The dinosaur’s eloquent lesson is that if some bigness is good, an overabundance of bigness is not necessarily better.

—E.A. Johnston
LEARNING OBJECTIVES

After studying this chapter, you should be able to

1. Identify the six key elements that define an organization’s structure
2. Explain the characteristics of a bureaucracy
3. Describe a matrix organization
4. Explain the characteristics of a “virtual” organization
5. Summarize why managers want to create boundaryless organizations
6. Contrast mechanistic and organic structural models
7. List the factors that favor different organizational structures
8. Explain the behavioral implications of different organizational designs
What will tomorrow’s large organization look like and what kind of people will it employ? If you want a prototype, consider the structure used by the organizing committee for the 1996 Summer Olympic Games in Atlanta.¹

The Atlanta Committee for the Olympic Games (ACOG) was created in 1990, shortly after Atlanta won the bid for the Games. Headed by William Porter Payne (see photo), it began with literally half a dozen people. Yet it would grow to a peak of more than 88,000 (including volunteers). And then, in a matter of months, it would be closed down and essentially “go out of business.” Full-time employees peaked at 4,500 during the Games in July. By August 30th, only 700 remained. And by January 1997, the ACOG employed fewer than 100 people. As one early employee described the task, it was equivalent to creating and dismantling a Fortune 500 company in a couple of years.

The task of putting an Olympics together is monumental. In Atlanta’s case, this included raising money, signing up sponsors, building stadiums, installing security systems, creating marketing plans, printing tickets, hiring and training translators, and supervising tens-of-thousands of volunteers. To complete these tasks, the ACOG cre-
ated a top-management team heading 13 units ranging from construction to security.

What kind of individuals are required to make an organization like this work? People who are flexible! They have to have the ability to make decisions on the fly, adjust to constantly changing situations, and feel comfortable in an environment where they know their workdays are numbered. But flexibility isn’t something that’s easy to teach. You can’t train people to be flexible, said Doris Issacs-Stallworth, ACOG’s managing director of administration. You have to hire people who are both specialists in their area of expertise, such as marketing or finance, and yet who are able to pick up the slack wherever else they’re needed. Issacs-Stallworth jokingly counted her three years with the Olympic committee in “dog years”—one year with ACOG being like seven in another organization.

Tomorrow’s large organizations are very likely to be much more adaptable than ones with which we’ve become familiar. They’ll look more like the structure of the ACOG than the traditional rigid bureaucracy. And the type of people they’ll need will have to be, like those employed by the ACOG, highly flexible. Unfortunately, a lot of people are likely to have trouble adjusting to this need for flexibility. ♦
The theme of this chapter is that organizations have different structures and that these structures have a bearing on employee attitudes and behavior. More specifically, in the following pages, we define the key components that make up an organization’s structure, present half a dozen or so structural design options from which managers can choose, identify the contingency factors that make certain structural designs preferable in varying situations, and conclude by considering the different effects that various organizational designs have on employee behavior.

What Is Organizational Structure?

An organizational structure defines how job tasks are formally divided, grouped, and coordinated. There are six key elements that managers need to address when they design their organization’s structure. These are: work specialization, departmentalization, chain of command, span of control, centralization and decentralization, and formalization. Exhibit 13-1 presents each of these elements as answers to an important structural question. The following sections describe these six elements of structure.
Work Specialization

Early in this century, Henry Ford became rich and famous by building automobiles on an assembly line. Every Ford worker was assigned a specific, repetitive task. For instance, one person would just put on the right-front wheel and someone else would install the right-front door. By breaking jobs up into small standardized tasks, which could be performed over and over again, Ford was able to produce cars at the rate of one every ten seconds, while using employees who had relatively limited skills.

Ford demonstrated that work can be performed more efficiently if employees are allowed to specialize. Today we use the term work specialization or division of labor to describe the degree to which tasks in the organization are subdivided into separate jobs.

The essence of work specialization is that, rather than an entire job being done by one individual, it is broken down into a number of steps, each step being completed by a separate individual. In essence, individuals specialize in doing part of an activity rather than the entire activity.

By the late 1940s, most manufacturing jobs in industrialized countries were being done with high work specialization. Management saw this as a means to make the most efficient use of its employees’ skills. In most organizations, some tasks require highly developed skills; others can be performed by the untrained. If all workers were engaged in each step of, say, an organization’s manu-
facturing process, all would have to have the skills necessary to perform both the most demanding and the least demanding jobs. The result would be that, except when performing the most skilled or highly complex tasks, employees would be working below their skill levels. And since skilled workers are paid more than unskilled workers and their wages tend to reflect their highest level of skill, it rep-
resents an inefficient usage of organizational resources to pay highly skilled workers to do easy tasks.

Managers also looked for other efficiencies that could be achieved through work specialization. Employee skills at performing a task successfully increase through repetition. Less time is spent in changing tasks, in putting away one’s tools and equipment from a prior step in the work process, and in getting ready for another. Equally important, training for specialization is more efficient from the organization’s perspective. It is easier and less costly to find and train workers to do specific and repetitive tasks. This is especially true of highly sophisticated and complex operations. For example, could Cessna produce one Citation jet a year if one person had to build the entire plane alone? Not likely! Finally, work specialization increases efficiency and productivity by encouraging the creation of special inventions and machinery.

For much of the first half of this century, managers viewed work specialization as an unending source of increased productivity. And they were probably right. Because specialization was not widely practiced, its introduction almost always generated higher productivity. But by the 1960s, there became increasing evidence that a good thing can be carried too far. The point had been reached in some jobs where the human diseconomies from specialization—which surfaced as boredom, fatigue, stress, low productivity, poor quality, increased absenteeism, and high turnover—more than off-
set the economic advantages (see Exhibit 13-2). In such cases, productivity could be increased by enlarging, rather than narrowing, the scope of job activities. Additionally, a number of companies found that by giving employees a variety of activities to do, allowing them to do a whole and complete job, and by putting them into...
teams with interchangeable skills, they often achieved significantly higher output with increased employee satisfaction.

Most managers today see work specialization as neither obsolete nor as an unending source of increased productivity. Rather, managers recognize the economies it provides in certain types of jobs and the problems it creates when it’s carried too far. You’ll find, for example, high work specialization being used by McDonald’s to efficiently make and sell hamburgers and fries, and by medical specialists in most health maintenance organizations. On the other hand, companies like Saturn Corporation have had success by broadening the scope of jobs and reducing specialization.

**Departmentalization**

Once you’ve divided jobs up through work specialization, you need to group these jobs together so common tasks can be coordinated. The basis by which jobs are grouped together is called **departmentalization**.

One of the most popular ways to group activities is by **functions** performed. A manufacturing manager might organize his or her plant by separating engineering, accounting, manufacturing, personnel, and purchasing specialists into common departments. Of course, departmentalization by function can be used in all types of organizations. Only the functions change to reflect the organiza-
tion’s objectives and activities. A hospital might have departments devoted to research, patient care, accounting, and so forth. A professional football franchise might have departments entitled Player Personnel, Ticket Sales, and Travel and Accommodations. The major advantage to this type of grouping is obtaining efficiencies from putting like specialists together. Functional departmentalization seeks to achieve economies of scale by placing people with common skills and orientations into common units.

Tasks can also be departmentalized by the type of product the organization produces. At Sun Petroleum Products, for instance, each of the three major product areas in the corporation (fuels, lubricants and waxes, and chemicals) is placed under the authority of a vice president who is a specialist in, and responsible for, everything having to do with his or her product line. Each, for example, would have his or her own manufacturing and marketing group. The major advantage to this type of grouping is increased accountability for product performance, since all activities related to a specific product are under the direction of a single manager. If an organization’s activities are service rather than product related, each service would be autonomously grouped. For instance, an accounting firm could have departments for tax, management consulting, auditing, and the like. Each would offer a common array of services under the direction of a product or service manager.
Another way to departmentalize is on the basis of geography or territory. The sales function, for instance, may have western, southern, midwestern, and eastern regions. Each of these regions is, in effect, a department organized around geography. If an organization’s customers are scattered over a large geographic area and have similar needs based on their location, then this form of departmentalization can be valuable.

At a Reynolds Metals aluminum tubing plant in upstate New York, production is organized into five departments: casting; press; tubing; finishing; and inspecting, packing, and shipping. This is an example of process departmentalization because each department specializes in one specific phase in the production of aluminum tubing. The metal is cast in huge furnaces; sent to the press department, where it is extruded into aluminum pipe; transferred to the tube mill, where it is stretched into various sizes and shapes of tubing; moved to finishing, where it is cut and cleaned; and finally arrives in the inspecting, packing, and shipping department. Since each process requires different skills, this method offers a basis for the homogeneous categorizing of activities.

