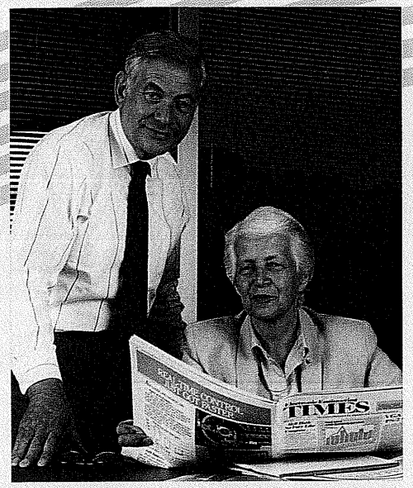


Gerry and Lilo Leeds found that their company, CMP Publications, had outgrown its highly centralized organization structure. They reorganized around semi-autonomous publishing groups.

The best laid plans often fail because managers don't have the right structure in place. And what's the *right* structure at one time may be inappropriate a year or two later. Gerry and Lilo Leeds, the husband and wife team that run CMP Publications, recognize these facts.[1]

The Leedses founded CMP in 1971. By 1987, their firm produced ten business newspapers and magazines that were leaders in their respective markets. Even more encouraging, their markets—computers, communications technology, business travel, and health care—provided plenty of opportunities for growth. But this growth potential might never have been realized had the Leedses continued using the organization structure they had in place.

The organization they had originally created for CMP centralized all key decision making in their hands. While this worked fine in the early years, by 1987 it was no longer effective. The Leedses became harder to see. People wanting to meet with Gerry, for instance, would begin lining up outside his office at eight in the morning. The answers to day-to-day questions were harder and harder for employees to get. And important decisions that required rapid responses were regularly delayed. CMP had grown too big for its original structure.

The Leedses recognized the problem and reorganized. First, they broke the company into manageable units—essentially creating semiautonomous companies within the company—and put a separate manager in charge of each. Then they gave each of these managers the authority to run and grow his or her own division. Second, the Leedses created a publications committee to oversee the various divisions. Each of the division managers sits on this committee, as do the Leedses. The division managers report to the publications committee, which in turn ensures that all the divisions operate within CMP's overall strategy.

These structural changes have proved effective. CMP now puts out a total of fourteen publications, sales are nearing $200 million a year, and revenue growth continues to reach management's goal of 30 percent annually.

The CMP Publications' example illustrates the importance that selecting the right structure plays in an organization's evolution. In this chapter, we'll present the foundations of organization structure. We'll define the concept and its key components, introduce basic organization design options, and consider contingency variables that determine when certain design options work better than others.

Defining Organization Structure and Design

organization structure
An organization's framework as expressed by its degree of complexity, formalization, and centralization.

complexity
The amount of differentiation in an organization.

formalization
The degree to which an organization relies on rules and procedures to direct the behavior of employees.

centralization
The concentration of decision-making authority in upper management.

decentralization
The handing down of decision-making authority to lower levels in an organization.

organization design
The construction or changing of an organization's structure.

Organization structure describes the organization's framework. Just as human beings have skeletons that define their shapes, organizations have structures that define theirs. An organization's structure can be dissected into three parts: complexity, formalization, and centralization.[2]

Complexity considers the amount of differentiation in an organization. The more division of labor there is in an organization, the more vertical levels in the hierarchy, and the more geographically dispersed the organization's units, the more difficult it is to coordinate people and their activities. Hence we use the term *complexity*.

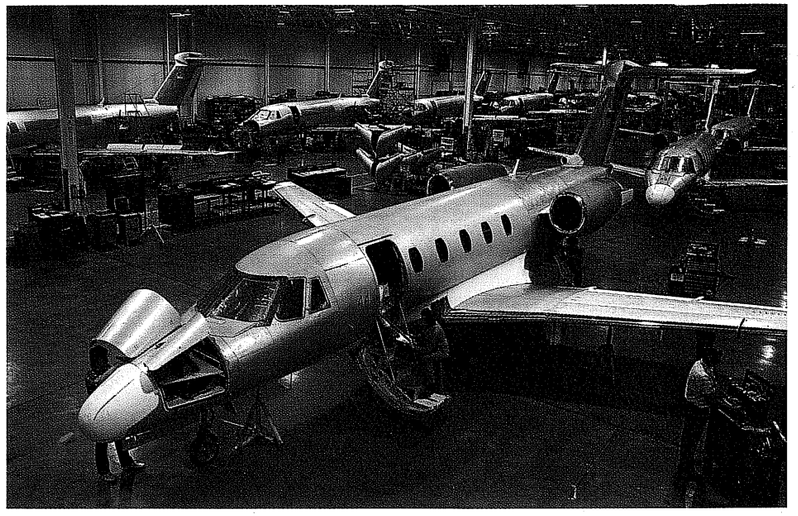
The degree to which an organization relies on rules and procedures to direct the behavior of employees is **formalization.** Some organizations operate with a minimum of such standardized guidelines, whereas others, some of them quite small, have all kinds of regulations instructing employees in what they can and cannot do. The more rules and regulations in an organization, the more formalized the organization's structure.

Centralization considers where the decision-making authority lies. In some organizations, decision making is highly centralized. Problems flow up to senior executives who choose the appropriate action. In other organizations, decision-making authority is passed down to lower levels. This is known as **decentralization.**

When managers construct or change an organization's structure, they are engaged in **organization design.** When we discuss managers making structural decisions—for example, determining the level at which decisions should be made or the number of standardized rules for employees to follow—we are referring to organization design. In the next chapter, we'll show how the three parts of organization structure can be mixed and matched to create various organization designs.

Basic Organization Design Concepts

The classical concepts of organization design were formulated by the general administrative theorists we discussed in Chapter 2. They offered a set of principles for managers to follow in organization design. More than sixty years have passed since most of these principles were originally proposed. Given the passing of that much time and all the changes that have taken place in our society, you might think that



Division of labor produces efficiencies. Could Cessna produce one Citation jet a year if one person had to build the entire plane? One's 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. It is easier and less costly to find and train workers to do specific and repetitive tasks, especially for highly sophisticated and complex operations.

these principles would be pretty worthless today. Surprisingly, they're not! For the most part, they still provide valuable insights into designing effective and efficient organizations. Of course, we have also gained a great deal of knowledge over the years as to the limitations of these principles.

In this section, we'll discuss the five basic classical principles that have guided organization design decisions over the years. We'll also present an updated analysis of how each has had to be modified to reflect the increasing sophistication and changing nature of organizational activities.

