Buffering and Boundary Spanning • Differentiation and Integration • Organic Versus Mechanistic Management Processes • Planning and Forecasting

Resource Dependence

Controlling Environmental Resources
Establishing Interorganizational Linkages • Controlling the Environmental Domain • Organization-Environment Integrative Framework

Many companies are surprised by changes in the external environment. Perhaps the greatest tumult for today's organizations has been created by the rapid expansion of e-commerce. For example, Amazon.com was ringing up on-line book sales for more than a year before managers at Barnes & Noble even began thinking about a Web site. Barnes & Noble was highly successful with its book superstore concept, but its early efforts in e-commerce were marked by costly mistakes and missed opportunities. Even though the company burned through $100 million in an effort to "crush Amazon," Barnesandnoble.com was still selling only 15 percent of books bought online compared to Amazon's 75 percent.[1]

Firms in every industry, from auto manufacturing to telecommlunications, face similar uncertainty. Many factors in the external environment cause turbulence and uncertainty for organizations. Anheuser-Busch's CEO, for example, admits that his company was "five years late in recognizing that microbreweries were going to take as much market share as they did and five years late in recognizing that we should have joined them."[2] Small retailers have long suffered threats from huge discount stores such as Wal-Mart and Home Depot. Now, with electronics superstore Best Buy selling CDs for about half what they cost in traditional music stores, some record-selling chains have been forced into bankruptcy. In Western Europe, privatization of formerly state-owned enterprises has caused tremendous uncertainty for companies such as Swisscom, which seems to be thriving in the new environment, and Telecom Italia, which is not.[3] In the United States, the cattle industry has suffered declining prices because of increased imports of beef from Canada, Mexico, and Argentina. The list could go on and on. The external environment, including global competition, is the source of major threats facing today's organizations. The environment often imposes major constraints on the choices managers make for the organization.

PURPOSE OF THIS CHAPTER

The purpose of this chapter is to develop a framework for assessing environments and how organizations can respond to them. First, we will identify the organizational domain and the sectors that influence the organization. Then, we will explore two major environmental forces on the organization—the need for information and the need for resources. Organizations respond to these forces through structural design, planning systems, and attempts to change and control elements in the environment.

THE ENVIRONMENTAL DOMAIN

In a broad sense the environment is infinite and includes everything outside the organization. However, the analysis presented here considers only the aspects of the environment to which the organization is sensitive and must respond to survive. Thus, **organizational environment** is defined as all elements that exist outside the boundary of the organization and have the potential to affect all or part of the organization.

The environment of an organization can be understood by analyzing its domain within external sectors. An organization's **domain** is the chosen environmental field of action. It is the territory an organization stakes out for itself with respect to products, services, and markets served. Domain defines the organization's niche and defines those external sectors with which the organization will interact to accomplish its goals. Barnes & Noble ignored an important part of its domain when the bookselling environment changed. The company was slow to take advantage of new technology for e-commerce, allowing the competition to gain a huge advantage.

The environment comprises several **sectors** or subdivisions of the external environment that contain similar elements. Ten sectors can be analyzed for each organization: industry, raw materials, human resources, financial resources, market, technology, economic conditions, government, sociocultural, and international. The sectors and a hypothetical organizational domain are illustrated in Exhibit 4.1. For most companies, the sectors in Exhibit 4.1 can be further subdivided into the task environment and general environment.

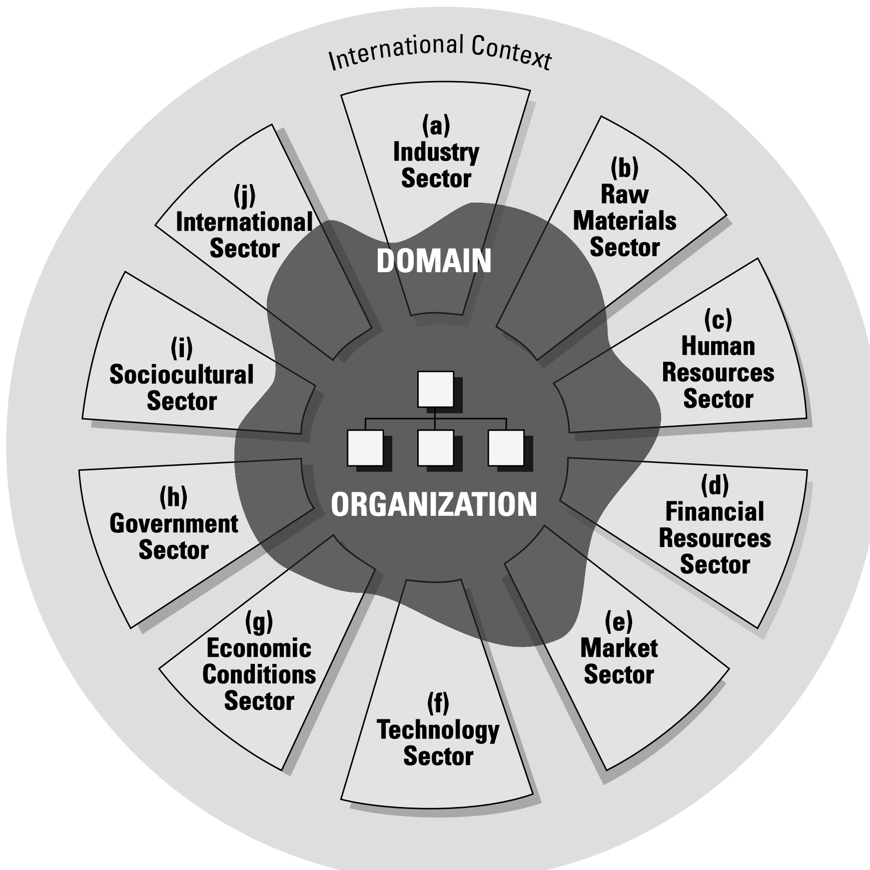
TASK ENVIRONMENT

The **task environment** includes sectors with which the organization interacts directly and that have a direct impact on the organization's ability to achieve its goals. The task environment typically includes the industry, raw materials, and market sectors, and perhaps the human resources and international sectors.

The following examples illustrate how each of these sectors can affect organizations:

- In the *industry sector*, cola rivals Coke and Pepsi are intensifying their competition in local markets. For example, in New York City, one of the few markets where Pepsi-Cola outsells Coca-Cola Classic, each Coca-Cola marketing rep visits up to 120 small stores a week to push snazzier displays, better placement, and more promotions. In

EXHIBIT 4.1 *An Organization's Environment*



(a) Competitors, industry size and competitiveness, related industries
(b) Suppliers, manufacturers, real estate, services
(c) Labor market, employment agencies, universities, training schools, employees in other companies, unionization
(d) Stock markets, banks, savings and loans, private investors
(e) Customers, clients, potential users of products and services
(f) Techniques of production, science, computers, information technology, e-commerce
(g) Recession, unemployment rate, inflation rate, rate of investment, economics, growth
(h) City, state, federal laws and regulations, taxes, services, court system, political processes
(i) Age, values, beliefs, education, religion, work ethic, consumer and green movements
(j) Competition from and acquisition by foreign firms, entry into overseas markets, foreign customs, regulations, exchange rate