Process departmentalization can be used for processing customers as well as products. If you’ve ever been to a state motor vehicles office to get a driver’s license, you probably went through several departments before receiving your license. In one state, applicants must go through three steps, each handled by a separate department: (1) vali-
A final category of departmentalization is to use the particular type of customer the organization seeks to reach. The sales activities in an office supply firm, for instance, can be broken down into three departments to service retail, wholesale, and government customers. A large law office can segment its staff on the basis of whether they service corporate or individual clients. The assumption underlying customer departmentalization is that customers in each department have a common set of problems and needs that can best be met by having specialists for each.

Large organizations may use all of the forms of departmentalization that we’ve described. A major Japanese electronics firm, for instance, organizes each of its divisions along functional lines and its manufacturing units around processes; it departmentalizes sales around seven geographic regions, and divides each sales region into four customer groupings. Two general trends, however, seem to be gaining momentum in the 1990s. First, customer departmentalization is growing in popularity. In order to better monitor the needs of customers and to be better able to respond to changes in those needs, many organizations have given greater emphasis to customer departmentalization. Xerox, for example, has eliminated its corporate marketing staff and placed marketing specialists out in the field. This allows the company to better understand who their customers are.
customers are and to respond faster to their requirements. The second trend is that rigid, functional departmentalization is being complemented by teams that cross over traditional departmental lines. As we described in chapter 8, as tasks have become more complex and more diverse skills are needed to accomplish those tasks, management has turned to cross-functional teams.

Chain of Command

Twenty years ago, the chain-of-command concept was a basic cornerstone in the design of organizations. As you’ll see, it has far less importance today. But contemporary managers should still consider its implications when they decide how best to structure their organizations.

The **chain of command** is an unbroken line of authority that extends from the top of the organization to the lowest eschelon and clarifies who reports to whom. It answers questions for employees such as “To whom do I go if I have a problem?” and “To whom am I responsible?”

You can’t discuss the chain of command without discussing two complementary concepts: **authority** and **unity of command**. Authority refers to the rights inherent in a managerial position to give orders and expect the orders to be obeyed. To facilitate coordination, each managerial position is given a place in the chain of command.
mand, and each manager is given a degree of authority in order to meet his or her responsibilities. The **unity-of-command** principle helps preserve the concept of an unbroken line of authority. It states that a person should have one and only one superior to whom he or she is directly responsible. If the unity of command is broken, a subordinate might have to cope with conflicting demands or priorities from several superiors.

Times change and so do the basic tenets of organizational design. The concepts of chain of command, authority, and unity of command have substantially less relevance today because of advancements in computer technology and the trend toward empowering employees. Just how different things are today is illustrated in the following excerpt from an article in *Business Week*.

Puzzled, Charles Chaser scanned the inventory reports from his company’s distribution centers one Wednesday morning in mid-March. According to the computer printouts, stocks of Rose Awakening Cutex nail polish were down to three days’ supply, well below the three-and-a-half week stock Chesebrough-Pond’s Inc. tries to keep on hand. But Chaser knew his Jefferson City (Missouri) plant had shipped 346 dozen bottles of the polish just two days before. Rose Awakening must be flying off store shelves, he thought. So Chaser turned to his termi-
nal next to the production line and typed in instructions to produce 400 dozen more bottles on Thursday morning.

All in a day’s work for a scheduling manager, right? Except for one detail: Chaser isn’t management. He’s a line worker—officially a “line coordinator”—one of hundreds who routinely tap the plant’s computer network to track shipments, schedule their own workloads, and generally perform functions that used to be the province of management.4

A low-level employee today can access information in seconds that 20 years ago was available only to top managers. Similarly, computer technology increasingly allows employees anywhere in an organization to communicate with anyone else without going through formal channels. Moreover, the concepts of authority and maintaining the chain of command are increasingly less relevant as operating employees are being empowered to make decisions that previously were reserved for management. Add to this the popularity of self-managed and cross-functional teams and the creation of new structural designs that include multiple bosses, and the unity-of-command concept takes on less relevance. There are, of course, still many organizations that find they can be most productive by enforcing the chain of command. There just seem to be fewer of them nowadays.
**Span of Control**

How many subordinates can a manager efficiently and effectively direct? This question of *span of control* is important because, to a large degree, it determines the number of levels and managers an organization has. All things being equal, the wider or larger the span, the more efficient the organization. An example can illustrate the validity of this statement.

Assume that we have two organizations, both of which have approximately 4,100 operative-level employees. As Exhibit 13-3 illustrates, if one has a uniform span of four and the other a span of eight, the wider span would have two fewer levels and approximately 800 fewer managers. If the average manager made $40,000 a year, the wider span would save $32 million a year in management salaries! Obviously, wider spans are more efficient in terms of cost. However, at some point wider spans reduce effectiveness. That is, when the span becomes too large, employee performance suffers because supervisors no longer have the time to provide the necessary leadership and support.

Small spans have their advocates. By keeping the span of control to five or six employees, a manager can maintain close control. But small spans have three major drawbacks. First, as already described, they’re expensive because they add levels of management. Second, they make vertical communication in the organization more complex. The added levels of hierarchy slow down deci-
sion making and tend to isolate upper management. Third, small spans of control encourage overly tight supervision and discourage employee autonomy.

The trend in recent years has been toward larger spans of control. For example, the span for managers at companies such as General Electric and Reynolds Metals has expanded to ten or twelve subordinates—twice the number of 20 years ago. Tom Smith, a regional manager with Carboline Co., oversees 27 people. His counterpart of 20 years ago would have typically managed 12 employees.
Wide spans of control are consistent with recent efforts by companies to reduce costs, cut overhead, speed up decision making, increase flexibility, get closer to customers, and empower employ-
ees. However, to ensure that performance doesn’t suffer because of these wider spans, organizations have been investing heavily in employee training. Managers recognize that they can handle a wider span when employees know their jobs inside and out or can turn to their co-workers when they have questions.

Centralization and Decentralization

In some organizations, top managers make all the decisions. Lower-level managers merely carry out top management’s directives. At the other extreme, there are organizations where decision making is pushed down to those managers who are closest to the action. The former organizations are highly centralized; the latter are decentralized.

The term **centralization** refers to the degree to which decision making is concentrated at a single point in the organization. The concept includes only formal authority, that is, the rights inherent in one’s position. Typically, it’s said that if top management makes the organization’s key decisions with little or no input from lower-level personnel, then the organization is centralized. In contrast, the more that lower-level personnel provide input or are actually given the discretion to make decisions, the more **decentralization** there is.
An organization characterized by centralization is an inherently different structural animal from one that is decentralized. In a decentralized organization, action can be taken more quickly to solve problems, more people provide input into decisions, and employees are less likely to feel alienated from those who make the decisions that affect their work lives.

Consistent with recent management efforts to make organizations more flexible and responsive, there has been a marked trend toward decentralizing decision making. In large companies, lower-level managers are closer to “the action” and typically have more detailed knowledge about problems than do top managers. Big retailers like Sears and J. C. Penney have given their store managers considerably more discretion in choosing what merchandise to stock. This allows those stores to compete more effectively against local merchants. Similarly, the Bank of Montreal grouped its 1,164 Canadian branches into 236 “communities,” that is, a group of branches within a limited geographical area. Each community is led by a community area manager, who typically works within a 20-minute drive of the other branches. These area managers can respond more quickly and more intelligently to problems in their communities than could some senior executive in Montreal. IBM Europe’s chairperson Renato Riverso has similarly sliced the Continent into some 200 autonomous business units, each with its own profit plan, employee incentives, and customer focus. “We
used to manage from the top, like an army,” said Riverso. “Now
we’re trying to create entities that drive themselves.”

**Formalization**

**Formalization** refers to the degree to which jobs within the organ-
ization are standardized. If a job is highly formalized, then the job
incumbent has a minimum amount of discretion over what is to be
done, when it is to be done, and how he or she should do it.
Employees can be expected always to handle the same input in
exactly the same way, resulting in a consistent and uniform output.
There are explicit job descriptions, lots of organizational rules, and
clearly defined procedures covering work processes in organizations
where there is high formalization. Where formalization is low, job
behaviors are relatively nonprogrammed and employees have a
great deal of freedom to exercise discretion in their work. Since an
individual’s discretion on the job is inversely related to the amount
of behavior in that job that is preprogrammed by the organization,
the greater the standardization, the less input the employee has
into how his or her work is to be done. Standardization not only
eliminates the possibility of employees engaging in alternative
behaviors, but it even removes the need for employees to consider
alternatives.
Delegating Authority

If you’re a manager and want to delegate some of your authority to someone else, how do you go about it? The following summarizes the primary steps you need to take.

1. Clarify the assignment. The place to begin is to determine what is to be delegated and to whom. You need to identify the person most capable of doing the task, then determine if he or she has the time and motivation to do the job.

   Assuming you have a willing and able subordinate, it is your responsibility to provide clear information on what is being delegated, the results you expect, and any time or performance expectations you hold.

   Unless there is an overriding need to adhere to specific methods, you should delegate only the end results. That is, get agreement on what is to be done and the end results expected, but let the subordinate decide on the means.