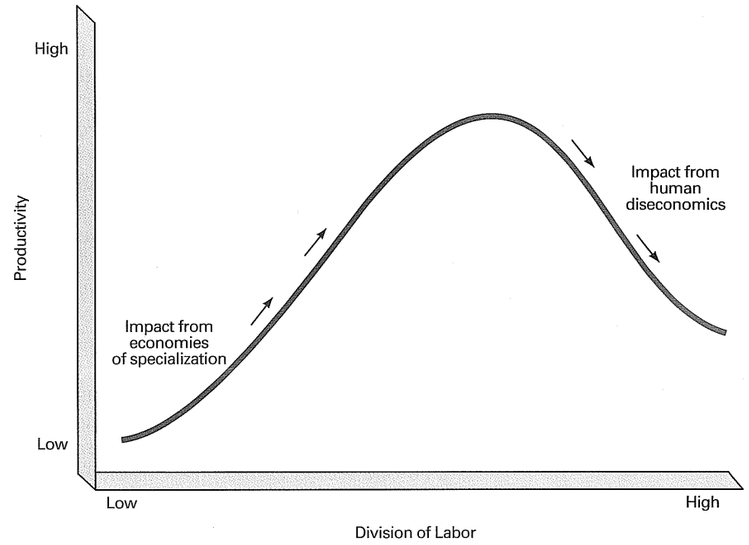
Division of Labor

The Classical View We mentioned division of labor in our discussion of Adam Smith and the evolution of management thought. Division of labor means 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. Assembly-line production, in which each worker does the same standardized task over and over again, is an example of division of labor.

Division of labor makes efficient use of the diversity of skills that workers hold. 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 manufacturing 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 highly skilled or highly sophisticated tasks, employees would be working below their skill level. Because skilled workers are paid more than unskilled workers and their wages tend to reflect their highest level of skill, it represents an inefficient usage of resources to pay highly skilled workers to do easy tasks.

The Contemporary View Classical writers viewed division of labor as an unending source of increased productivity. At the turn of the twentieth century and earlier, this generalization was undoubtedly accurate. Because specialization was not widely

FIGURE 10–1
Economies and Diseconomies of Division of Labor



practiced, its introduction almost always generated higher productivity. But a good thing can be carried too far. There is a point at which the human diseconomies from division of labor—which surface as boredom, fatigue, stress, low productivity, poor quality, increased absenteeism, and high turnover—exceed the economic advantages (see Figure 10–1).

By the 1960s, that point had been reached in a number of jobs. In such cases, productivity could be increased by enlarging, rather than narrowing, the scope of job activities.[3] For instance, in the next chapter, we'll discuss successful efforts to increase productivity by giving employees a variety of activities to do, allowing them to do a whole and complete piece of work, and putting them together into teams. Each of these ideas, of course, runs counter to the division of labor concept. Yet, overall, the division of labor concept is alive and well in most organizations today. We have to recognize the economies it provides in certain types of jobs, but we also have to recognize its limitations.

Unity of Command

unity of command
The principle that a subordinate should have one and only one superior to whom he or she is directly responsible.

The Classical View Classical writers professing the **unity of command** principle argued that a subordinate should have one and only one superior to whom he or she is directly responsible. No person should report to two or more bosses. Otherwise, a subordinate might have to cope with conflicting demands or priorities from several superiors. In those rare instances when the unity of command principle had to be violated, the classical viewpoint always explicitly designated that there be a clear separation of activities and a supervisor responsible for each.

The Contemporary View The unity of command concept was logical when organizations were comparatively simple. Under most circumstances it is still sound advice, and most organizations today closely adhere to this principle. Yet there are instances, which we'll introduce in the next chapter, when strict adherence to the unity of command creates a degree of inflexibility that hinders an organization's performance.[4]

Authority and Responsibility

authority
The rights inherent in a managerial position to give orders and expect them to be obeyed.

The Classical View **Authority** refers to the rights inherent in a managerial position to give orders and expect the orders to be obeyed. Authority was a major tenet of the classical writers; it was viewed as the glue that held the organization together. It was to be delegated downward to subordinate managers, giving them certain rights while providing certain prescribed limits within which to operate.

Each management position has specific inherent rights that incumbents acquire from the position's rank or title. Authority therefore relates to one's position within an organization and ignores the personal characteristics of the individual manager. It has nothing directly to do with the individual. The expression "The king is dead; long live the king" illustrates the concept. Whoever is king acquires the rights inherent in the king's position. When a position of authority is vacated, the person who has left the position no longer has any authority. The authority remains with the position and its new incumbent.

responsibility
An obligation to perform assigned activities.

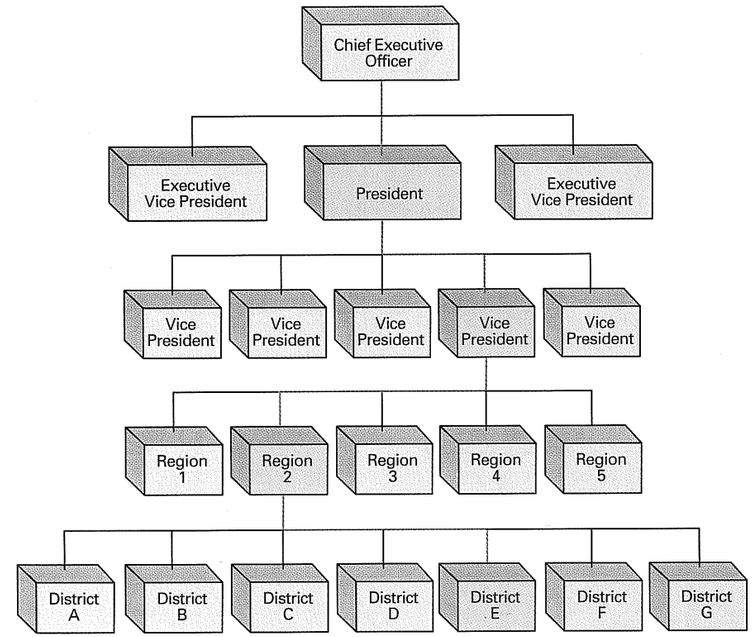
When we delegate authority, we must allocate commensurate **responsibility.** That is, when one is given "rights," one also assumes a corresponding "obligation" to perform. Allocating authority without responsibility creates opportunities for abuse, and no one should be held responsible for something over which he or she has no authority.

Classical writers recognized the importance of equating authority and responsibility. Additionally, they stated that responsibility cannot be delegated. They supported this contention by noting that the delegator was held responsible for the actions of his delegates. But how is it possible to equate authority and responsibility, if responsibility cannot be delegated?

The classicists' answer was to recognize two forms of responsibility: *operating* responsibility and *ultimate* responsibility. Managers pass on operating responsibility, which may then be passed on further. But there is an aspect of responsibility—its ultimate component—that must be retained. A manager is ultimately responsible for the actions of his or her subordinates to whom the operating responsibility has been

Johnson & Johnson takes decentralizing authority seriously. The presidents of its 166 separate companies are not only encouraged to act independently, they're expected to. Some presidents see their bosses at company headquarters only four times a year. Top management believes that creating smaller, self-governing units makes those units more manageable, quicker to react to their markets, and more accountable.

FIGURE 10–2
The Chain of Command



passed. Therefore managers should delegate operating responsibility equal to the delegated authority; however, ultimate responsibility can never be delegated.

line authority
The authority that entitles a manager to direct the work of a subordinate.