Harlem, where five convenience stores now sport red and white awnings thanks to Coca-Cola, small-store sales of Coke have doubled.[4]

- An interesting example in the *raw materials sector* concerns the beverage can industry. Steelmakers owned the beverage can market until the mid-1960s, when Reynolds Aluminum Company launched a huge aluminum recycling program to gain a cheaper source of raw materials and make aluminum cans price-competitive with steel.[5]
- In the *market sector*, changes in toy-buying patterns, with parents wanting more educational toys and electronics, have stalled growth rates for companies such as Mattel and Hasbro. Even Barbie and GI Joe are suffering sales declines. Toys "R" Us, once the giant of toy retailers, is reevaluating strategies and marketing plans to respond to changing customer desires.[6]
- The *human resources sector* has become of significant concern to almost every business because of the tightest labor market in thirty years. Well-educated, computer-literate young workers, sometimes called *gold-collar workers*, can often demand high salaries and generous benefits because companies have great difficulty finding qualified workers. [7]
- For U.S. automobile manufacturers, the *international sector* is part of the task environment because these companies face tough foreign competition, including an increasing number of foreign-owned manufacturing plants built on U.S. soil. The international sector as part of the general environment is discussed in more detail later in this chapter.

GENERAL ENVIRONMENT

The **general environment** includes those sectors that may not have a direct impact on the daily operations of a firm but will indirectly influence it. The general environment often includes the government, sociocultural, economic conditions, technology, and financial resources sectors. These sectors affect all organizations eventually. Consider the following examples:

- In response to well-publicized problems with medical devices such as heart valves and breast implants, the FDA introduced more stringent regulations that significantly slowed the rate of reviewing and approving new products. ISS, a small company that manufactures surgical assistant systems that use 3-D computer imaging and robotic tools, could once bring a new product to market in two or three years; it is now lucky to make it in six because of these changes in the *government sector*.[8]
- In the *sociocultural sector*, changing demographics are impacting numerous companies. The huge baby-boom generation is aging and losing some of its interest in high-cost, brand-name goods. Meanwhile, the sons and daughters of baby boomers, sometimes called "Generation Y," disdain such once-favored brands as Nike and Levi Strauss. Companies are struggling to build loyalty among this new generation, which rivals the baby boom in size and will soon rival it in buying clout.[9]
- General *economic conditions* often affect the way a company does business. To remain competitive in an era of low inflation, furniture maker Ethan Allen needed to keep prices low. To make a profit without raising prices, the company turned to making simpler furniture designs and increasing its technological efficiency.[10]
- The most overwhelming change in the *technology sector* is the rapid expansion of the Internet as a place for doing business. The World Wide Web and other advances in information technology have changed the whole face of business. For example, new formats for storing and transmitting music over the Internet could alter the entire recording industry. Although Val Azzoli, co-CEO of $700-million-plus-a-year Atlantic Group, views the Web primarily as a marketing tool for Atlantic's artists, a privately owned Web site called MP3.com is already giving away digitized music over the Web.[11]
- All businesses have to be concerned with *financial resources*, but this sector is often first and foremost in the minds of entrepreneurs starting a new business. Scott Blum started Buy.com, which resells computers and other products at or below cost over

the Internet, with money out of his own savings. A couple of years later, Blum raised $60 million from Japanese tech company Softbank in return for a 20 percent equity stake in the company.[12]

INTERNATIONAL CONTEXT

The international sector can directly affect many organizations, and it has become extremely important in the last few years. In addition, all domestic sectors can be affected by international events. Despite the significance of international events for today's organizations, many students fail to appreciate the importance of international events and still think domestically. Think again. Even if you stay in your hometown, your company may be purchased tomorrow by the English, Canadians, Japanese, or Germans. For example, General Shale Brick, with headquarters in a small community in East Tennessee, was recently bought by Wienerberger Baustoffindustrie AG, a Vienna, Austria, company that is the world's largest brickmaker. The Japanese alone own more than one thousand U.S. companies, including steel mills, rubber and tire factories, automobile assembly plants, and auto parts suppliers. Nationwide, more than 350,000 Americans work for Japanese companies. People employed by Pillsbury, Shell Oil, Firestone, and CBS Records are working for foreign bosses.[13]

The impact of the international sector has grown rapidly with advances in technology and communications. The distinctions between domestic and foreign companies have become increasingly irrelevant as advances in transportation and electronic technology have reduced the impact of distance and time, as well as the differences among political and monetary systems, tastes, and standards. Global trade has tripled in the past twenty-five years, and today it is relatively easy for a firm of any size to operate on a global scale.[14] One small company, Montague Corporation, designs unique folding mountain bikes in Cambridge, Massachusetts, makes them in Taiwan, and sells most of them in Europe. Design changes are sent back and forth across three continents, sometimes on a daily basis. U.S.-based Coca-Cola, Canada's Northern Telecom, Switzerland's Nestlé, and France's Carrefour, the retailer that invented the *hypermarket* concept, all get a large percentage of their sales from outside their home countries.[15] In this global environment, it is no surprise that foreign-born people with international experience have been appointed to run such U.S. companies as Ford, Gerber, NCR, and Heinz. Consider the following trends:[16]

- The North American Free Trade Agreement is spurring many U.S. companies, including small businesses, to move into Canada and Mexico, affecting the market and human resources sectors.
- The European Union (EU) and Association of Southeast Asian Nations (ASEAN) may spawn large, powerful companies that compete easily with U.S. firms. These companies could reshape the industry and market sectors as we now know them.
- Despite recent economic woes, some analysts believe that in the twenty-first century, most of the economic activity in the world will take place in Asia and the Pacific Basin, sharply affecting the economic conditions and financial resources sectors.
- Newly industrialized countries such as Korea, Taiwan, Singapore, and Spain produce huge volumes of low-cost, high-quality commodities that will have an impact on the competitiveness of many industries, markets, and raw materials in North America.
- Eastern Europe, Russia, and China are all shifting toward market economies that also will affect markets, raw materials, industry competition, and worldwide economic conditions.
- Hundreds of partnerships are taking place between North American firms and firms in all parts of the world, facilitating the exchange of technology and production capability, thereby redefining the technology, raw materials, and industry sectors.
- Many companies in the United States build twin plants—one in Texas and one in Mexico. The Mexican plants provide component assembly, and that helps combat Mexico's high unemployment. Called *maquiladoras*, these plants reshape the human resources and raw materials sectors.

- All of these international connections are spawning new state and federal regulations, thereby affecting the government sector; and beliefs and values are becoming shared worldwide, shaping the sociocultural sector.

The increasing global interconnections have both positive and negative results for organizations. The recent economic turmoil in Asia and Eastern Europe blindsided many companies, creating great uncertainty for organizations doing business there. In addition, as the economic malaise spread to Latin America, it had an even greater impact on some U. S. companies based in Florida, since Southern Florida's economy is closely integrated with that of Latin America. CHS Electronics, a Miami-based firm with extensive ties to Latin America, has seen more and more of its Latin customers paying with local currency, and is finding debts harder to collect.[17]

Global interconnections also mean that competitiveness has reached a new level, as companies are competing on a broader scale than ever before. Less-developed countries are challenging mature countries in a number of industries. For example, India is becoming a major player in software development, and consumer electronics manufacturing, which long ago left the United States for Japan, is now rapidly leaving Japan for other countries in Asia.