2. Specify the subordinate’s range of discretion. Every act of delegation comes with constraints. You’re delegating authority to act, but not unlimited authority. What you’re delegating is authority to act on certain issues and, on those issues, within certain parameters. You need to specify what those parameters are so subordinates know, in no uncertain terms, the range of their discretion.

3. Allow the subordinate to participate. One of the best sources for determining how much authority will
be necessary to accomplish a task is the subordinate who will be held accountable for that task. If you allow employees to participate in determining what is delegated, how much authority is needed to get the job done, and the standards by which they’ll be judged, you increase employee motivation, satisfaction, and accountability for performance.

4. *Inform others that delegation has occurred.* Delegation should not take place in a vacuum. Not only do you and the subordinate need to know specifically what has been delegated and how much authority has been granted, but anyone else who may be affected by the delegation act also needs to be informed.

5. *Establish feedback controls.* The establishment of controls to monitor the subordinate’s progress increases the likelihood that important problems will be identified early and that the task will be completed on time and to the desired specifications. For instance, agree on a specific time for completion of the task, and then set progress dates when the subordinate will report back on how well he or she is doing and any major problems that have surfaced. This can be supplemented with periodic spot checks to ensure that authority guidelines are not being abused, organization policies are being followed, and proper procedures are being met.
The degree of formalization can vary widely between organizations and within organizations. Certain jobs, for instance, are well known to have little formalization. College book travelers—the representatives of publishers who call on professors to inform them of their company’s new publications—have a great deal of freedom in their jobs. They have no standard sales “spiel,” and the extent of rules and procedures governing their behavior may be little more than the requirement that they submit a weekly sales report and some suggestions on what to emphasize for the various new titles. At the other extreme, there are clerical and editorial positions in the same publishing houses where employees are required to “clock in” at their work stations by 8:00 a.m. or be docked a half-hour’s pay and, once at that work station, to follow a set of precise procedures dictated by management.

**Common Organizational Designs**

We now turn to describing three of the more common organizational designs found in use: the *simple structure*, the *bureaucracy*, and the *matrix structure*. 
The Simple Structure

What do a small retail store, an electronics firm run by a hard-driving entrepreneur, a new Planned Parenthood office, and an airline in the midst of a companywide pilot’s strike have in common? They probably all utilize the simple structure.

The simple structure is said to be characterized most by what it is not rather than what it is. The simple structure is not elaborated. It has a low degree of departmentalization, wide spans of control, authority centralized in a single person, and little formalization. The simple structure is a “flat” organization; it usually has only two or three vertical levels, a loose body of employees, and one individual in whom the decision-making authority is centralized.

The simple structure is most widely practiced in small businesses in which the manager and the owner are one and the same. This, for example, is illustrated in Exhibit 13-5, an organization chart for a retail men’s store. Jack Gold owns and manages this store. Although Jack Gold employs five full-time salespeople, a cashier, and extra personnel for weekends and holidays, he “runs the show.”

The strength of the simple structure lies in its simplicity. It’s fast, flexible, inexpensive to maintain, and accountability is clear. One major weakness is that it’s difficult to maintain in anything other than small organizations. It becomes increasingly inadequate as an organization grows because its low formalization and high
centralization tend to create information overload at the top. As size increases, decision making typically becomes slower and can eventually come to a standstill as the single executive tries to continue making all the decisions. This often proves to be the undoing of many small businesses. When an organization begins to employ 50 or 100 people, it’s very difficult for the owner-manager to make
all the choices. If the structure isn’t changed and made more elaborate, the firm often loses momentum and can eventually fail. The simple structure’s other weakness is that it’s risky—everything depends on one person. One heart attack can literally destroy the organization’s information and decision-making center.

The simple structure isn’t strictly limited to small organizations, it’s just harder to make it work effectively in larger firms. One large company that seems to have succeeded with the simple structure is Nucor Corp., a $2.3 billion steel company that operates minimills in Indiana and Arkansas. Its headquarters in Charlotte, North Carolina employs just 24 people. And there are only three levels between the company’s president and mill workers. This lean structure has helped Nucor to become one of the most profitable steelmakers in the United States.

**The Bureaucracy**

Standardization! That’s the key concept that underlies all bureaucracies. Take a look at the bank where you keep your checking account, the department store where you buy your clothes, or the government offices that collect your taxes, enforce health regulations, or provide local fire protection. They all rely on standardized work processes for coordination and control.
The **bureaucracy** is characterized by highly routine operating tasks achieved through specialization, very formalized rules and regulations, tasks that are grouped into functional departments, centralized authority, narrow spans of control, and decision making that follows the chain of command.

The primary strength of the bureaucracy lies in its ability to perform standardized activities in a highly efficient manner. Putting like specialties together in functional departments results in economies of scale, minimum duplication of personnel and equipment, and employees who have the opportunity to talk “the same language” among their peers. Furthermore, bureaucracies can get by nicely with less talented—and, hence, less costly—middle- and lower-level managers. The pervasiveness of rules and regulations substitutes for managerial discretion. Standardized operations, coupled with high formalization, allow decision making to be centralized. There is little need, therefore, for innovative and experienced decision makers below the level of senior executives.

One of the major weaknesses of a bureaucracy is illustrated in the following dialogue between four executives in one company: “Ya know, nothing happens in this place until we *produce* something,” said the production executive. “Wrong,” commented the research and development manager, “nothing happens until we *design* something!” “What are you talking about?” asked the marketing executive. “Nothing happens here until we *sell* something!”
Finally, the exasperated accounting manager responded, “It doesn’t matter what you produce, design, or sell. No one knows what happens until we tally up the results!” This conversation points up the fact that specialization creates subunit conflicts. Functional unit goals can override the overall goals of the organization.

The other major weakness of a bureaucracy is something we’ve all experienced at one time or another when having to deal with people who work in these organizations: obsessive concern with following the rules. When cases arise that don’t precisely fit the rules, there is no room for modification. The bureaucracy is efficient only as long as employees confront problems that they have previously encountered and for which programmed decision rules have already been established.

The peak of bureaucracy’s popularity was probably in the 1950s and 1960s. At that time, for instance, just about every major corporation in the world—firms such as IBM, General Electric, Volkswagen, Matsushita, and Royal Dutch Shell—was organized as a bureaucracy. Although the bureaucracy is currently out of fashion—critics argue that it can’t respond rapidly to change and hinders employee initiative—the majority of large organizations still take on basic bureaucratic characteristics, particularly specialization and high formalization. However, spans of control have generally been widened, authority has become more decentralized, and functional departments have been supplemented with an increased use
of teams. Another trend is toward breaking bureaucracies up into smaller, though fully functioning, minibureaucracies. These smaller versions, with 150 to 250 people, each have their own mission and profit goals. It’s been estimated that about 15 percent of large corporations have taken this direction. For instance, Eastman Kodak has transformed over 100 production units into separate businesses. ABB Asea Brown Boveri, a $32 billion corporation with 210,000 employees, has broken itself into 1,300 companies divided into almost 5,000 profit centers that are located in 140 different countries.

The Matrix Structure

Another popular organizational design option is the matrix structure. You’ll find it being used in advertising agencies, aerospace firms, research and development laboratories, construction companies, hospitals, government agencies, universities, management consulting firms, and entertainment companies. Essentially, the matrix combines two forms of departmentalization: functional and product.

The strength of functional departmentalization lies in putting like specialists together, which minimizes the number necessary, while it allows the pooling and sharing of specialized resources across products. Its major disadvantage is the difficulty of coordi-
nating the tasks of diverse functional specialists so that their activities are completed on time and within budget. Product departmentalization, on the other hand, has exactly the opposite benefits and disadvantages. It facilitates coordination among specialties to achieve on-time completion and meet budget targets. Furthermore, it provides clear responsibility for all activities related to a product, but with duplication of activities and costs. The matrix attempts to gain the strengths of each, while avoiding their weaknesses.

The most obvious structural characteristic of the matrix is that it breaks the unity-of-command concept. Employees in the matrix have two bosses—their functional department managers and their product managers. Therefore, the matrix has a dual chain of command.

Exhibit 13-6 shows the matrix form as used in a college of business administration. The academic departments of accounting, economics, marketing, and so forth are functional units. Additionally, specific programs (that is, products) are overlaid on the functions. In this way, members in a matrix structure have a dual assignment—to their functional department, and to their product groups. For instance, a professor of accounting teaching an undergraduate course reports to the director of undergraduate programs as well as to the chairperson of the accounting department.
Johnson & Johnson (J&J) has developed a remarkable record for developing new products. In spite of its size—its annual revenues are approaching $21 billion—36 percent of its current sales come from products introduced within the previous five years. How does this huge company generate such innovation and growth? By structuring itself more like a small entrepreneurial firm.

“We don’t view ourselves as a big company,” says its chairman, Ralph Larsen. “We view ourselves as 160 small companies.”

A couple of decades ago, J&J was a consumer products firm. It made Band-Aids, baby powder, shampoos, and Tylenol. Today it still makes those consumer products but it gets two-thirds of its sales and most of its growth from pharmaceuticals and professional services. Two success stories illustrate how J&J works.