The classical writers also distinguished between two forms of authority relations: line authority and staff authority. **Line authority** is the authority that entitles a manager to direct the work of a subordinate. It is the superior–subordinate authority relationship that extends from the top of the organization to the lowest echelon, following what is called the **chain of command.** This is shown in Figure 10–2. As a link in the chain of command, a manager with line authority has the right to direct the work of subordinates and to make certain decisions without consulting others. Of course, in the chain of command, every manager is also subject to the direction of his or her superior.

chain of command
The flow of authority from the top to the bottom of an organization.

Sometimes the term *line* is used to differentiate *line* managers from *staff* managers. In this context, line emphasizes managers whose organizational function contributes directly to the achievement of organizational objectives. In a manufacturing firm, line managers are typically in the production and sales functions, whereas executives in personnel and accounting are considered staff managers. But whether a manager's function is classified as line or staff depends on the organization's objectives. For example, at Snelling and Snelling, a personnel placement organization, personnel interviewers have a line function. Similarly, at the accounting firm of Price Waterhouse, accounting is a line function.

The definitions given above are not contradictory but, rather, represent two ways of looking at the term *line*. Every manager has line authority over his or her subordinates, but not every manager is in a line function or position. This latter determination depends on whether or not a function directly contributes to the organization's objectives.

staff authority
Authority that supports, assists, and advises holders of line authority.

As organizations get larger and more complex, line managers find that they do not have the time, expertise, or resources to get their jobs done effectively. In response, they create **staff authority** functions to support, assist, advise, and generally reduce

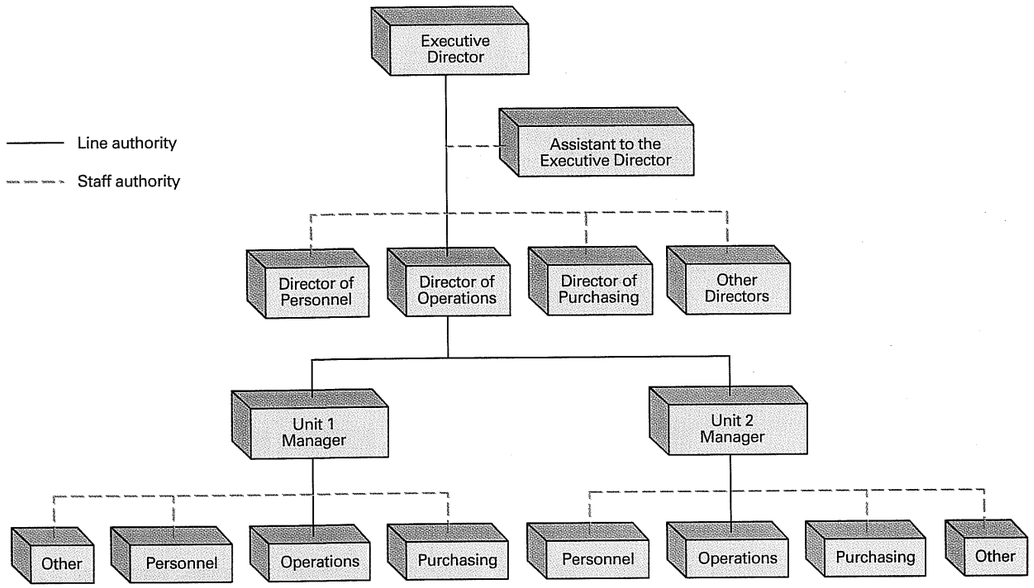


FIGURE 10–3
Line and Staff Authority

some of the informational burdens they have. The hospital administrator can't effectively handle all the purchasing of supplies that the hospital needs, so she creates a purchasing department. The purchasing department is a staff department. Of course, the head of the purchasing department has line authority over her subordinate purchasing agents. The hospital administrator might also find that she is overburdened and needs an assistant. In creating the position of assistant to the hospital administrator, she has created a staff position.

Figure 10–3 illustrates line and staff authority.

The Contemporary View The classical writers were enamored with authority. They actively assumed that the rights inherent in one's formal position in an organization were the sole source of influence. They believed that managers were all-powerful.

This might have been true sixty or more years ago. Organizations were simpler. Staff was less important. Managers were only minimally dependent on technical specialists. Under such conditions, influence is the same as authority; and the higher a manager's position in the organization, the more influence he or she had. However, those conditions no longer hold. Researchers and practitioners of management now recognize that you don't have to be a manager to have power, nor is power perfectly correlated to one's level in the organization. Authority is an important concept in organizations, but an exclusive focus on authority produces a narrow, unrealistic view of influence in organizations. Today, we recognize that authority is but one element in the larger concept of power.[5]

The terms *authority* and *power* are frequently confused. Authority is a right, the legitimacy of which is based on the authority figure's position in the organization. Authority goes with the job. **Power,** on the other hand, refers to an individual's capacity to influence decisions. Authority is part of the larger concept of power. That is, the formal rights that come with an individual's position in the organization are just one means by which an individual can affect the decision process.

power
The capacity to influence decisions.