Yet there is also a positive side. Domestic markets are saturated for many companies and the primary potential for growth lies overseas. Kimberly-Clark and Procter & Gamble, which spent years slugging it out in the now-flat U.S. diaper market, are targeting new markets in China, India, Brazil, Israel, and Russia. The demand for steel in China, India, and Brazil together is expected to grow 10 percent annually in the coming years—three times the U.S. rate. Nucor, a U.S.-based steel company, is opening a minimill in Thailand and partnering with a Brazilian company for a $700 million steel mill in northeastern Brazil. Other steel companies, such as LTV Corp. and North Star Steel, are moving into Asia, Europe, and Australia.[18] And, despite the economic convulsions there, large Western companies such as Ford, Procter & Gamble, and Coca-Cola continue to view Southeast Asia as the big market of the future. When companies think globally, the whole world is their marketplace.

The growing importance of the international sector means that the environment for all organizations has become extremely complex and extremely competitive. However, every organization faces uncertainty domestically as well as globally. In the following sections, we will discuss in greater detail how companies cope with and respond to environmental uncertainty and instability.

ENVIRONMENTAL UNCERTAINTY

How does the environment influence an organization? The patterns and events occurring across environmental sectors can be described along several dimensions, such as whether the environment is stable or unstable, homogeneous or heterogeneous, concentrated or dispersed, simple or complex; the extent of turbulence; and the amount of resources available to support the organization.[19] These dimensions boil down to two essential ways the environment influences organizations: (1) the need for information about the environment and (2) the need for resources from the environment. The environmental conditions of complexity and change create a greater need to gather information and to respond based on that information. The organization also is concerned with scarce material and financial resources and with the need to ensure availability of resources. Each sector can be analyzed relative to these three analytical categories. The remainder of this section will discuss the information perspective, which is concerned with the uncertainty that environmental complexity and change create for the organization. Later in the chapter, we will discuss how organizations control the environment to acquire needed resources.

Organizations must cope with and manage uncertainty to be effective. **Uncertainty** means that decision makers do not have sufficient information about environmental factors, and they have a difficult time predicting external changes. Uncertainty increases the risk of failure for organizational responses and makes it difficult to compute costs and probabilities associated with decision alternatives.[20] Characteristics of the environmental domain that influence uncertainty are the extent to which the external domain is simple or complex and the extent to which events are stable or unstable.[21]

SIMPLE-COMPLEX DIMENSION

The **simple-complex dimension** concerns environmental complexity, which refers to heterogeneity, or the number and dissimilarity of external elements relevant to an organization's operations. In a complex environment, many diverse external elements interact with and influence the organization. In a simple environment, as few as three or four similar external elements influence the organization.

Telecommunications firms such as AT&T and British Telecom have a complex environment, as do universities. Universities span a large number of technologies and are a focal point for cultural and value changes. Government regulatory and granting agencies interact with a university, and so do a variety of professional and scientific associations, alumni, parents, foundations, legislators, community residents, international agencies, donors, corporations, and athletic teams. A large number of external elements thus make up the organization's domain, creating a complex environment. On the other hand, a family-owned hardware store in a suburban community is in a simple environment. The only external elements of any real importance are a few competitors, suppliers, and customers. Government regulation is minimal, and cultural change has little impact. Human resources are not a problem because the store is run by family members or part-time help.

STABLE–UNSTABLE DIMENSION

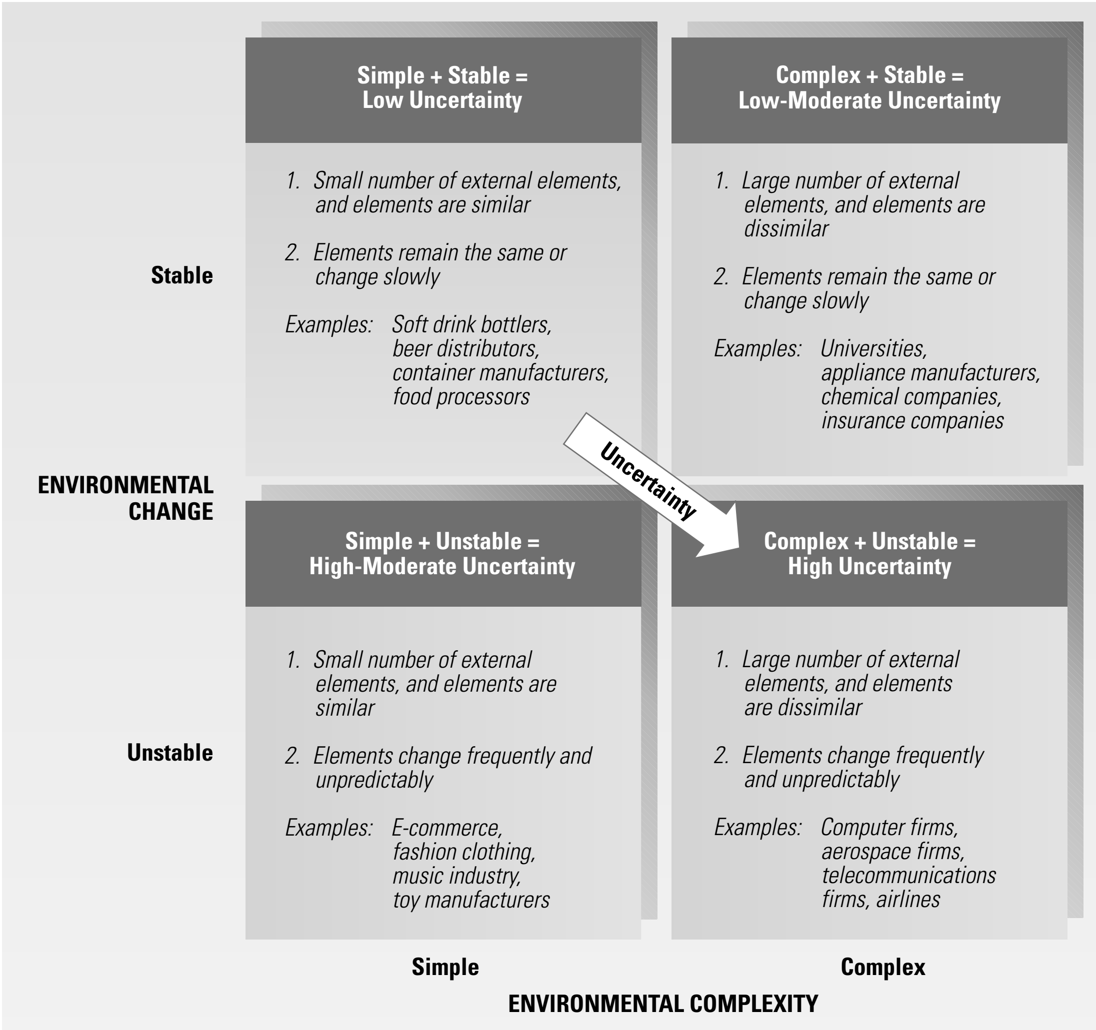
The **stable-unstable dimension** refers to whether elements in the environment are dynamic. An environmental domain is stable if it remains the same over a period of months or years. Under unstable conditions, environmental elements shift abruptly. Instability may occur when competitors react with aggressive moves and countermoves regarding advertising and new products. For example, aggressive advertising and introduction of new products can create instability for companies, such as Coke's giving away 2 million Coca-Cola cards to build its teen market in New York City and the introduction of Surge to compete with Pepsi's Mountain Dew. Sometimes specific, unpredictable events–such as reports of syringes in cans of Pepsi or glass shards in Gerber's baby foods, the poisoning of Tylenol, or the Church of Scientology's attack on the antidepressant drug Prozac–create unstable conditions. Today, "hate sites" on the World Wide Web, such as Ihatemcdonalds.com and Walmartsucks.com, are an important source of instability for scores of companies, from Allstate Insurance to Toys "R" Us. Microsoft critics can visit more than twenty hate sites.[22]