J&J’s management decided that interventional cardiology would become a huge business. To become involved in it, J&J created Interventional Systems. Starting with a general manager, a small staff, and no sales, they were told to create a business. Looking for opportunities, the new unit’s managers discovered some medical specialists who had
invented a tiny stainless steel scaffold that could be inserted inside a blocked artery using a balloon. This scaffold would allow blood to flow unimpeded. After investing heavily in clinical trials and in design and manufacturing processes, the scaffold was approved by the Federal Drug Administration in 1994. The next year this device brought J&J some $520 million in revenues and an estimated net earnings of some $200 million.

In the early 1980s, the market for contact lenses was dominated by Bausch & Lomb. J&J was on the verge of closing Vistakon, its contact lens division, when managers decided that they could develop a technology for making disposable contact lenses. The idea seemed preposterous at the time, since regular lenses were selling for $150 a pair. “It was a crazy idea,” Larsen noted, “but there were people in our company who believed it could happen.” Vistakon’s managers spent five years and more than $200 million testing and developing the idea. Introduced in 1988, disposables were an immediate hit. The company now sells around $560 million worth every year, making J&J the world’s leading contact lens maker.

The strength of the matrix lies in its ability to facilitate coordination when the organization has a multiplicity of complex and interdependent activities. As an organization gets larger, its information processing capacity can become overloaded. In a bureaucracy, complexity results in increased formalization. The direct and frequent contact between different specialties in the matrix can make for better communication and more flexibility. Information permeates the organization and more quickly reaches those people who need to take account of it. Furthermore, the matrix reduces bureauopathologies. The dual lines of authority reduce tendencies of departmental members to become so busy protecting their little worlds that the organization’s overall goals become secondary.

There is also another advantage to the matrix. It facilitates the efficient allocation of specialists. When individuals with highly specialized skills are lodged in one functional department or product group, their talents are monopolized and underutilized. The matrix achieves the advantages of economies of scale by providing the organization with both the best resources and an effective way of ensuring their efficient deployment.

The major disadvantages of the matrix lie in the confusion it creates, its propensity to foster power struggles, and the stress it places on individuals. When you dispense with the unity-of-command concept, ambiguity is significantly increased and ambiguity often leads to conflict. For example, it’s frequently unclear who
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reports to whom, and it is not unusual for product managers to fight over getting the best specialists assigned to their products. Confusion and ambiguity also create the seeds of power struggles. Bureaucracy reduces the potential for power grabs by defining the rules of the game. When those rules are “up for grabs,” power struggles between functional and product managers result. For individuals who desire security and absence from ambiguity, this work climate can produce stress. Reporting to more than one boss introduces role conflict, and unclear expectations introduce role ambiguity. The comfort of bureaucracy’s predictability is absent, replaced by insecurity and stress.

New Design Options

Since the early 1980s, senior managers in a number of organizations have been working to develop new structural options that can better help their firms compete effectively. In this section, we’ll describe three such structural designs: the team structure, the virtual organization, and the boundaryless organization.

The Team Structure

As described in Chapter 8, teams have become an extremely popular means around which to organize work activities. When man-
management uses teams as its central coordination device, you have a **team structure**. The primary characteristics of the team structure are that it breaks down departmental barriers and decentralizes decision making to the level of the work team. Team structures also require employees to be generalists as well as specialists.\(^{17}\)

In smaller companies, the team structure can define the entire organization. For instance, Imedia, a 30-person marketing firm in New Jersey, is organized completely around teams which have full responsibility for most operational issues and client services.\(^{18}\)

More often, particularly among larger organizations, the team structure complements what is typically a bureaucracy. This allows the organization to achieve the efficiency of bureaucracy’s standardization, while gaining the flexibility that teams provide. To improve productivity at the operating level, for instance, companies like Chrysler, Saturn, Motorola, and Xerox have made extensive use of self-managed teams. On the other hand, when companies like Boeing or Hewlett-Packard need to design new products or coordinate major projects, they’ll structure activities around cross-functional teams.

**The Virtual Organization**

Why own when you can rent? That question captures the essence of the **virtual organization** (also sometimes called the *network* or *modular* organization), typically a small, core organization that outsources major business functions.
sources major business functions. In structural terms, the virtual organization is highly centralized, with little or no departmentalization.

The prototype of the virtual structure is today’s movie-making organization. In Hollywood’s golden era, movies were made by huge, vertically integrated corporations. Studios such as MGM, Warner Brothers, and 20th-Century Fox owned large movie lots and employed thousands of full-time specialists—set designers, camera people, film editors, directors, and even actors. Nowadays, most movies are made by a collection of individuals and small companies who come together and make films project by project. This structural form allows each project to be staffed with the talent most suited to its demands, rather than having to choose just from those people the studio employs. It minimizes bureaucratic overhead since there is no lasting organization to maintain. And it lessens long-term risks and their costs because there is no long term—a team is assembled for a finite period and then disbanded.

Companies like Nike, Reebok, Liz Claiborne, Emerson Radio, and Dell Computer are just a few of the thousands of companies that have found that they can do hundreds of millions of dollars in business without owning manufacturing facilities. Dell Computer, for instance, owns no plants and merely assembles computers from outsourced parts. National Steel Corp. contracts out its mail-room
operations; AT&T farms out its credit card processing; and Mobil Oil Corp. has turned over maintenance of its refineries to another firm.

What’s going on here? A quest for maximum flexibility. These virtual organizations have created networks of relationships that allow them to contract out manufacturing, distribution, marketing, or any other business function where management feels that others can do it better or more cheaply.

The virtual organization stands in sharp contrast to the typical bureaucracy that has many vertical levels of management and
where control is sought through ownership. In such organizations, research and development are done in-house, production occurs in company-owned plants, and sales and marketing are performed by the company's own employees. To support all this, management has to employ extra personnel including accountants, human resource specialists, and lawyers. The virtual organization, however, outsources many of these functions and concentrates on what it does best. For most U.S. firms, that means focusing on design or marketing. Emerson Radio Corporation, for example, designs and engineers its televisions, stereos, and other consumer electronic products, but it contracts out its manufacture to Asian suppliers.

Exhibit 13-7 shows a virtual organization in which management outsources all of the primary functions of the business. The core of the organization is a small group of executives, whose job is to oversee directly any activities that are done in-house and to coordinate relationships with the other organizations that manufacture, distribute, and perform other crucial functions for the virtual organization. The arrows in Exhibit 13-7 represent those relationships typically maintained under contracts. In essence, managers in virtual structures spend most of their time coordinating and controlling external relations, typically by way of computer-network links.

The major advantage to the virtual organization is its flexibility. For instance, it allowed someone with an innovative idea and little money, such as Michael Dell and his Dell Computer firm, to suc-
Exhibit 13-7
A Virtual Organization

- Independent research and development consulting firm
- Executive group
- Factories in South Korea
- Advertising agency
- Commissioned sales representatives
cessfully compete against large companies like IBM. The primary drawback to this structure is that it reduces management’s control over key parts of its business.

The Boundaryless Organization

General Electric chairman, Jack Welch, coined the term *boundaryless organization* to describe his idea of what he wanted GE to become. Welch wanted to turn his company into a “$60 billion family grocery store.”21 That is, in spite of its monstrous size, he wanted to eliminate *vertical* and *horizontal* boundaries within GE and breakdown *external* barriers between the company and its customers and suppliers. The boundaryless organization seeks to eliminate the chain of command, have limitless spans of control, and replace departments with empowered teams.

Although GE hasn’t yet achieved this boundaryless state—and probably never will—it has made significant progress toward this end. So have other companies like Hewlett-Packard, AT&T, and Motorola. Let’s take a look at what a boundaryless organization would look like and what some firms are doing to make it a reality.22

By removing *vertical* boundaries, management flattens the hierarchy. Status and rank are minimized. And the organization looks more like a silo than a pyramid, where the grain at the top is no different than the grain at the bottom. Cross-hierarchical teams (which

**boundaryless organization**

An organization that seeks to eliminate the chain of command, have limitless spans of control, and replace departments with empowered teams.
include top executives, middle managers, supervisors, and operative employees), participative decision-making practices, and the use of 360-degree performance appraisals (where peers and others above and below the employee evaluate his or her performance) are examples of what GE is doing to break down vertical boundaries.

Functional departments create horizontal boundaries. The way to reduce these barriers is to replace functional departments with cross-functional teams and to organize activities around processes. For instance, Xerox now develops new products through multidisciplinary teams that work in a single process instead of around narrow functional tasks. Similarly, some AT&T units are now doing annual budgets based not on functions or departments but on processes such as the maintenance of a worldwide telecommunications network. Another way management can cut through horizontal barriers is to use lateral transfers and rotate people into and out of different functional areas. This turns specialists into generalists.