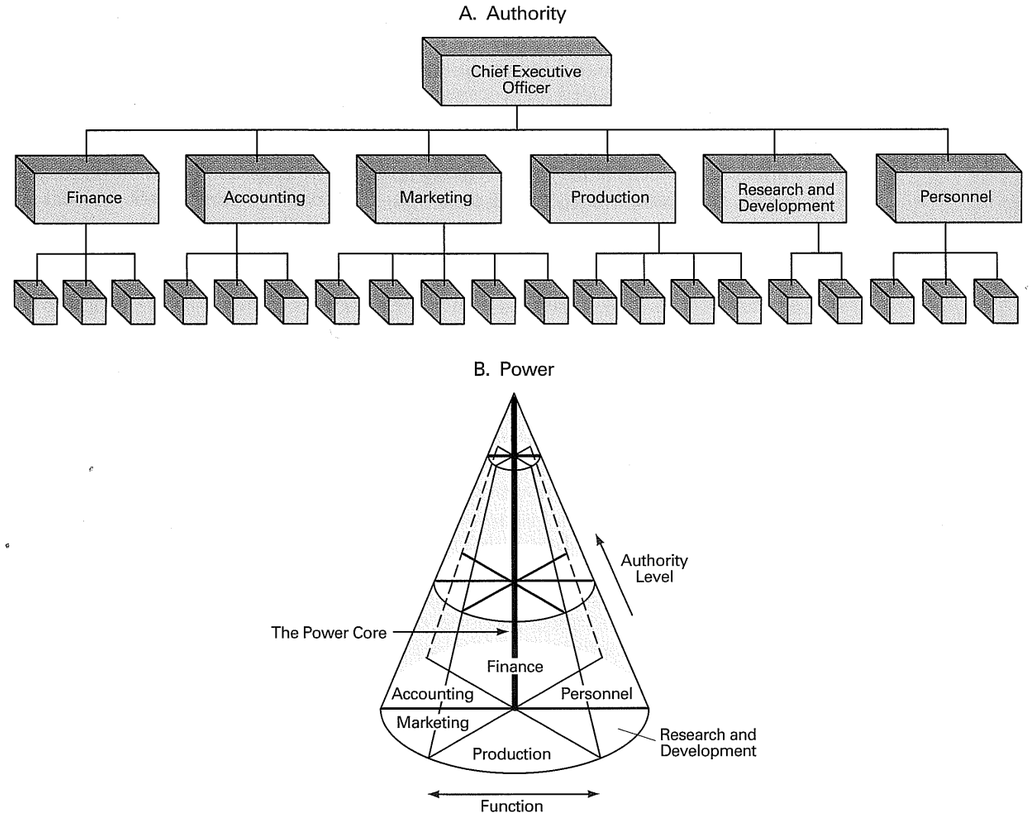


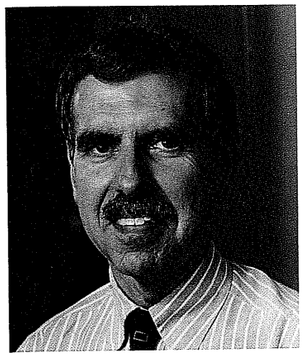
FIGURE 10–4
Authority Versus Power

Figure 10–4 visually depicts the difference between authority and power. The two-dimensional arrangement of boxes in part A portrays authority. The area in which the authority applies is defined by the horizontal dimension. Each horizontal grouping represents a functional area. The influence one holds in the organization is defined by the vertical dimension in the structure. The higher one is in the organization, the greater one's authority.

Power, on the other hand, is a three-dimensional concept (see the cone in part B of Figure 10–4). It includes not only the functional and hierarchical dimensions, but also a third dimension called *centrality.* While authority is defined by one's vertical position in the hierarchy, power is made up of both one's vertical position and one's distance from the organization's *power core,* or center.

Think of the cone in Figure 10–4 as being an organization. The center of the cone is the power core. The closer you are to the power core, the more influence you have on decisions. The existence of a power core is, in fact, the only difference between A and B in Figure 10–4. The vertical hierarchy dimension in A is merely one's level on the outer edge of the cone. The top of the cone corresponds to the top of the hierarchy, the middle of the cone to the middle of the hierarchy, and so on. Similarly, the functional groups in A become wedges in the cone. Each wedge represents a functional area.

The cone analogy explicitly acknowledges two facts: (1) the higher one moves in



A two-year power struggle at Time-Warner culminated in four days of maneuvering in February 1992. Gerald Levin (pictured), vice-chairman of T-W, used his close ties with the company's ailing CEO and intricate knowledge of the company's diverse businesses to oust Nicholas J. Nicholas, Jr., Time-Warner's president and contractually-defined CEO-designate. Attaining the support of the Board of Directors, Levin engineered Nicholas' "resignation" and his own appointment as president and new heir to the throne at Time-Warner.

an organization (an increase in authority), the closer one moves to the power core; and (2) it is not necessary to have authority in order to wield power because one can move horizontally inward toward the power core without moving up.

Have you ever noticed that secretaries of high-ranking executives usually have a great deal of power, even though they have little authority? As gatekeepers for their bosses, secretaries have considerable say over whom their bosses see and when. Furthermore, because they are regularly relied upon to pass information on to their bosses, they have some control over what their bosses hear. It's not unusual for $75,000-a-year middle managers to tread very carefully in order not to upset their boss's $25,000-a-year secretary. Why? Because the secretary has power! The secretary may be low in the authority hierarchy but close to the power core. Low-ranking employees who have relatives, friends, or associates in high places might also be close to the power core. So, too, are employees with scarce and important skills. The lowly production-engineer with twenty years of experience in a company might be the only one in the firm who knows the inner workings of all the old production machinery. When pieces of this old equipment break down, no one but this engineer understands how to fix them. Suddenly, the engineer's influence is much greater than it would appear from his level in the vertical hierarchy.

How does one acquire power? John French and Bertram Raven have identified five sources or bases of power: coercive, reward, legitimate, expert, and referent.[6]

coercive power
Power that is dependent on fear.

The **coercive power** base is defined by French and Raven as being dependent on fear. One reacts to this power out of fear of the negative results that might occur if one failed to comply. It rests on the application, or the threat of application, of physical sanctions such as the infliction of pain; the generation of frustration through restriction of movement; or the controlling by force of basic physiological or safety needs.

In the 1930s, when John Dillinger went into a bank, held a gun to a teller's head, and asked for money, he was incredibly successful at getting compliance with his request. His power base was coercive. A loaded gun gives its holder power because others are fearful that they will lose something that they hold dear: their lives.

If you are a manager, typically you have some coercive power. You may be able to suspend or demote employees. You may be able to assign them work activities they find unpleasant. You may even have the option of dismissing employees. These all represent coercive actions. But you don't have to be a manager to hold coercive power. For instance, a subordinate who is in a position to embarrass his or her boss in public and who successfully uses this power to gain advantage is using coercion.

reward power
Power based on the ability to distribute anything that others may value.

The opposite of coercive power is **reward power.** People comply with the wishes or directives of another because it produces positive benefits; therefore, one who can distribute rewards that others view as valuable will have power over them. These rewards can be anything that another person values. In an organizational context, we think of money, favorable performance appraisals, promotions, interesting work assignments, friendly colleagues, and preferred work shifts or sales territories.

Coercive and reward power are actually counterparts of each other. If you can remove something of positive value from another or inflict something of negative value upon him or her, you have coercive power over that person. If you can give someone something of positive value or remove something of negative value, you have reward power over that person. Again, as with coercive power, you don't need to be a manager to be able to exert influence through rewards. Rewards such as friendliness, acceptance, and praise are available to everyone in the organization. To the degree that an individual seeks such rewards, your ability to give or withhold them gives you power over that individual.

legitimate power
Power based on one's position in the formal hierarchy.

Legitimate power and authority are one and the same. Legitimate power represents the power a person receives as a result of his or her position in the formal hierarchy.

Positions of authority include coercive and reward powers. Legitimate power, however, is broader than the power to coerce and reward. Specifically, it includes acceptance by members of an organization of the authority of a position. When school principals, bank presidents, or army captains speak (assuming that their directives are viewed to be within the authority of their positions), teachers, tellers, and first lieutenants listen and usually comply.

expert power
Power based on one's expertise, special skill, or knowledge.

Expert power is influence wielded as a result of expertise, special skill, or knowledge. In recent years, as a result of the explosion in technical knowledge, expert power has become an increasingly potent power source in organizations. As jobs have become more specialized, management has increasingly become dependent on staff "experts" to achieve the organization's goals. As an employee increases his or her knowledge of information that is critical to the operation of a work group, and to the degree that that knowledge is not possessed by others, expert power is enhanced. To illustrate the point, if a computer system is critical to a unit's work, and if one employee, say Chris, knows how to repair it and no one else within 200 miles does, then the unit is dependent on Chris. If the system breaks down, Chris can use her expertise to obtain ends that she could never achieve by her position's authority alone. In such a situation, you should expect the unit's manager to try to have others trained in the workings of the computer system or to hire someone with this knowledge in order to reduce Chris's power. As others become capable of duplicating Chris's specialized activities, her expert power diminishes.

The last category of influence that French and Raven identified was **referent power.** Its base is identification with a person who has desirable resources or personal traits. If I admire and identify with you, you can exercise power over me because I want to please you.

referent power
Power based on identification with a person who has desirable resources or personal traits.