Although environments are becoming more unstable for most organizations today, an example of a traditionally stable environment is a public utility.[23] In the rural Midwest, demand and supply factors for a public utility are stable. A gradual increase in demand may occur, which is easily predicted over time. Toy companies, by contrast, have an unstable environment. Hot new toys are difficult to predict, a problem compounded by the fact that toys are subject to fad buying. Coleco Industries, makers of the once-famous Cabbage Patch Kids, and Worlds of Wonder, creators of Teddy Ruxpin, went bankrupt because of the unstable nature of the toy environment, their once-winning creations replaced by Bandai's Mighty Morphin Power Rangers or Playmate Toys' Teenage Mutant Ninja Turtles.[24] Those toys, in turn, were replaced by fads such as Furby, Beanie Babies, Star Wars figures, and Pokémon.

FRAMEWORK

The simple-complex and stable-unstable dimensions are combined into a framework for assessing environmental uncertainty in Exhibit 4.2. In the *simple, stable* environment, uncertainty is low. There are only a few external elements to contend with, and they tend

EXHIBIT 4.2 *Framework for Assessing Environmental Uncertainty*



Source: Adapted and reprinted from "Characteristics of Perceived Environments and Perceived Environmental Uncertainty" by Robert B. Duncan, published in *Administrative Science Quarterly* 17 (1972): 313–27, by permission of *The Administrative Science Quarterly.*

to remain stable. The *complex, stable* environment represents somewhat greater uncertainty. A large number of elements have to be scanned, analyzed, and acted upon for the organization to perform well. External elements do not change rapidly or unexpectedly in this environment.

Even greater uncertainty is felt in the *simple, unstable* environment.[25] Rapid change creates uncertainty for managers. Even though the organization has few external elements, those elements are hard to predict, and they react unexpectedly to organizational initiatives. The greatest uncertainty for an organization occurs in the *complex, unstable* environment. A large number of elements impinge upon the organization, and they shift frequently or react strongly to organizational initiatives. When several sectors change simultaneously, the environment becomes turbulent.[26]

A beer distributor functions in a simple, stable environment. Demand for beer changes only gradually. The distributor has an established delivery route, and supplies of beer arrive on schedule. State universities, appliance manufacturers, and insurance companies are in somewhat stable, complex environments. A large number of external elements are present, but although they change, changes are gradual and predictable.

Toy manufacturers are in simple, unstable environments. Organizations that design, make, and sell toys, as well as those that are involved in the clothing or music industry, face shifting supply and demand. Most e-commerce companies focus on a specific competitive niche and, hence, operate in simple but unstable environments. Although there may be few elements to contend with—e.g., technology, competitors—they are difficult to predict and change abruptly and unexpectedly.

The computer industry and the airline industry face complex, unstable environments. Many external sectors are changing simultaneously. In the case of airlines, in just a few years they were confronted with deregulation, the growth of regional airlines, surges in fuel costs, price cuts from competitors such as Southwest Airlines, shifting customer demand, an air-traffic controller shortage, overcrowded airports, and a reduction of scheduled flights.[27] A recent series of major air traffic disasters has further contributed to the complex, unstable environment for the industry.

ADAPTING TO ENVIRONMENTAL UNCERTAINTY

Once you see how environments differ with respect to change and complexity, the next question is, "How do organizations adapt to each level of environmental uncertainty?" Environmental uncertainty represents an important contingency for organization structure and internal behaviors. Recall from Chapter 3 that organizations facing uncertainty generally encourage cross-functional communication and collaboration to help the company adapt to changes in the environment. In this section we will discuss in more detail how the environment affects organizations. An organization in a certain environment will be managed and controlled differently from an organization in an uncertain environment with respect to positions and departments, organizational differentiation and integration, control processes, and future planning and forecasting. Organizations need to have the right fit between internal structure and the external environment.

POSITIONS AND DEPARTMENTS

As the complexity in the external environment increases, so does the number of positions and departments within the organization, which in turn increases internal complexity. This relationship is part of being an open system. Each sector in the external environment requires an employee or department to deal with it. The human resources department deals with unemployed people who want to work for the company. The marketing department finds customers. Procurement employees obtain raw materials from hundreds of suppliers. The finance group deals with bankers. The legal department works with the courts and government agencies. Today, many companies are adding e-business departments to handle electronic commerce and information technology departments to deal with the increasing complexity of computerized information and knowledge management systems.

BUFFERING AND BOUNDARY SPANNING

The traditional approach to coping with environmental uncertainty was to establish buffer departments. The **buffering role** is to absorb uncertainty from the environment.[28] The technical core performs the primary production activity of an organization. Buffer departments surround the technical core and exchange materials, resources, and money between the environment and the organization. They help the technical core function efficiently. The purchasing department buffers the technical core by stockpiling supplies and raw materials. The human resources department buffers the technical core by handling the uncertainty associated with finding, hiring, and training production employees.

A newer approach some organizations are trying is to drop the buffers and expose the technical core to the uncertain environment. These organizations no longer create buffers because they believe being well connected to customers and suppliers is more important than internal efficiency. For example, John Deere has assembly-line workers visiting local farms to determine and respond to customer concerns. Whirlpool pays hundreds of customers to test computer-simulated products and features.[29] Opening up the organization to the environment makes it more fluid and adaptable.

Boundary-spanning roles link and coordinate an organization with key elements in the external environment. Boundary spanning is primarily concerned with the exchange of information to (1) detect and bring into the organization information about changes in the environment and (2) send information into the environment that presents the organization in a favorable light.[30]

Organizations have to keep in touch with what is going on in the environment so that managers can respond to market changes and other developments. A survey of high-tech firms found that 97 percent of competitive failures resulted from lack of attention to market changes or the failure to act on vital information.[31] To detect and bring important information into the organization, boundary personnel scan the environment. For example, a market research department scans and monitors trends in consumer tastes. Boundary spanners in engineering and research and development (R&D) departments scan new technological developments, innovations, and raw materials. Boundary spanners prevent the organization from stagnating by keeping top managers informed about environmental changes. Often, the greater the uncertainty in the environment, the greater the importance of boundary spanners.[32]

One of the fastest growing areas of boundary spanning is competitive intelligence. Companies large and small are setting up competitive intelligence departments or hiring outside specialists to gather information on competitors. Competitive intelligence gives top executives a systematic way to collect and analyze public information about rivals and use it to make better decisions.[33] Using techniques that range from Internet surfing to digging through trash cans, intelligence professionals dig up information on competitors' new products, manufacturing costs, or training methods and share it with top leaders. For example, Nutrasweet's competitive intelligence department helped the company delay a costly advertising campaign when it learned that a rival sweetener was at least five years away from FDA approval.[34] In today's uncertain environment, competitive intelligence is a trend that is likely to increase. In addition, companies such as UtiliTech Inc. of Stratford, Connecticut, and WavePhore Inc. of Phoenix, Arizona, regularly monitor the Internet for large corporations to see what is being said about them on the Web. This provides important information to top executives about how the company is perceived in the environment.