When fully operational, the boundaryless organization also breaks down barriers to external constituencies and barriers created by geography. Globalization, strategic alliances, supplier–organization and customer–organization linkages, and telecommuting are all examples of practices that reduce external boundaries. Coca-Cola, for instance, sees itself as a global corporation, not a U.S. or Atlanta company. Firms like NEC Corp., Boeing, and Apple Computer each have strategic alliances or joint partnerships with
dozens of companies. These alliances blur the distinction between one organization and another as employees work on joint projects. Many organizations are also blurring the line between themselves and their suppliers. For instance, the CEO of Merix Corp., a 750-employee electronics firm, said, “We have people who work here that I thought were Merix employees. They have our badges, and I
see them every day, but it turns out that they really work for our suppliers.” Companies like AT&T and Northwest Airlines are allowing customers to perform functions that previously were done by management. For instance, some AT&T units are receiving bonuses based on customer evaluations of the teams that serve them. Northwest gives its frequent fliers ten $50 award certificates each year and tells these customers to distribute these awards to Northwest employees when they see them do something good. This practice, in essence, allows Northwest’s customers to participate in employee appraisals. Finally, we suggest that telecommuting is blurring organizational boundaries. The security analyst with Merrill Lynch who does his job from his ranch in Montana or the software designer who works for a San Francisco company but does her job in Boulder, Colorado are just two examples of the millions of workers who are now doing their jobs outside the physical boundaries of their employers’ premises.

The one common technological thread that makes the boundaryless organization possible is networked computers. They allow people to communicate across intraorganizational and interorganizational boundaries. Electronic mail, for instance, enables hundreds of employees to share information simultaneously and allows rank-and-file workers to communicate directly with senior executives. And interorganizational networks now make it possible for Wal-Mart suppliers like Procter & Gamble and Levi Strauss to mon-
itor inventory levels of laundry soap and jeans, respectively, because P&G and Levi’s computer systems are networked to Wal-Mart’s system.

**Why Do Structures Differ?**

In the previous sections, we described a variety of organizational designs ranging from the highly structured and standardized bureaucracy to the loose and amorphous boundaryless organization. The other designs we discussed tend to exist somewhere between these two extremes.

Exhibit 13-8 reconceptualizes our previous discussions by presenting two extreme models of organizational design. One extreme we’ll call the **mechanistic model**. It is generally synonymous with the bureaucracy in that it has extensive departmentalization, high formalization, a limited information network (mostly downward communication), and little participation by low-level members in decision making. At the other extreme is the **organic model**. This model looks a lot like the boundaryless organization. It’s flat, uses cross-hierarchical and cross-functional teams, has low formalization, possesses a comprehensive information network (utilizing lateral and upward communication as well as downward), and it involves high participation in decision making.24

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**mechanistic model**
A structure characterized by extensive departmentalization, high formalization, a limited information network, and centralization.

**organic model**
A structure that is flat, uses cross-hierarchical and cross-functional teams, has low formalization, possesses a comprehensive information network, and relies on participative decision making.
With these two models in mind, we’re now prepared to address the question: Why are some organizations structured along more mechanistic lines while others follow organic characteristics? What are the forces that influence the design that is chosen? In the following pages, we present the major forces that have been identified as causes or determinants of an organization’s structure.25

**Strategy**

An organization’s structure is a means to help management achieve its objectives. Since objectives are derived from the organization’s overall strategy, it is only logical that strategy and structure should be closely linked. More specifically, structure should follow strategy. If management makes a significant change in its organization’s strategy, the structure will need to be modified to accommodate and support this change.26

Most current strategy frameworks focus on three strategy dimensions—innovation, cost minimization, and imitation—and the structural design that works best with each.27

To what degree does an organization introduce major new products or services? An **innovation strategy** does not mean a strategy merely for simple or cosmetic changes from previous offerings but rather one for meaningful and unique innovations. Obviously, not all firms pursue innovation. This strategy may
The Mechanistic model

- High specialization
- Rigid departmentalization
- Clear chain of command
- Narrow spans of control
- Centralization
- High formalization

The Organic model

- Cross-functional teams
- Cross-hierarchical teams
- Free flow of information
- Wide spans of control
- Decentralization
- Low formalization
appropriately characterize 3M Co., but it certainly is not a strategy pursued by Reader’s Digest.

An organization that is pursuing a **cost-minimization strategy** tightly controls costs, refrains from incurring unnecessary innovation or marketing expenses, and cuts prices in selling a basic product. This would describe the strategy pursued by Wal-Mart or the sellers of generic grocery products.

Organizations following an **imitation strategy** try to capitalize on the best of both of the previous strategies. They seek to minimize risk and maximize opportunity for profit. Their strategy is to move into new products or new markets only after viability has been proven by innovators. They take the successful ideas of innovators and copy them. Manufacturers of mass-marketed fashion goods that are rip-offs of designer styles follow the imitation strategy. This label also probably characterizes such well-known firms as IBM and Caterpillar. They essentially follow their smaller and more innovative competitors with superior products, but only after their competitors have demonstrated that the market is there.

Exhibit 13-9 describes the structural option that best matches each strategy. Innovators need the flexibility of the organic structure, while cost minimizers seek the efficiency and stability of the mechanistic structure. Imitators combine the two structures. They use a mechanistic structure in order to maintain tight controls and

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**cost-minimization strategy**
A strategy that emphasizes tight cost controls, avoidance of unnecessary innovation or marketing expenses, and price cutting.

**imitation strategy**
A strategy that seeks to move into new products or new markets only after their viability has already been proven.
low costs in their current activities, while at the same time they create organic subunits in which to pursue new undertakings.

**Organization Size**

A quick glance at the organizations we deal with regularly in our lives would lead most of us to conclude that size would have some bearing on an organization’s structure. The more than 800,000 employees of the United States Postal Service, for example, do not neatly fit into one building, or into several departments supervised by a couple of managers. It’s pretty hard to envision 800,000 peo-

### Exhibit 13-9 The Strategy–Structure Thesis

<table>
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<tr>
<th>Strategy</th>
<th>Structural Option</th>
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<tr>
<td>Innovation</td>
<td><strong>Organic:</strong> A loose structure; low specialization, low formalization, decentralized</td>
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<td>Cost minimization</td>
<td><strong>Mechanistic:</strong> Tight control; extensive work specialization, high formalization, high centralization</td>
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<tr>
<td>Imitation</td>
<td><strong>Mechanistic and organic:</strong> Mix of loose with tight properties; tight controls over current activities and looser controls for new undertakings</td>
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ple being organized in any manner other than one that contains a great deal of specialization, departmentalization, uses a large number of procedures and regulations to ensure uniform practices, and follows a high degree of decentralized decision making. On the other hand, a local messenger service that employs ten people and generates less than $300,000, a year in service fees is not likely to need decentralized decision making or formalized procedures and regulations.

There is considerable evidence to support that an organization’s size significantly affects its structure. For instance, large organizations—those typically employing 2,000 or more people—tend to have more specialization, more departmentalization, more vertical levels, and more rules and regulations than do small organizations. However, the relationship isn’t linear. Rather, size affects structure at a decreasing rate. The impact of size becomes less important as an organization expands. Why is this? Essentially, once an organization has around 2,000 employees, it’s already fairly mechanistic. An additional 500 employees will not have much impact. On the other hand, adding 500 employees to an organization that has only 300 members is likely to result in a shift toward a more mechanistic structure.
Technology

The term **technology** refers to how an organization transfers its inputs into outputs. Every organization has at least one technology for converting financial, human, and physical resources into products or services. The Ford Motor Co., for instance, predominantly uses an assembly-line process to make its products. On the other hand, colleges may use a number of instruction technologies — the ever-popular formal lecture method, the case analysis method, the experiential exercise method, the programmed learning method, and so forth. In this section we want to show that organizational structures adapt to their technology.

Numerous studies have been carried out on the technology–structure relationship. The details of those studies are quite complex, so we’ll go straight to “the bottom line” and attempt to summarize what we know.

The common theme that differentiates technologies is their degree of routineness. By this we mean that technologies tend toward either routine or nonroutine activities. The former are characterized by automated and standardized operations. Nonroutine activities are customized. They include such varied operations as furniture restoring, custom shoemaking, and genetic research.

What relationships have been found between technology and structure? Although the relationship is not over-
whelmingly strong, we find that routine tasks are associated with taller and more departmentalized structures. The relationship between technology and formalization, however, is stronger. Studies consistently show routineness to be associated with the presence of rule manuals, job descriptions, and other formalized documentation. Finally, there has been found to be an interesting relationship between technology and centralization. It seems logical that routine technologies would be associated with a centralized structure, whereas nonroutine technologies, which rely more heavily on the knowledge of specialists, would be characterized by delegated decision authority. This position has met with some support. However, a more generalizable conclusion is that the technology–centralization relationship is moderated by the degree of formalization. Formal regulations and centralized decision making are both control mechanisms and management can substitute one for the other. Routine technologies should be associated with centralized control if there is a minimum of rules and regulations. However, if formalization is high, routine technology can be accompanied by decentralization. So, we would predict that routine technology would lead to centralization, but only if formalization is low.
Environment

An organization’s environment is composed of those institutions or forces that are outside the organization and potentially affect the organization’s performance. These typically include suppliers, customers, competitors, government regulatory agencies, public pressure groups, and the like.