Referent power develops out of admiration of another and a desire to be like that person. You might consider the person you identify with as having *charisma.* If you admire someone to the point of modeling your behavior and attitudes after him or her, this person possesses referent power over you. Referent power explains why celebrities are paid millions of dollars to endorse products in commercials. Marketing research shows that people like Bill Cosby, Elizabeth Taylor, and Michael Jordan have the power to influence your choice of photo processors, perfume, and athletic shoes. With a little practice, you or I could probably deliver as smooth a sales pitch as these celebrities, but the buying public does not identify with you and me. In organizations, the charismatic individual—manager or otherwise—can influence superiors, peers, and subordinates.

Span of Control

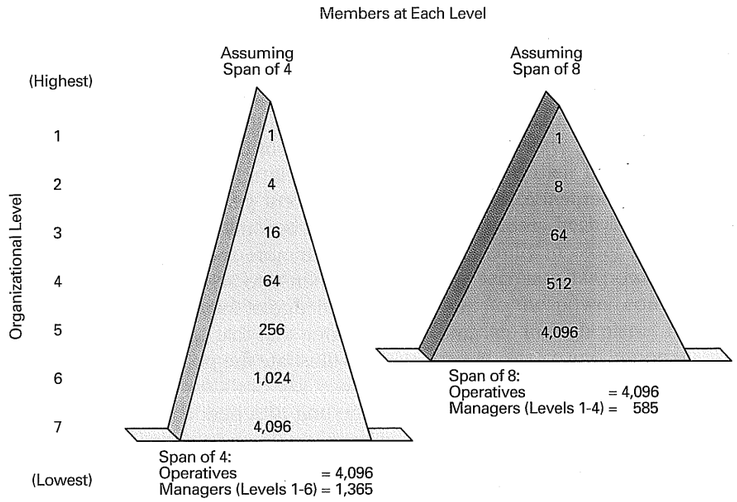
span of control
The number of subordinates a manager can direct efficiently and effectively.

The Classical View How many subordinates can a manager efficiently and effectively direct? This question of **span of control** received a great deal of attention from early writers. While there was no consensus on a specific number, the classical writers favored small spans—typically no more than six—in order to maintain close control.[7] However, several writers did acknowledge level in the organization as a contingency variable. They argued that as a manager rises in an organization, he or she has to deal with a greater number of ill-structured problems, so top executives need a smaller span than do middle managers, and middle managers require a smaller span than do supervisors.

Why is the span of control concept important? 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 design. An example can illustrate the validity of this statement.

Assume that we have two organizations, each of which has approximately 4,100 operative employees. As Figure 10–5 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 approx-

FIGURE 10–5
Contrasting Spans of Control



imately 800 fewer managers. If the average manager made $35,000 a year, the wider spans would save $28 million a year in management salaries! Obviously, wider spans are more *efficient* in terms of cost. But at some point, wider spans reduce *effectiveness*.

The Contemporary View In 1992, Wal-Mart surpassed Sears as the number one retailer in the United States. Management guru Tom Peters predicted this result a few years earlier: "Sears doesn't have a chance," he said. "A twelve-layer company can't compete with a three-layer company."[10] Peters might have exaggerated the point a bit, but it clearly reflects the fact that in recent years the pendulum has swung toward designing flat structures with wide spans of control.

More and more organizations are increasing their spans of control. For example, the span for managers at such companies as General Electric and Reynolds Metals has expanded to ten or twelve subordinates—twice the number of fifteen years ago.[11] The span of control is increasingly being determined by looking at contingency variables. For instance, it's obvious that the more training and experience subordinates have, the less direct supervision they need. Therefore managers who have well-trained and experienced employees can function with a wider span. Other contingency variables that will determine the appropriate span include similarity of subordinate tasks, the complexity of those tasks, the physical proximity of subordinates, the degree to which standardized procedures are in place, the sophistication of the organization's management information system, the strength of the organization's culture, and the preferred style of the manager.[12]

Departmentalization

The Classical View The classical writers argued that activities in the organization should be specialized and grouped into departments. Division of labor creates specialists who need coordination. This coordination is facilitated by putting specialists together in departments under the direction of a manager. Creation of these departments is typically based on the work functions being performed, the product or service being offered, the target customer or client, the geographic territory being covered, or the process being used to turn inputs into outputs. No single method of

ETHICAL DILEMMAS IN MANAGEMENT

Should You Follow Orders With Which You Don't Agree?

A few years back, a study of business executives revealed that most had obeyed orders that they had found personally objectionable or unethical.[8] Far more thought-provoking was a survey taken among the general public near the end of the Vietnam War. In spite of public dismay over the actions of some military personnel during that war, about half the respondents said that they would have shot civilian men, women, and children in cold blood if they had been ordered to do so by their commanding officer.[9]

If you were asked to follow orders that you believed were unconscionable, would you comply? For example, what if your boss asked you to destroy evidence that he or she had been stealing a great deal of money from the organization?

What if you merely disagreed with the orders? For instance, what if your boss asked you to bring him or her coffee each morning even though no such task is included in your job description? What would *you* do?

Chairman Paul H. O'Neill recently wiped out two layers of top management at Alcoa. He now has the twenty-five presidents of the company's different businesses report directly to him. By widening his *span of control,* O'Neill hopes to make Alcoa—especially its upper management—more responsive to change.

functional departmentalization
Grouping activities by functions performed.

product departmentalization
Grouping activities by product line.

customer departmentalization
Grouping activities on the basis of common customers.

departmentalization was advocated by the classical writers. The method or methods used should reflect the grouping that would best contribute to the attainment of the organization's objectives and the goals of individual units.

One of the most popular ways to group activities is by functions performed, or **functional departmentalization.** A manufacturing manager might organize his or her plant by separating engineering, accounting, manufacturing, personnel, and purchasing specialists into common departments. (See Figure 10–6.) Functional departmentalization can be used in all types of organizations. Only the functions change to reflect the organization'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.

Figure 10–7 illustrates the **product departmentalization** method used at Sun Petroleum Products. Each major product area in the corporation is placed under the authority of a vice president who is a specialist in, and is responsible for, everything having to do with his or her product line. Notice, for example, in contrast to functional departmentalization, that manufacturing and other major activities have been divided up to give the product managers (vice presidents, in this case) considerable autonomy and control.

If an organization's activities are service-related rather than product-related, each service would be autonomously grouped. For instance, an accounting firm would have departments for tax, management consulting, auditing, and the like. Each offers a common array of services under the direction of a product or service manager.

The particular type of customer the organization seeks to reach can also be used to group employees. The sales activities in an office supply firm, for instance, can be broken down into three departments to serve retail, wholesale, and government customers. (See Figure 10–8.) A large law office can segment its staff on the basis of whether they serve 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.