The boundary task of sending information into the environment to represent the organization is used to influence other people's perception of the organization. In the marketing department, advertising and sales people represent the organization to customers. Purchasers may call on suppliers and describe purchasing needs. The legal department informs lobbyists and elected officials about the organization's needs or views on political matters. Many companies set up their own Web pages to present the organization in a favorable light. To counteract hate sites that criticize their labor practices in Third World countries, Nike and Unocal both created Web sites specifically to tell their side of the story.[35]

DIFFERENTIATION AND INTEGRATION

Another response to environmental uncertainty is the amount of differentiation and integration among departments. Organization **differentiation** is "the differences in cognitive and emotional orientations among managers in different functional departments, and the difference in formal structure among these departments."[36] When the external environment is complex and rapidly changing, organizational departments become highly specialized to handle the uncertainty in their external sector. Success in each sector requires special expertise and behavior. Employees in a research and development department thus have unique attitudes, values, goals, and education that distinguish them from employees in manufacturing or sales departments.

A study by Paul Lawrence and Jay Lorsch examined three organizational departments—manufacturing, research, and sales—in ten corporations.[37] This study found that each department evolved toward a different orientation and structure to deal with specialized parts of the external environment. The market, scientific, and manufacturing subenvironments identified by Lawrence and Lorsch are illustrated in Exhibit 4.3. Each department interacted with different external groups. The differences that evolved among departments within the organizations are shown in Exhibit 4.4. To work effectively with the scientific subenvironment, R&D had a goal of quality work, a long time horizon (up to five years), an informal structure, and task-oriented employees. Sales was at the opposite extreme. It had a goal of customer satisfaction, was oriented toward the short term (two weeks or so), had a very formal structure, and was socially oriented.

One outcome of high differentiation is that coordination among departments becomes difficult. More time and resources must be devoted to achieving coordination when attitudes, goals, and work orientation differ so widely. **Integration** is the quality of collaboration among departments.[38] Formal integrators are often required to coordinate departments. When the environment is highly uncertain, frequent changes require more information processing to achieve horizontal coordination, so integrators become a necessary addition to the organization structure. Sometimes integrators are called liaison personnel, project managers, brand managers, or coordinators. As illustrated in Exhibit 4.5, organizations with highly uncertain environments and a highly differentiated structure assign about 22 percent of management personnel to integration activities, such

EXHIBIT 4.3 *Organizational Departments Differentiate to Meet Needs of Subenvironments*

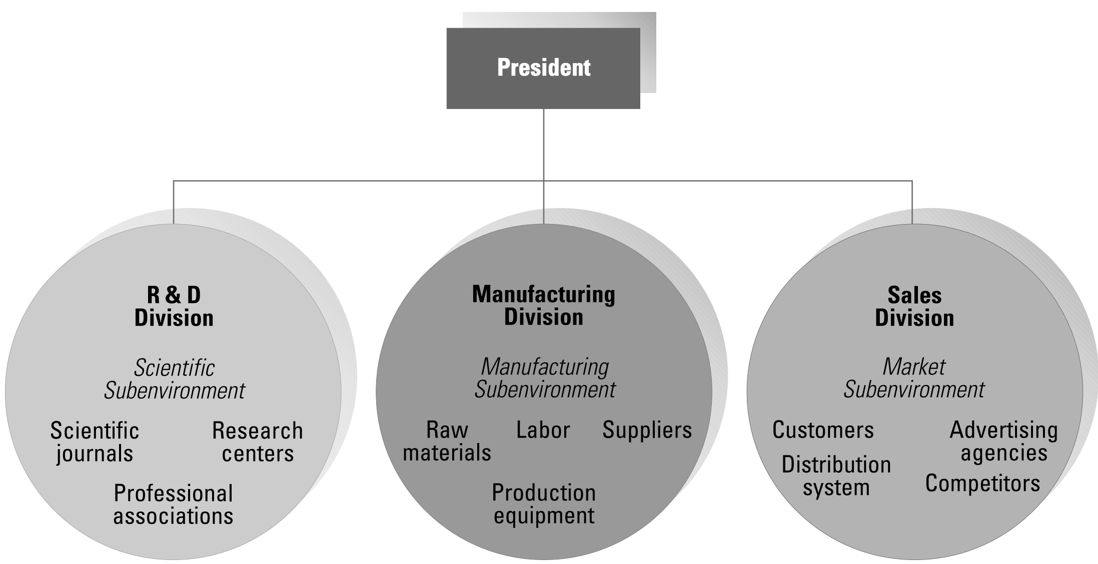


EXHIBIT 4.4 *Differences in Goals and Orientations Among Organizational Departments*

	R & D Department	Manufacturing Department	Sales Department
Goals	New developments, quality	Efficient production	Customer satisfaction
Time horizon	Long	Short	Short
Interpersonal orientation	Mostly task	Task	Social
Formality of structure	Low	High	High

Source: Based on Paul R. Lawrence and Jay W. Lorsch, *Organization and Environment* (Homewood, Ill.: Irwin, 1969), 23–29.

EXHIBIT 4.5 *Environmental Uncertainty and Organizational Integrators*

	Plastics	Industry Foods	Container
Environmental uncertainty	High	Moderate	Low
Departmental differentiation	High	Moderate	Low
Percent management in integrating roles	22%	17%	0%

Source: Based on Jay W. Lorsch and Paul R. Lawrence, "Environmental Factors and Organizational Integration," *Organizational Planning: Cases and Concepts* (Homewood, Ill.: Irwin and Dorsey, 1972), 45.

as serving on committees, on task forces, or in liaison roles.[39] In organizations characterized by very simple, stable environments, almost no managers are assigned to integration roles. Exhibit 4.5 shows that, as environmental uncertainty increases, so does differentiation among departments; hence, the organization must assign a larger percentage of managers to coordinating roles.

Lawrence and Lorsch's research concluded that organizations perform better when the levels of differentiation and integration match the level of uncertainty in the environment. Organizations that performed well in uncertain environments had high levels of both differentiation and integration, while those performing well in less uncertain environments had lower levels of differentiation and integration.

ORGANIC VERSUS MECHANISTIC MANAGEMENT PROCESSES

Another response to environmental uncertainty is the amount of formal structure and control imposed on employees. Tom Burns and G. M. Stalker observed twenty industrial firms in England and discovered that external environment was related to internal management structure.[40] When the external environment was stable, the internal organization was characterized by rules, procedures, and a clear hierarchy of authority. Organizations were formalized. They were also centralized, with most decisions made at the top. Burns and Stalker called this a **mechanistic** organization system.