Why should an organization’s structure be affected by its environment? Because of environmental uncertainty. Some organizations face relatively static environments—few forces in their environment are changing. There are, for example, no new competitors, no new technological breakthroughs by current competitors, or little activity by public pressure groups to influence the organization. Other organizations face very dynamic environments—rapidly changing government regulations affecting their business, new competitors, difficulties in acquiring raw materials, continually changing product preferences by customers, and so on. Static environments create significantly less uncertainty for managers than do dynamic ones. And since uncertainty is a threat to an organization’s effectiveness, management will try to minimize it. One way to reduce environmental uncertainty is through adjustments in the organization’s structure.30

Recent research has helped clarify what is meant by environmental uncertainty. It’s been found that there are three key dimen-
sions to any organization’s environment. They are labeled capacity, volatility, and complexity.\textsuperscript{31}

The \textit{capacity} of an environment refers to the degree to which it can support growth. Rich and growing environments generate excess resources, which can buffer the organization in times of relative scarcity. Abundant capacity, for example, leaves room for an organization to make mistakes, while scarce capacity does not. In 1997, firms operating in the multimedia software business had relatively abundant environments, whereas those in the full-service brokerage business faced relative scarcity.

The degree of instability in an environment is captured in the \textit{volatility} dimension. Where there is a high degree of unpredictable change, the environment is dynamic. This makes it difficult for management to predict accurately the probabilities associated with various decision alternatives. At the other extreme is a stable environment. The accelerated changes in Eastern Europe and the demise of the Cold War had dramatic effects on the U.S. defense industry in the early 1990s. This moved the environment of major defense contractors like McDonnell Douglas, Lockheed Martin, General Dynamics, and Northrop from relatively stable to dynamic.

Finally, the environment needs to be assessed in terms of \textit{complexity}, that is, the degree of heterogeneity and concentration among environmental elements. Simple environments are homogeneous and concentrated. This might describe the tobacco indus-
try, since there are relatively few players. Its easy for firms in this industry to keep a close eye on the competition. In contrast, environments characterized by heterogeneity and dispersion are called complex. This is essentially the current environment for firms competing in the internet-connection business. Every day there seems to be another “new kid on the block” with whom current internet access providers have to deal.

Exhibit 13-10 summarizes our definition of the environment along its three dimensions. The arrows in this figure are meant to indicate movement toward higher uncertainty. So organizations that operate in environments characterized as scarce, dynamic, and complex face the greatest degree of uncertainty. Why? Because they have little room for error, high unpredictability, and a diverse set of elements in the environment to constantly monitor.

Given this three-dimensional definition of environment, we can offer some general conclusions. There is evidence that relates the degrees of environmental uncertainty to different structural arrangements. Specifically, the more scarce, dynamic, and complex the environment, the more organic a structure should be. The more abundant, stable, and simple the environment, the more the mechanistic structure will be preferred.
Summary

We’ve shown that four variables—strategy, size, technology, and environment—are the primary forces that determine whether an organization is mechanistic or organic. Now let’s use our previous analysis to explain the evolution of structural designs throughout this century.
The industrial revolution encouraged economies of scale and the rise of the modern, large corporation. As companies grew from their original simple structures, they took on mechanistic characteristics and became bureaucracies. The rise of bureaucracy to become the dominant structure in industrialized nations from the 1920s through the 1970s can be largely explained by three facts. First, the environment was relatively stable and certain over this period. The monopoly power of the large corporations, coupled with little international competition, kept environmental uncertainty to a minimum. Second, economies of scale and minimal competition allowed these corporations to introduce highly routine technologies. And third, most of these large corporations chose to pursue cost minimization or imitation strategies—leaving innovation to the little guys. Combine these strategies with large size, routine technologies, and relatively abundant, stable, and simple environments, and you have a reasonably clear explanation for the rise and domination of the bureaucracy.

Things began to change in the 1970s, when the environment became significantly more uncertain. Oil prices quadrupled literally overnight in 1973. Inflation exploded into double digits in 1978 and 1979. Advances in computer technology—especially the availability of increasingly powerful systems at dramatically falling prices—began to lessen the advantage that accrued to large size. And, of course, competition moved to the global arena. To compete
effectively, top management responded by restructuring their organizations. Some went to the matrix to give their companies increased flexibility. Some added team structures so they could respond more rapidly to change. Today, senior managers in most large corporations are debureaucratizing their organizations—making them more organic by reducing staff, cutting vertical levels, decentralizing authority, and the like—primarily because the environment continues to be uncertain. Managers realize that in a dynamic and changing environment, inflexible organizations end up as bankruptcy statistics.

Organizational Designs and Employee Behavior

We opened this chapter by implying that an organization’s structure can have significant effects on its members. In this section, we want to directly assess just what those effects might be.

A review of the evidence linking organizational structures to employee performance and satisfaction leads to a pretty clear conclusion—you can’t generalize! Not everyone prefers the freedom and flexibility of organic structures. Some people are most productive and satisfied when work tasks are standardized and ambiguity is minimized—that is, in mechanistic structures. So any discussion of the effect of organizational design on employee behavior has to
address individual differences. To illustrate this point, let’s consider employee preferences for work specialization, span of control, and centralization.\textsuperscript{32}

The evidence generally indicates that work specialization contributes to higher employee productivity but at the price of reduced job satisfaction. However, this statement ignores individual differences and the type of job tasks people do.

As we noted previously, work specialization is not an unending source of higher productivity. Problems start to surface, and productivity begins to suffer, when the human diseconomies of doing repetitive and narrow tasks overtake the economies of specialization. As the work force has become more highly educated and desirous of jobs that are intrinsically rewarding, the point where productivity begins to decline seems to be reached more quickly than in decades past.

While more people today are undoubtedly turned off by overly specialized jobs than were their parents or grandparents, it would be naive to ignore the reality that there is still a segment of the work force that prefers the routine and repetitiveness of highly specialized jobs. Some individuals want work that makes minimal intellectual demands and provides the security of routine. For these people, high work specialization is a source of job satisfaction. The empirical question, of course, is whether this represents 2 percent of the work force or 52 percent. Given that there is some self-selec-
tion operating in the choice of careers, we might conclude that negative behavioral outcomes from high specialization are most likely to surface in professional jobs occupied by individuals with high needs for personal growth and diversity.

A review of the research indicates that it is probably safe to say there is no evidence to support a relationship between *span of control* and employee performance. While it is intuitively attractive to argue that large spans might lead to higher employee performance because they provide more distant supervision and more opportunity for personal initiative, the research fails to support this notion. At this point it is impossible to state that any particular span of control is best for producing high performance or high satisfaction among subordinates. The reason is, again, probably individual differences. That is, some people like to be left alone, while others prefer the security of a boss who is quickly available at all times. Consistent with several of the contingency theories of leadership discussed in Chapter 10, we would expect factors such as employees’ experiences and abilities and the degree of structure in their tasks to explain when wide or narrow spans of control are likely to contribute to their performance and job satisfaction. However, there is some evidence indicating that a manager’s job satisfaction increases as the number of subordinates he or she supervises increases.

We find fairly strong evidence linking *centralization* and job satisfaction. In general, organizations that are less centralized have a
greater amount of participative decision making. And the evidence suggests that participative decision making is positively related to job satisfaction. But, again, individual differences surface. The decentralization–satisfaction relationship is strongest with employees who have low self-esteem. Because individuals with low self-esteem have less confidence in their abilities, they place a higher value on shared decision making, which means that they’re not held solely responsible for decision outcomes.

Our conclusion: To maximize employee performance and satisfaction, individual differences, such as experience, personality, and the work task, should be taken into account. For simplicity’s sake, it might help to keep in mind that individuals with a high degree of bureaucratic orientation (see Learning About Yourself Exercise at the end of this chapter) tend to place a heavy reliance on higher authority, prefer formalized and specific rules, and prefer formal relationships with others on the job. These people seem better suited to mechanistic structures. Those individuals with a low degree of bureaucratic orientation would probably fit better in organic structures. Additionally, cultural background influences preference for structure. Organizations operating with people from high power distance cultures, such as found in Greece, France, and most of Latin America, will find employees much more accepting of mechanistic structures than where employees come from low power distance countries. So you need to consider cultural differ-
ences along with individual differences when making predictions on how structure will effect employee performance and satisfaction.

Summary and Implications for Managers

The theme of this chapter has been that an organization’s internal structure contributes to explaining and predicting behavior. That is, in addition to individual and group factors, the structural relationships in which people work have an important bearing on employee attitudes and behavior.

What's the basis for the argument that structure has an impact on both attitudes and behavior? To the degree that an organization’s structure reduces ambiguity for employees and clarifies such concerns as “What am I supposed to do?” “How am I supposed to do it?” “To whom do I report?” and “To whom do I go if I have a problem?” it shapes their attitudes and facilitates and motivates them to higher levels of performance.