Another way to departmentalize is on the basis of geography or territory—

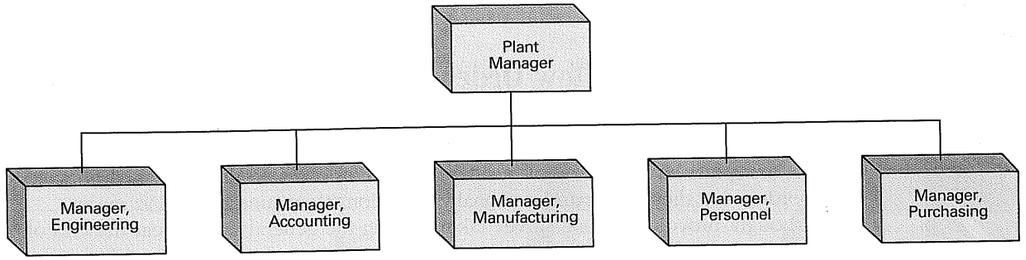


FIGURE 10–6
Functional Departmentalization

geographic departmentalization
Grouping activities on the basis of territory.

Another way to departmentalize is on the basis of geography or territory—**geographic departmentalization.** The sales function might have western, southern, midwestern, and eastern regions. (See Figure 10–9.) A large school district might have six high schools to provide for each of the major geographical territories within the district. If an organization's customers are scattered over a large geographic area, this form of departmentalization can be valuable.

Figure 10–10 depicts the various production departments in an aluminum plant. 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 inspect, pack, and ship department. Since each process requires different skills, this method offers a basis for the homogeneous categorizing of activities.

process departmentalization
Grouping activities on the basis of product or customer flow.

Process departmentalization can be used for processing customers as well as products. If you have ever been to a state motor vehicle office to get a driver's license, you probably went through several departments before receiving your license. In some states, applicants must go through three steps, each handled by a separate department: (1) validation, by the motor vehicles division; (2) processing, by the licensing department; and (3) payment collection, by the treasury department.

The Contemporary View Most large organizations continue to use most or all of the departmental groups suggested by the classical writers. Black & Decker, for instance, organizes each of its divisions along functional lines, organizes its manufacturing units around processes, departmentalizes sales around geographic regions, and divides each sales region into customer groupings. But two recent trends need to be mentioned. First, customer departmentalization has become increasingly emphasized. Second, rigid departmentalization is being complemented by the use of teams that cross over traditional departmental lines.

Today's competitive environment has refocused the attention of management to its customers. To better monitor the needs of customers and to be 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.[13] This allows the company to better identify its customers and to respond faster to their requirements.

We are also seeing a great deal more use of teams today as a device for accomplishing organizational objectives. A list of some of the companies using cross-departmental teams include Ford, Digital Equipment, Boeing, Rubbermaid, and Polaroid. As tasks have become more complex and diverse skills are needed to accomplish these tasks, management has increasingly introduced the use of teams and task forces.

FIGURE 10–7
Product Departmentalization

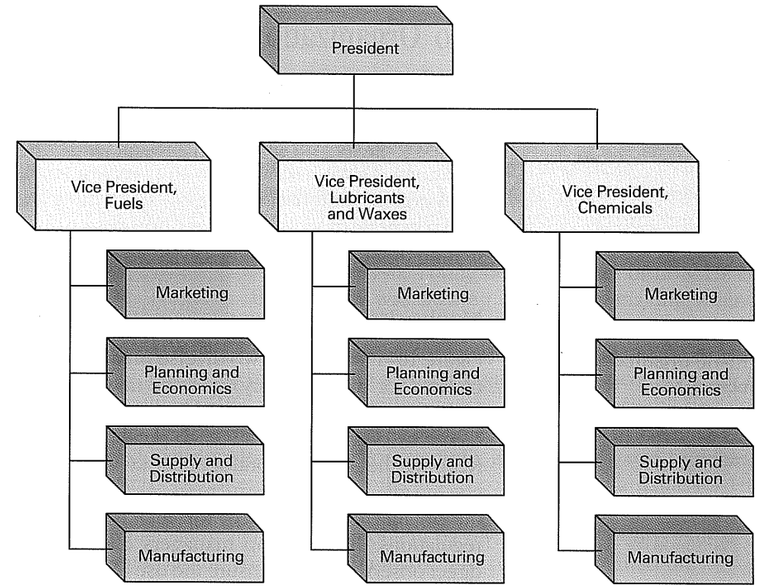


FIGURE 10–8
Customer Departmentalization

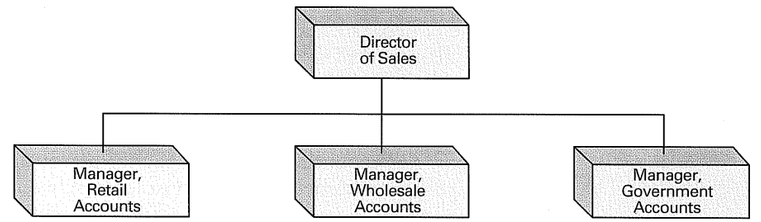


FIGURE 10–9
Geographic Departmentalization

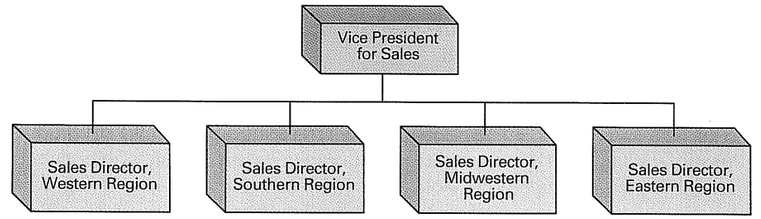
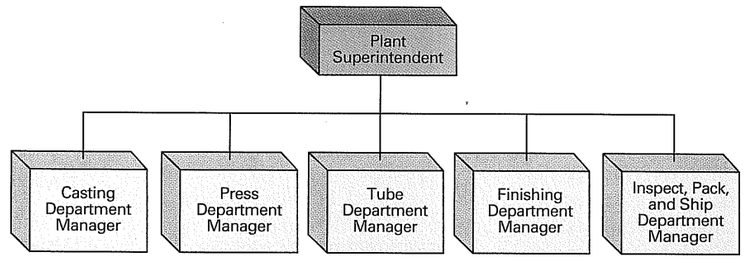


FIGURE 10–10
Process Departmentalization



A Contingency Approach to Organization Design

If we combine the classical principles, we arrive at what most of the early writers believed to be the ideal structural design: the mechanistic or bureaucratic organization. Today, we recognize that there is no single "ideal" organization design for all situations. As we discovered with planning and so many management concepts, the ideal organization design depends on contingency factors. In this section, we'll look at two generic models of organization design and then look at the contingency factors that favor each.

Mechanistic and Organic Organizations

mechanistic organization (bureaucracy)
A structure that is high in complexity, formalization, and centralization.

Figure 10–11 describes two diverse organizational forms.[14] The **mechanistic organization** (or **bureaucracy**) was the natural result of combining the classical principles. Adherence to the unity of command principle ensured the existence of a formal hierarchy of authority, with each person controlled and supervised by one superior. Keeping the span of control small at increasingly higher levels in the organization created tall, impersonal structures. As the distance between the top and the bottom of the organization expanded, top management would increasingly impose rules and regulations. Because top managers couldn't control lower-level activities through direct observation and ensure the use of standard practices, they substituted rules and regulations. The classical writers' belief in a high degree of division of labor created jobs that were simple, routine, and standardized. Further specialization through the use of departmentalization increased impersonality and the need for multiple layers of management to coordinate the specialized departments.