In rapidly changing environments, the internal organization was much looser, free-flowing, and adaptive. Rules and regulations often were not written down or, if written down, were ignored. People had to find their own way through the system to figure out what to do. The hierarchy of authority was not clear. Decision-making authority was decentralized. Burns and Stalker used the term **organic** to characterize this type of management structure.

Exhibit 4.6 summarizes the differences in organic and mechanistic systems. As environmental uncertainty increases, organizations tend to become more organic, which means decentralizing authority and responsibility to lower levels, encouraging employees

EXHIBIT 4.6 *Mechanistic and Organic Forms*

Mechanistic	Organic
1. Tasks are broken down into specialized separate parts.	1. Employees contribute to the common tasks of the department.
2. Tasks are rigidly defined.	2. Tasks are adjusted and redefined through employee teamwork.
3. There is a strict hierarchy of authority and control, and there are many rules.	3. There is less hierarchy of authority and control, and there are few rules.
4. Knowledge and control of tasks are centralized at the top of organization.	4. Knowledge and control of tasks are located anywhere in the organization.
5. Communication is vertical.	5. Communication is horizontal.

Source: Adapted from Gerald Zaltman, Robert Duncan, and Johnny Holbek, *Innovations and Organizations* (New York: Wiley, 1973), 131.

to take care of problems by working directly with one another, encouraging teamwork, and taking an informal approach to assigning tasks and responsibility. Thus, the organization is more fluid and is able to adapt continually to changes in the external environment.[41]

PLANNING AND FORECASTING

The final organizational response to uncertainty is to increase planning and environmental forecasting. When the environment is stable, the organization can concentrate on current operational problems and day-to-day efficiency. Long-range planning and forecasting are not needed because environmental demands in the future will be the same as they are today.

With increasing environmental uncertainty, planning and forecasting become necessary.[42] Planning can soften the adverse impact of external shifting. Organizations that have unstable environments often establish a separate planning department. In an unpredictable environment, planners scan environmental elements and analyze potential moves and countermoves by other organizations. Planning can be extensive and may forecast various scenarios for environmental contingencies. As time passes, plans are updated through replanning. However, planning does not substitute for other actions, such as boundary spanning. Indeed, under conditions of extraordinarily high uncertainty, formal planning may not be helpful because the future is so difficult to predict.

RESOURCE DEPENDENCE

Thus far, this chapter has described several ways in which organizations adapt to the lack of information and to the uncertainty caused by environmental change and complexity. We turn now to the third characteristic of the organization-environment relationship that affects organizations, which is the need for material and financial resources. The environment is the source of scarce and valued resources essential to organizational survival. Research in this area is called the resource dependence perspective. **Resource dependence** means that organizations depend on the environment but strive to acquire control over resources to minimize their dependence.[43] Organizations are vulnerable if vital resources are controlled by other organizations, so they try to be as independent as possible. Organizations do not want to become too vulnerable to other organizations because of negative effects on performance. For example, several years ago the supplier for more than half of Mattress Warehouse's stock decided to open a factory-direct store in the same market. Mattress Warehouse had only a week's notice that the supplier relationship was terminated, leaving the company scrambling to find another bedding vendor. It was a wake-up call for Mattress Warehouse owner Kimberly Brown Knopf, who diversified her supplier base to prevent the loss of one supplier from jeopardizing her business in the future.[44]

When costs and risks are high, however, companies also team up to reduce resource dependence and the possibility of bankruptcy. In today's volatile environment, companies are collaborating as never before to share scarce resources and be more competitive on a global scale.

Formal relationships with other organizations, however, present a dilemma to managers. North American organizations seek to reduce vulnerability with respect to resources by developing links with other organizations, but they also like to maximize their own autonomy and independence. Organizational linkages require coordination,[45] and they reduce the freedom of each organization to make decisions without concern for the needs and goals of other organizations. Interorganizational relationships thus represent a tradeoff between resources and autonomy. To maintain autonomy, organizations that already have abundant resources will tend not to establish new linkages. Organizations that need resources will give up independence to acquire those resources.

Dependence on shared resources gives power to other organizations. Once an organization relies on others for valued resources, those other organizations can influence managerial decision making. When a large company like DuPont, Motorola, or Xerox forges a partnership with a supplier for parts, both sides benefit, but each loses a small amount of autonomy. For example, some of these large companies are now putting strong pressure on vendors to lower costs, and the vendors have few alternatives but to go along.[46] In much the same way, dependence on shared resources gives advertisers power over print and electronic media companies. For example, as newspapers face increasingly tough financial times, they are less likely to run stories that are critical of advertisers. Though newspapers insist advertisers don't get special treatment, some editors admit there is growing talk around the country of the need for "advertiser-friendly" newspapers.[47]

In another industry, Microsoft is so large and powerful that it has a virtual monopoly in personal computer operating systems, so its every technical change adversely affects producers of application software. Microsoft has been accused of abusing this power and of squashing small competitors that would like to link up with it.[48]

CONTROLLING ENVIRONMENTAL RESOURCES

In response to the need for resources, organizations try to maintain a balance between linkages with other organizations and their own independence. Organizations maintain this balance through attempts to modify, manipulate, or control other organizations.[49] To survive, the focal organization often tries to reach out and change or control elements in the environment. Two strategies can be adopted to manage resources in the external environment: (1) establish favorable linkages with key elements in the environment and (2) shape the environmental domain.[50] Techniques to accomplish each of these strategies are summarized in Exhibit 4.7. As a general rule, when organizations sense that valued resources are scarce, they will use the strategies in Exhibit 4.7 rather than go it alone.

ESTABLISHING INTERORGANIZATIONAL LINKAGES

Ownership. Companies use ownership to establish linkages when they buy a part of or a controlling interest in another company. This gives the company access to technology, products, or other resources it doesn't currently have. The communications and information technology industry has become particularly complex, and many companies have been teaming up worldwide.

A greater degree of ownership and control is obtained through acquisition or merger. An *acquisition* involves the purchase of one organization by another so that the buyer assumes control. A *merger* is the unification of two or more organizations into a single unit.[51] In the world of e-business, USWeb and CKS Group merged to create a company that pulls in more than a quarter of a billion dollars by helping companies set up and run Internet divisions. Its clients include the dot-com divisions of companies such as Apple, NBC, and Levi Strauss.[52] The creation of Pharmacia & Upjohn Inc. from the Upjohn Co. of Kalamazoo, Michigan, and Sweden's Pharmacia was a merger. Acquisition occurred when Hewlett-Packard bought VeriFone and when America Online purchased Netscape Communications. These forms of ownership reduce uncertainty in an area important to the acquiring company.

EXHIBIT 4.7 *Organizing Strategies for Controlling the External Environment*

Establishing Interorganizational Linkages	Controlling the Environmental Domain
1. Ownership	1. Change of domain
2. Contracts, joint ventures	2. Political activity, regulation
3. Cooptation, interlocking directorates	3. Trade associations
4. Executive recruitment	4. Illegitimate activities
5. Advertising, public relations	

Formal Strategic Alliances. When there is a high level of complementarity between the business lines, geographical positions, or skills of two companies, the firms often go the route of a strategic alliance rather than ownership through merger or acquisition.[53] Such alliances are formed through contracts and joint ventures.