Of course, structure also constrains employees to the extent that it limits and controls what they do. For example, organizations structured around high levels of formalization and specialization, strict adherence to the chain of command, limited delegation of authority, and narrow spans of control give employees little autonomy. Controls in such organizations are tight and behavior will tend to vary within a narrow range. In contrast, organizations that
are structured around limited specialization, low formalization, wide spans of control, and the like provide employees greater freedom and, thus, will be characterized by greater behavioral diversity.

Exhibit 13-11 visually summarizes what we’ve discussed in this chapter. Strategy, size, technology, and environment determine the type of structure an organization will have. For simplicity’s sake, we

**Exhibit 13-11**

**Organization Structure: Its Determinants and Outcomes**

<table>
<thead>
<tr>
<th>Causes</th>
<th>Structural designs</th>
<th>Performance and satisfaction</th>
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<tbody>
<tr>
<td>• Strategy</td>
<td>• Mechanistic</td>
<td>Moderated by individual differences and cultural norms</td>
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<tr>
<td>• Size</td>
<td>• Organic</td>
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<td>• Technology</td>
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<td>• Environment</td>
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determines

leads to
can classify structural designs around one of two models: mechanistic or organic. The specific effect of structural designs on performance and satisfaction is moderated by employees’ individual preferences and cultural norms.

One last point: Managers need to be reminded that structural variables like work specialization, span of control, formalization, and centralization are objective characteristics that can be measured by organizational researchers. The findings and conclusions we’ve offered in this chapter, in fact, are directly a result of the work of these researchers. But employees don’t objectively measure these structural characteristics! They observe things around them in an unscientific fashion and then form their own implicit models of what the organization’s structure is like. How many people did they have to interview with before they were offered their jobs? How many people work in their departments and buildings? Is there an organization policy manual? If so, is it readily available and do people follow it closely? How is the organization and its top management described in newspapers and periodicals? Answers to questions such as these, when combined with an employee’s past experiences and comments made by peers, lead members to form an overall subjective image of what their organization’s structure is like. This image, though, may in no way resemble the organization’s actual objective structural characteristics.
The importance of these **implicit models of organizational structure** should not be overlooked. As we noted in Chapter 3, people respond to their perceptions rather than objective reality. The research, for instance, on the relationship between many structural variables and subsequent levels of performance or job satisfaction is far from consistent. We explained some of this as being attributable to individual differences. However, an additional contributing cause to these inconsistent findings might be diverse perceptions of the objective characteristics. Researchers typically focus on actual levels of the various structural components, but these may be irrelevant if people interpret similar components differently. The bottom line, therefore, is to understand how employees interpret their organization’s structure. That should prove a more meaningful predictor of their behavior than the objective characteristics themselves.

**For Review**

1. Why isn’t work specialization an unending source of increased productivity?
2. All things being equal, which is more efficient, a wide or narrow span of control? Why?
3. In what ways can management departmentalize?
4. What is a matrix structure? When would management use it?
5. Contrast the network organization with the boundaryless organization.

7. Summarize the size–structure relationship.

8. Define and give an example of what is meant by the term *technology*.


10. Explain the importance of the statement: “Employees form implicit models of organizational structure.”

**For Discussion**

1. How is the typical large corporation of today organized in contrast to how that same organization was probably organized in the 1960s?

2. Do you think most employees prefer high formalization? Support your position.

3. If you were an employee in a matrix structure, what pluses do you think the structure would provide? What about minuses?

4. What could management do to make a bureaucracy more like a boundaryless organization?

5. What behavioral predictions would you make about people who worked in a “pure” boundaryless organization (if such a structure were ever to exist)?
Small Is Beautiful

The Davids are beating up on the Goliaths. Big corporations are going the way of the dinosaurs because they’re overly rigid, technologically obsolete, and too bureaucratic. They’re being replaced by small, agile companies. These small organizations are the technology innovators, able to respond quickly to changing market opportunities, and have become the primary job generators in almost all developed countries.

In almost every major industry, the smaller and more agile firms are outperforming their larger competitors. In the airline industry, upstart Southwest Air continually outperforms the likes of American and United. The Fox Network has taken on ABC, CBS, and NBC with impressive results. In steel, small mini-mill operators like Nucor have proven to be far more efficient and responsive to change than big producers like U.S. Steel. And in the computer industry, giants like Digital and Apple are fighting for their lives against hundreds of small, entrepreneurial firms.

What’s going on? The law of economies of scale is being repealed! The law of economies of scale argued that larger operations drove out smaller ones because, with large size, came greater efficiency. Fixed costs, for instance, could be spread over more units. Large companies could use standardization and mass production to produce the lowest-cost products. But that no longer applies because of market fragmentation, strategic alliances, and technology.

Niche markets have taken away the advantages of large size. Southwest can compete successfully against American and United because it doesn’t try to match the big guys’ full-service strategy. It doesn’t use hubs, it doesn’t transfer baggage, it doesn’t compete in every market, it doesn’t offer meals, and it provides no reserved seats.

Strategic alliances offer small firms the opportunity to share others’ expertise and development costs, allowing little companies to compete with big ones. For example, many small North American book publishers don’t have the money to develop marketing operations and sales staffs in Australia or Asia. By joining forces with publishers in those countries to market their books, they can behave like the big guys.
Technology is also taking away a lot of the advantage that used to go to size. Computer and satellite linkage and flexible manufacturing systems are examples of such technology. Quick & Reilly can execute orders as efficiently as Merrill Lynch through computer links to exchanges, even though it’s a fraction of Merrill’s size.

In today’s increasingly dynamic environment, large size has become a serious handicap. It restricts the creativity to develop new products and services. It also limits job growth. More specifically, it’s the small organizations that innovate and create jobs. For instance, the U.S. Bureau of the Census claims that the smallest firms—those with four or fewer employees—created virtually all the net new jobs in the United States between 1989 and 1991. These very small firms created 2.6 million net new jobs. In contrast, companies with 500 or more employees created only 122,000. All other business-size classes lost jobs.

Big companies are getting the message. They’re laying off tens of thousands of employees. They’re selling businesses that don’t fit with their core competencies. And they’re restructuring themselves to be more agile and responsive.

“Small Is Beautiful” Is a Myth!

It’s now become the “conventional wisdom” to acknowledge that large organizations are at a disadvantage in today’s dynamic environment. Their large size limits their agility. Additionally, competitive and technological forces have ganged up to take away the economies that derived from scale. Well, the conventional wisdom is wrong! The hard evidence shows that the importance of small businesses as job generators and as engines of technological dynamism has been greatly exaggerated. Moreover, large organizations have discovered how to become less rigid, more entrepreneurial, and less hierarchical while still maintaining the advantages that accrue to large size.

First, the research showing that small companies have been the prime job generators in recent years is flawed. The early data that were used exaggerated the incidence of startups and covered too short a period. It failed to recategorize companies once they grew or shrunk, which systematically inflated the relative importance of small firms. And the Bureau of the Census study classified all firms formed after 1989 in the 0-to-4-employee class, regardless of how many employees a firm had in 1991. Using the more common definition of small companies as those with fewer than 100 employees, the evidence indicates that the share of jobs held by small companies has remained virtually unchanged since the 1960s. The vast majority of job creation over time is contributed by a tiny fraction of new firms. Among the 245,000 U.S. businesses begun in 1985, 75 percent of the employment gains three years later were made by 735 companies (or .003 percent) of the group. And all of those 735 companies had more than 100 employees to begin with. This same pattern—new firms that are successful start out big—holds in the United Kingdom.

People like to cite computers as a high-tech industry dominated by innovative small firms. It isn’t true. Only 5 percent of U.S. computer-related companies employ 500 workers or more (which includes companies like Intel and Microsoft), yet this 5 percent account for more than 90 percent
of both jobs and sales in the industry. Incidentally, in Japan, computers have always been dominated by giants such as NEC, Toshiba, and Fujitsu.

It’s true that the typical organization is getting smaller. The average American business establishment has shrunk dramatically during the last quarter-century—from 1,100 employees in 1967 to 630 in 1992. But what these number don’t reveal is that these smaller establishments are increasingly part of a large, multilocation firm with the financial and technological resources to compete in a global marketplace. In other words, these smaller organizations are de facto part of the large enterprise. And this practice is going on throughout the world. For example, a study found that the 32 largest German manufacturing companies had in excess of a thousand legally independent subsidiaries and the number grew by almost 50 percent between 1971 and 1983.

Second, technology favors the big guys. Studies demonstrate that small firms turn out to be systematically backward when it comes to technology. For example, on every continent, the big companies are far more likely than the small ones to invest in computer-controlled factory automation.

Third, everyone agrees with the fact that large organizations are improving their flexibility by increasing their use of strategic alliances, interorganizational networks, and similar devices. For instance, Siemens, the huge German multinational, has strategic alliances with Fujitsu to make robotics, GTE in telecommunications, Philips to produce semiconductors, and with Microsoft to develop software. This worldwide trend, coupled with efforts to widen spans of control, decentralize decision making, cut vertical levels, and sell off or close operations that don’t fit with the organization’s primary purpose have made large firms increasingly agile and responsive.