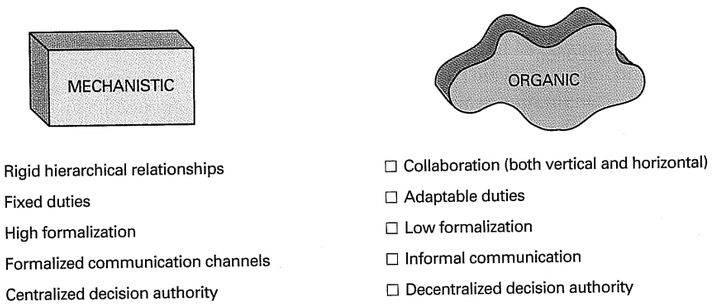
In terms of our definition of organization structure, we find the classicists advocating that *all* organizations be high in complexity, high in formalization, and high in centralization. Structures would be efficiency machines, well oiled by rules, regulations, and routinization. The impact of personalities and human judgments, which impose inefficiencies and inconsistencies, would be minimized. Standardization would lead to stability and predictability. Confusion and ambiguity would be eliminated.

organic organization (adhocracy)
A structure that is low in complexity, formalization, and centralization.

The **organic organization** (also referred to as an **adhocracy**) is a direct contrast to the mechanistic form. It is low in complexity, low in formalization, and decentralized.

The organic organization is a highly adaptive form that is as loose and flexible as the mechanistic organization is rigid and stable. Rather than having standardized jobs and regulations, the adhocracy's loose structure allows it to change rapidly as needs require. Adhocracies have division of labor, but the jobs people do are not standardized. Employees tend to be professionals who are technically proficient and trained to handle diverse problems. They need very few formal rules and little direct supervision because their training has instilled in them standards of professional conduct. For instance, a computer engineer is given an assignment. He doesn't need to be given procedures on how to do it. Most problems he can solve himself or resolve after conferring with colleagues. Professional standards guide his behavior. The organic organization is low in centralization in order for the professional to respond quickly to problems and because top management cannot be expected to possess the expertise to make necessary decisions.

FIGURE 10–11
Mechanistic Versus Organic Organizations



Strategy and Structure

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, it will need to modify structure to accommodate and support this change.

The first important research on the strategy-structure relationship was a study of

MANAGERS WHO MADE A DIFFERENCE

John A. Young at Hewlett-Packard

Successfully reducing the level of bureaucracy in a company is frequently compared, in difficulty, to teaching an elephant to dance. Yet John A. Young, the recently retired chief executive at Hewlett-Packard, can take credit for pulling off the trick.[15]

In early 1990, Young became aware of how HP's bureaucracy was slowing up decision making when he learned that endless meetings about technical decisions had delayed the company's development of a series of high-speed workstations by more than a year. Originally introduced to foster communication between HP's various operating groups and to evaluate all decisions, the thirty-eight in-house committees were pushing up costs, restricting innovation, and slowing down decision making. For example, it took nearly one hundred people on nine committees seven months just to come up with a name for HP's NewWave Computing software.

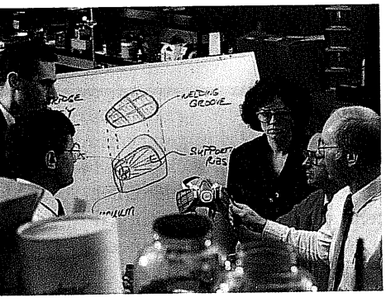
Young immediately attacked the problem by revamping HP's corporate structure. He wiped out the company's committee structure and flattened the organization. He divided the computer business into two largely autonomous groups, one handling personal computers, printers, and other products sold through dealers, and the second overseeing sales of workstations and minicomputers to big customers. He also broke up the single corporate sales force so that each computer group got its own sales and marketing team.

The results have been impressive. One general manager, who now has to deal with only three committees rather than thirty-eight, commented: "We are doing more business and getting product out quicker with fewer people." The numbers also support the success of Young's reorganization. Quarterly profits shot up 49 percent between 1991 and 1992.

close to 100 large U.S. companies conducted by Alfred Chandler.[16] After tracing the development of these organizations over a period of fifty years and compiling extensive case histories of companies such as DuPont, General Motors, Standard Oil of New Jersey, and Sears, Chandler concluded that changes in corporate strategy precede and lead to changes in an organization's structure. Specifically, he found that organizations usually begin with a single product or line. The simplicity of the strategy requires only a simple or loose form of structure to execute it. Decisions can be centralized in the hands of a single senior manager, while complexity and formalization will be low. As organizations grow, their strategies become more ambitious and elaborate.

From the single product line, companies often expand their activities within their industry by acquiring suppliers or selling their products directly to customers. For example, General Motors not only assembles automobiles but also owns companies that make air conditioners, electrical equipment, and other car components. This vertical integration strategy makes for increased interdependence between organizational units and creates the need for a more complex coordination device. This is achieved by redesigning the structure to form specialized units based on functions performed. Finally, if growth proceeds further into product diversification, structure needs to be adjusted again to gain efficiency. A product diversification strategy demands a structural form that allows for the efficient allocation of resources, accountability for performance, and coordination between units. This can be achieved best by creating many independent divisions, each responsible for a specified product line. In summary, Chandler proposed that as strategies move from single product to vertical integration to product diversification, management will move from an organic to a more mechanistic organization.

Recent research has generally confirmed the strategy-structure relationship but has used the strategy terminology presented in Chapter 8.[17] For instance, organizations pursuing a prospector strategy must innovate to survive. An organic organization matches best with this strategy because it is flexible and maximizes adaptability. In contrast, a defender strategy seeks stability and efficiency. This can best be achieved with a mechanistic organization.



3M makes a conscious effort to keep its work units as small as possible. The 52,000 U.S. employees of 3M are divided among thirty-seven divisions and nine subsidiaries. Among the company's ninety-one manufacturing plants, only five employ 1,000 people or more, and the average company installation has 270 employees.

Size and Structure

There is considerable historical evidence that an organization's size significantly affects its structure.[18] For instance, large organizations—those typically employing 2,000 or more employees—tend to have more specialization, horizontal and vertical differentiation, and 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 is 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 and Structure

Every organization uses some form of technology to convert its inputs into outputs. To attain its objectives, the organization uses equipment, materials, knowledge, and/or experienced individuals, and puts them together into certain types and patterns of activities. For instance, college instructors teach students by a variety of methods:

THE CHANGING FACE OF MANAGEMENT PRACTICE

Today's Successful Organizations are Increasingly Lean, Fast, and Flexible

A generation ago, successful managers valued stability, predictability, and efficiency through economies of scale. But many of yesterday's "stars" have faded. The following list contrasts the strong performing organizations in various industries in the 1960s and 1990s:

Industry	1960s Star	1990s Star
Airlines	Pan Am	Southwest Airlines
Automobiles	General Motors	Toyota
Broadcasting	CBS	CNN
Computers	IBM	Dell Computers
Financial services	Merrill Lynch	Charles Schwab
General retailing	Sears	Wal-Mart
Specialty retailing	Macy's	The Limited
Medical services	Massachusetts General Hospital	Quik Care
Steel	USX (U.S. Steel)	Nucor
Telecommunications	AT&T	MCI

What common structural factors characterize the 1990s stars? They're lean, fast, and flexible. More specifically, they are often considerably smaller than their counterparts of the 1960s, are flat rather than tall, have replaced hierarchy with teams, and organize around processes or customers instead of functions.[19]

Big isn't necessarily inefficient. Companies such as 3M, Johnson & Johnson, GE, Wal-Mart, Hewlett-Packard, The Limited, and Microsoft have managed to blend large size with agility. But they still typically break up their organizations into smaller, more flexible units. Few managers today accept the notion that large organizations should automatically produce at lower cost because of economies of scale. In the steel industry, for example, many of Nucor's minimills are 20 to 60 percent more efficient than the larger plants of USX and Bethlehem.