Contracts and joint ventures reduce uncertainty through a legal and binding relationship with another firm. Contracts come in the form of *license agreements* that involve the purchase of the right to use an asset (such as a new technology) for a specific time and *supplier arrangements* that contract for the sale of one firm's output to another. Contracts can provide long-term security by tying customers and suppliers to specific amounts and prices. For example, McDonald's contracts for an entire crop of russet potatoes to be certain of its supply of french fries. McDonald's also gains influence over suppliers through these contracts and has changed the way farmers grow potatoes and the profit margins they earn, which is consistent with the resource dependence perspective.[54] Large retailers such as Wal-Mart, Kmart, Toys 'R' Us, and Home Depot are gaining so much clout that they can almost dictate contracts telling manufacturers what to make, how to make it, and how much to charge for it. For example, CD companies edit songs and visual covers to cut out "offensive material" in order to get their products on the shelves of Wal-Mart, which sells more than 50 million CDs annually. As one manufacturing rep put it, "Most suppliers would do absolutely anything to sell Wal-Mart."[55] *Joint ventures* result in the creation of a new organization that is formally independent of the parents, although the parents will have some control.[56] In a joint venture, organizations share the risk and cost associated with large projects or innovations. For example, Barnesandnoble.com is a joint venture between Barnes & Noble and Germany's Bertelsmann AG. Barnes & Noble and Bertelsmann have agreed to invest $100 million each and share the risks of the joint venture as it battles Amazon.com in the world of online bookselling.

Cooptation, Interlocking Directorates. Cooptation occurs when leaders from important sectors in the environment are made part of an organization. It takes place, for example, when influential customers or suppliers are appointed to the board of directors, such as when the senior executive of a bank sits on the board of a manufacturing company. As a board member, the banker may become psychologically coopted into the interests of the manufacturing firm. Community leaders also can be appointed to a company's board of directors or to other organizational committees or task forces. These influential people are thus introduced to the needs of the company and are more likely to include the company's interests in their decision making.

An **interlocking directorate** is a formal linkage that occurs when a member of the board of directors of one company sits on the board of directors of another company. The individual is a communications link between companies and can influence policies and decisions. Internet startups, such as the Seattle-based companies TechWave, AccountingNet, and Honkworm International, often use this strategy to share advice and resources.[57] When one individual is the link between two companies, this is typically referred to as a **direct interlock**. An **indirect interlock** occurs when a director of company A and a director of company B are both directors of company C. They have access to one another but do not have direct influence over their respective companies.[58] Recent research shows that, as a firm's financial fortunes decline, direct interlocks with financial institutions increase. Financial uncertainty facing an industry also has been associated with greater indirect interlocks between competing companies.[59]

Executive Recruitment. Transferring or exchanging executives also offers a method of establishing favorable linkages with external organizations. For example, each year the aerospace industry hires retired generals and executives from the Department of Defense. These generals have personal friends in the department, so the aerospace companies obtain better information about technical specifications, prices, and dates for new weapon systems. They can learn the needs of the defense department and are able to present their case for defense contracts in a more effective way. Companies without personal contacts find it nearly impossible to get a defense contract. Having channels of influence and communication between organizations serves to reduce financial uncertainty and dependence for an organization.

Advertising and Public Relations. A traditional way of establishing favorable relationships is through advertising. Organizations spend large amounts of money to influence the taste of consumers. Advertising is especially important in highly competitive consumer industries and in industries that experience variable demand. In the fashion industry, once-stodgy JCPenney turned its Arizona Jeans into one of the hottest brands around through hip advertising featuring rock music and Internet imagery. A recent ad campaign shows teens mocking ads that attempt to speak their language, ending with the tagline "Just show me the jeans."[60]

Public relations is similar to advertising, except that stories often are free and aimed at public opinion. Public relations people cast an organization in a favorable light in speeches, in press reports, and on television. Public relations attempts to shape the company's image in the minds of customers, suppliers, and government officials. For example, in an effort to survive in this antismoking era, tobacco companies have launched an aggressive public relations campaign touting smokers' rights and freedom of choice.

Summary. Organizations can use a variety of techniques to establish favorable linkages that ensure the availability of scarce resources. Linkages provide control over vulnerable environmental elements. Strategic alliances, interlocking directorates, and outright ownership provide mechanisms to reduce resource dependency on the environment. U.S. companies such as IBM, Apple, AT&T, and Motorola have been quick in recent years to turn rivalry into partnership. Perhaps surprisingly, Japan's electronics companies have been slower to become involved in joint ventures and other strategic alliances.

CONTROLLING THE ENVIRONMENTAL DOMAIN

In addition to establishing favorable linkages to obtain resources, organizations often try to change the environment. There are four techniques for influencing or changing a firm's environmental domain.

Change of Domain. The ten sectors described earlier in this chapter are not fixed. The organization decides which business it is in, the market to enter, and the suppliers, banks, employees, and location to use, and this domain can be changed.[61] An organization can seek new environmental relationships and drop old ones. An organization may try to find a domain where there is little competition, no government regulation, abundant suppliers, affluent customers, and barriers to keep competitors out.

Acquisition and divestment are two techniques for altering the domain. Canada's Bombardier, maker of Ski-Doo snowmobiles, began a series of acquisitions to alter its domain when the energy crisis of the mid-1970s nearly wiped out the snowmobile industry. CEO Laurent Beaudoin gradually moved the company into the aerospace industry by negotiating deals to purchase Canadair, Boeing's deHaviland unit, business-jet pioneer Learjet, and Short Brothers of Northern Ireland. Deere & Co. felt vulnerable with the declining customer base for agricultural machinery, so Chairman and CEO Hans Becherer began reallocating resources into other lines of business, such as health care and financial services. Entering these new domains is helping Deere weather uncertain times and take some pressure off the machinery business.[62] An example of divestment is when Sears redefined its domain by selling off its financial services divisions, including Coldwell Banker, Allstate, and Dean Witter, to focus the company on retailing.

Political Activity, Regulation. Political activity includes techniques to influence government legislation and regulation. For example, General Motors used political activity to successfully settle a battle with the U.S. Transportation Department over the safety of some of its pickup trucks. The settlement requires that GM spend $51 million on safety programs over a five-year period but saved the company the cost of a $1 billion recall.[63]

In one technique, organizations pay lobbyists to express their views to members of federal and state legislatures. In the telecommunications industry, the Baby Bells hired powerful lobbyists to influence a sweeping new telecommunications bill giving local phone companies access to new markets.[64] Many CEOs, however, believe they should do their own lobbying. CEOs have easier access than lobbyists and can be especially effective when they do the politicking. Political activity is so important that "informal lobbyist" is an unwritten part of almost any CEO's job description.[65]

Political strategy can be used to erect regulatory barriers against new competitors or to squash unfavorable legislation. Corporations also try to influence the appointment to agencies of people who are sympathetic to their needs. The value of political activity is illustrated by the efforts of Sun Microsystems and Netscape to persuade the Justice Department to break up Microsoft, arguing that Microsoft had acted as a monopoly in controlling the software industry and now threatens to extend that power to Internet access. Some observers noted that if Microsoft had paid more attention to political lobbying earlier, it could have avoided Justice Department investigation.