**Bureaucratic Orientation Test**

*Instructions*: For each statement, check the response (either mostly agree or mostly disagree) that best represents your feelings.

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<tr>
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<th>Mostly Agree</th>
<th>Mostly Disagree</th>
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<tr>
<td>1. I value stability in my job.</td>
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<td>2. I like a predictable organization.</td>
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<td>3. The best job for me would be one in which the future is uncertain.</td>
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<td>4. The federal government would be a nice place to work.</td>
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<td>5. Rules, policies, and procedures tend to frustrate me.</td>
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<td>6. I would enjoy working for a company that employed 85,000 people worldwide.</td>
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<td>7. Being self-employed would involve more risk than I’m willing to take.</td>
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<td>8. Before accepting a job, I would like to see an exact job description.</td>
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9. I would prefer a job as a freelance house painter to one as a clerk for the Department of Motor Vehicles.  

10. Seniority should be as important as performance in determining pay increases and promotion.  

11. It would give me a feeling of pride to work for the largest and most successful company in its field.  

12. Given a choice, I would prefer to make $50,000 per year as a vice president in a small company to $60,000 as a staff specialist in a large company.  

13. I would regard wearing an employee badge with a number on it as a degrading experience.  

14. Parking spaces in a company lot should be assigned on the basis of job level.  

15. If an accountant works for a large organization, he or she cannot be a true professional.
16. Before accepting a job (given a choice), I would want to make sure that the company had a very fine program of employee benefits.  

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<th>Mostly Agree</th>
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17. A company will probably not be successful unless it establishes a clear set of rules and procedures.  

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<th>Mostly Agree</th>
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18. Regular working hours and vacations are more important to me than finding thrills on the job.  

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<th>Mostly Agree</th>
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19. You should respect people according to their rank.  

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20. Rules are meant to be broken.  

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<th>Mostly Agree</th>
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Turn to page 1484 for scoring directions and key.

**Authority Figures**

**Purpose:** To learn about one’s experiences with and feelings about authority.

**Time:** Approximately 75 minutes.

**Procedure:**

1. Your instructor will separate class members into groups based on their birth order. Groups are formed consisting of “only children,” “eldest,” “middle,” and “youngest,” according to placement in families. Larger groups will be broken into smaller ones, with four or five members, to allow for freer conversation.

2. Each group member should talk about how he or she “typically reacts to the authority of others.” Focus should be on specific situations that offer general information about how individuals deal with authority figures (for example, bosses, teachers, parents, or coaches). The group has 25 minutes to develop a written list of how the group generally deals with others’ authority. Be sure to separate tendencies that group members share and those they do not.

3. Repeat Step 2 except this time discuss how group members “typically are as authority figures.” Again make a list of shared characteristics.

4. Each group will share its general conclusions with the entire class.
5. Class discussion will focus on questions such as:
   a. What patterned differences have surfaced between the groups?
   b. What may account for these differences?
   c. What hypotheses might explain the connection between how individuals react to the authority of others and how they are as authority figures?


**Ethical Dilemma Exercise**

**Employee Monitoring: How Far Is Too Far?**

When does management’s effort to control the actions of others become an invasion of privacy? Consider three cases.  

Employees at General Electric’s answering center handle telephone inquiries from customers all day long. Those conversations are taped by GE and occasionally reviewed by its management.

The Internal Revenue Service’s internal audit group monitors a computer log that shows employee access to taxpayers’ accounts. This monitoring activity allows management to check and see what employees are doing on their computers.
The mayor of Colorado Springs, Colorado, reads the electronic mail messages that city council members send to each other from their homes.

Are any of these cases—monitoring calls, computer activities, or e-mail—an invasion of privacy? When does management overstep the bounds of decency and privacy by silently (even covertly) scrutinizing the behavior of its employees or associates?

Managers at GE and the IRS defend their practice in terms of ensuring quality, productivity, and proper employee behavior. GE can point to U.S. government statistics estimating that 10 million workers are being electronically monitored on their jobs. And silent surveillance of telephone calls can be used to help employees do their jobs better. One IRS audit of its Southeastern regional offices found that 166 employees took unauthorized looks at the tax returns of friends, neighbors, or celebrities. The mayor of Colorado Springs defended his actions by saying he was making sure that e-mail was not being used to circumvent his state’s “open meeting” law that requires most council business to be conducted publicly.

When does management’s need for information about employee performance cross over the line and interfere with a worker’s right to privacy? For example, must employees be notified ahead of time that they will be monitored? Does management’s right to protect its interests extend to electronic monitoring of every place a worker might be—bathrooms, locker rooms, and dressing rooms?
If you ask Benny Karl-Erik Olsson where he is from today, he’ll tell you Mexico. But nine months ago he was Venezuelan. Before that he was from Madrid, and before that, the 44-year-old executive was from Barcelona. In actuality, Olsson is of Swedish descent but born in South Africa.

Olsson’s multiple ancestry is merely the result of having spent 20 years with Zurich-based ABB Asea Brown Boveri AG. Currently he’s ABB’s country manager in Mexico, one of 500 corporate missionaries that the worldwide builder of power plants, industrial factories, and infrastructure projects believes are essential to its survival against the likes of Siemens, General Electric, and Alcatel-Alsthom. These people—always multilingual—relocate from operation to operation, moving among the company’s 5,000 profit centers in 140 countries. Their job? To cut costs, improve efficiency, and get local businesses in line with the ABB world view.

Few organizations have been as successful as ABB in creating a class of managers that gets global strategies to work with local operations. “Our strength comes from pulling together,” says Percy Barnevik, the company’s chairman and the person who masterminded the 1988 merger of a Swedish and Swiss firm that created ABB. He says, “if you can make this work real well, then you get a competitive edge out of the organization which is very, very difficult to copy.”
Barnevik is trying to create a company with no geographic base—one that has many “home” markets and that can draw on expertise from around the globe. To glue the company together, he has created a set of managers like Olsson who can adapt to local cultures while executing ABB’s global strategies.

Olsson’s experience in Mexico illustrates some of the difficulties in trying to execute this unusual structural arrangement. ABB requires local business units, such as Mexico’s motor factory, to report to Olsson and to a business area manager who sets motor strategy for ABB worldwide. The goals of the local factory can clash with worldwide priorities. It is up to managers like Olsson to sort out constant conflicts.

Olsson says his predecessor in Mexico too often made decisions that favored Mexican operations at the expense of ABB’s worldwide businesses. For example, he had solicited bids from more than one ABB factory making equipment for power generators. That violated ABB’s “allocation” rules, which dictate which ABB factories can supply other operations with components. Olsson’s goal is to better balance the needs of the Mexican operations with needs of the overall corporation.

Questions

1. How would you classify the ABB structure? Defend your choice.
2. What are the advantages to this structure?
3. What are its disadvantages?
4. What kind of skills, abilities, and characteristics do you think are required to successfully do the type of job Olsson has?

This case is based on J. Guyon, “ABB Fuses Units with One Set of Values,” The Wall Street Journal, October 2, 1996, p. A12.

The Palm Beach School District

Is Monica Yulhorn, superintendent of the Palm Beach School District, just the scapegoat for problems in her organization? Or is she the incompetent manager of a bloated bureaucracy, as her critics claim? Most of the evidence suggests Ms. Yulhorn is inept.

Palm Beach is the sixteenth largest school district in the United States. The district is projecting a $6 million shortfall this year and student test scores are down. Yet the district spends more per student than the national average. Here’s a list of some of the criticism being directed at Ms. Yulhorn.

The district is wasting $100 million a year.

Yulhorn says she had to lay off 1,100 people because the district is short of funds. That’s true but then she added back that many plus 2,600 more, calling some of them teachers, even though their jobs weren’t in the classroom.
The district is paying more for supplies bought in bulk than could be obtained in retail stores.

Yulhorn is into dynasty building. Rather than using outside contractors to do work, she wants to hire more expensive and less qualified full-time people.

She wastes money on expensive consultants and travel for herself. For instance, in one five-month period, she hired 215 consultants and paid them $3.8 million. And a recent four-day convention in New Orleans cost the district $1,300.

Yulhorn isn’t on top of what’s happening in her district. Problems in communication occur between Yulhorn’s office, area superintendents, principals, and teachers.

Yulhorn dismisses the comments made by outsiders and people she has fired. She says they’re just angry and trying to further their self-interests. But the criticism is increasingly coming from within the school district. In a recent survey, 100 percent of the principals voted no confidence in Yulhorn; 98 percent of the assistant principals, 94 percent of the teachers, and even 84 percent of those on her own administrative staff voted no confidence.

Questions

1. What are the benefits of bureaucracy?
2. Would the employees in the Palm Beach School District be better off with less structure? Explain.

3. How does structure, in this case, shape the behavior of Yulhorn?