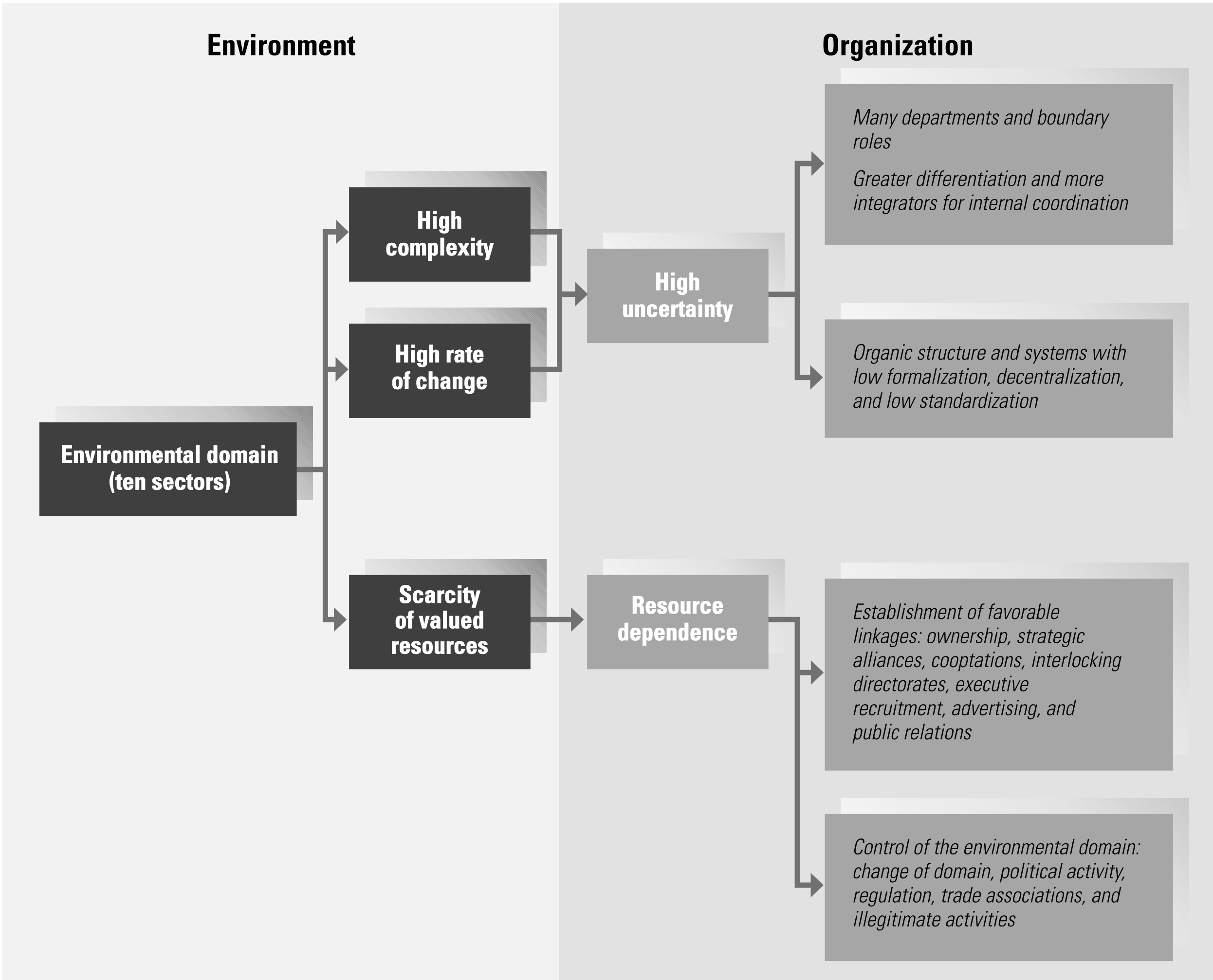
Trade Associations. Much of the work to influence the external environment is accomplished jointly with other organizations that have similar interests. Most manufacturing companies are part of the National Association of Manufacturers and also belong to associations in their specific industry. By pooling resources, these organizations can pay people to carry out activities such as lobbying legislators, influencing new regulations, developing public relations campaigns, and making campaign contributions. For example, the National Tooling and Machining Association (NTMA) devotes a quarter of a million dollars each year to lobbying, mainly on issues that affect small business, such as taxes, health insurance, or government mandates. NTMA also gives its members statistics and information that help them become more competitive in the global marketplace.[66]

Illegitimate Activities. Illegitimate activities represent the final technique companies sometimes use to control their environmental domain. Certain conditions, such as low profits, pressure from senior managers, or scarce environmental resources, may lead managers to adopt behaviors not considered legitimate.[67] Many well-known companies have been found guilty of behavior considered unlawful. Example behaviors include payoffs to foreign governments, illegal political contributions, promotional gifts, and wiretapping. Intense competition among cement producers and in the oil business during a period of decline led to thefts and illegal kickbacks.[68] In the defense industry, the intense competition for declining contracts for major weapon systems led some companies to do almost anything to get an edge, including schemes to peddle inside information and to pay off officials.[69] One study found that companies in industries with low demand, shortages, and strikes were more likely to be convicted for illegal activities, implying that illegal acts are an attempt to cope with resource scarcity.[70] In another study, social movement organizations such as Earth First! and the AIDS Coalition to Unleash Power (ActUp) were found to have acted in ways considered illegitimate or even illegal to bolster their visibility and reputation.[71]

ORGANIZATION-ENVIRONMENT INTEGRATIVE FRAMEWORK

The relationships illustrated in Exhibit 4.8 summarize the two major themes about organization-environment relationships discussed in this chapter. One theme is that the amount of complexity and change in an organization's domain influences the need for information and hence the uncertainty felt within an organization. Greater information uncertainty is resolved through greater structural flexibility, and the assignment of additional departments and boundary roles. When uncertainty is low, management structures can be more mechanistic, and the number of departments and boundary roles can be fewer. The second theme pertains to the scarcity of material and financial resources. The more dependent an organization is on other organizations for those resources, the more important it is to either establish favorable linkages with those organizations or control entry into the domain. If dependence on external resources is low, the organization can maintain autonomy and does not need to establish linkages or control the external domain.

EXHIBIT 4.8 *Relationship Between Environmental Characteristics and Organizational Actions*



Source: Adapted from Gerald Zaltman, Robert Duncan, and Johnny Holbek, Innovations and Organizations (New York: Wiley, 1973), 131.

DISCUSSION QUESTIONS

1. Define *organizational environment*. Would the task environment for a new Internet-based company be the same as that of a government welfare agency? Discuss.
2. What are some forces that influence environmental uncertainty? Which typically has the greatest impact on uncertainty—environmental complexity or environmental change? Why?
3. Why does environmental complexity lead to organizational complexity? Explain.
4. Discuss the importance of the international sector for today's organizations, compared to domestic sectors. What are some ways in which the international sector affects organizations in your city or community?
5. Describe differentiation and integration. In what type of environmental uncertainty will differentiation and integration be greatest? Least?
6. What is an organic organization? A mechanistic organization? How does the environment influence organic and mechanistic structures?
7. Why do organizations become involved in interorganizational relationships? Do these relationships affect an organization's dependency? Performance?
8. Is changing the organization's domain a feasible strategy for coping with a threatening environment? Explain.

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