As noted earlier in the chapter, management is cutting layers out of their organizations and widening the span of control. Toyota, for instance, has seven layers between its chief executive and workers versus twenty-one at GM and seventeen at Ford. The twenty-one people who make up the staff of Nucor's headquarters, including the chairman and secretaries, look after twenty-two steel plants across the United States.

In place of rigid departments, managers are using teams that cut across functions. And the guiding organizational concept is focusing on the needs of the customer or work processes. The 1500 employees at Eastman Kodak who make black and white film are now organized horizontally. These employees don't work in departments, but in what they call "the flow." A twenty-five-member leadership team watches the flow. Within the flow are "streams" defined by customers (Kodak business units). In the streams, most employees work in semiautonomous teams.

formal lectures, group discussions, case analyses, programmed learning, and so forth. Each of these methods is a type of technology.

In the early 1960s, British scholar Joan Woodward demonstrated that organization structures adapt to their technology. While few researchers in organization design would argue today that technology is the *sole* determinant of structure, clearly it is an important contributor.[20] Let's look at Woodward's research and update the work on classifying different types of technology.

Joan Woodward The initial interest in technology as a determinant of structure can be traced to the work of Joan Woodward.[21] She studied nearly one hundred small manufacturing firms in the south of England to determine the extent to which classical principles such as unity of command and span of control were related to firm success. She was unable to derive any consistent pattern from her data until she segmented her firms into three categories based on the size of their production runs. The three categories, representing three distinct technologies, had increasing levels of complexity and sophistication. The first category, **unit production,** was comprised of unit or small-batch producers that manufactured custom products such as tailor-made suits and turbines for hydroelectric dams. The second category, **mass production,** included large-batch or mass-production manufacturers that made items like refrigerators and automobiles. The third and most technically complex group, **process production,** included continuous-process producers like oil and chemical refiners.

unit production
The production of items in units or small batches.

mass production
Large-batch manufacturing.

process production
Continuous-process production.

Woodward found that (1) distinct relationships existed between these technology classifications and the subsequent structure of the firms and (2) the effectiveness of the organizations was related to the "fit" between technology and structure.

For example, the number of vertical levels increased with technical complexity. The median number of vertical levels for firms in the unit, mass, and process categories were three, four, and six, respectively. More important, from an effectiveness standpoint, the more successful firms in each category clustered around the median for their production group. But not all the relationships were linear. As a case in point, the mass-production firms scored high in terms of overall complexity and formalization, whereas the unit and process firms rated low on these structural dimensions. Imposing rules and regulations, for instance, was impossible with the nonroutine technology of unit production and unnecessary in the highly standardized process technology. A summary of her findings is shown in Table 10–1.

After carefully analyzing her findings, Woodward concluded that specific structures were associated with each of the three categories and that successful firms met the requirements of their technology by adopting the proper structural arrangements. Within each category, the firms that most nearly conformed to the median figure for each structural component were the most effective. She found that there was no one best way to organize a manufacturing firm. Unit and process production are most effective when matched with an organic structure; mass production is most effective when matched with a mechanistic structure.

TABLE 10–1 Woodward's Findings on Technology, Structure, and Effectiveness

	Unit Production	Mass Production	Process Production
Structural characteristics	Low vertical differentiation Low horizontal differentiation Low formalization	Moderate vertical differentiation High horizontal differentiation High formalization	High vertical differentiation Low horizontal differentiation Low formalization
Most effective structure	Organic	Mechanistic	Organic

Charles Perrow One of the major limitations of Woodward's technological classification scheme was that it applied only to manufacturing organizations. Since manufacturing firms represent fewer than half of all organizations, technology needed to be operationalized in a more generic way if the concept was to have meaning across all organizations. Charles Perrow suggested such an alternative.[22]

Perrow directed his attention to knowledge technology rather than production technology. He proposed that technology be viewed in terms of two dimensions: (1) the number of exceptions individuals encounter in their work and (2) the type of search procedures followed to find successful methods for responding adequately to these exceptions. The first dimension he termed **task variability;** the second he called **problem analyzability.**

task variability
The number of exceptions individuals encounter in their work.

problem analyzability
The type of search procedures employees follow in responding to exceptions.

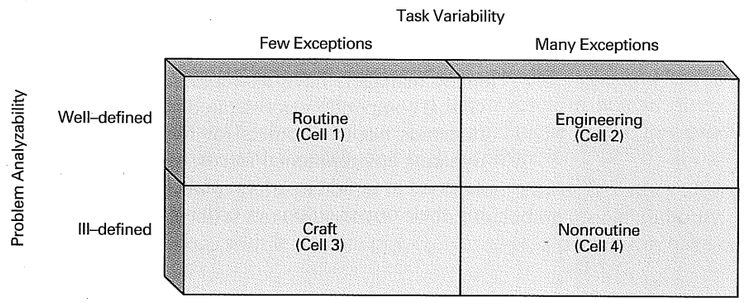
The exceptions in task variability are few when the job is high in routineness. Examples of jobs that normally have few exceptions in their day-to-day practice include those of a worker on a manufacturing assembly line and a fry cook at McDonald's. At the other end of the spectrum, if a job has a great deal of variety, it will have a large number of exceptions. This would characterize top management positions, consulting jobs, and jobs such as putting out fires on off-shore oil platforms.

The second dimension, problem analyzability, assesses search procedures. The search can, at one extreme, be described as well defined. An individual can use logical and analytical reasoning in the search for a solution. If you're basically a high B student and you suddenly fail the first exam in a course, you logically analyze the problem and find a solution. Did you spend enough time studying for the exam? Did you study the right material? Was the exam fair? How did other good students do? Using this kind of logic, you can find the source of the problem and rectify it. At the other extreme are ill-defined problems. If you're an architect given an assignment to design a building to conform to standards and constraints that you've never encountered before or read about, you won't have any formal search technique to use. You will have to rely on your prior experience, judgment, and intuition to find a solution. Through guesswork and trial and error you might find an acceptable choice.

Perrow used these two dimensions, task variability and problem analyzability, to construct the two-by-two matrix shown in Figure 10–12. The four cells in this matrix represent four types of technology: routine, engineering, craft, and nonroutine.

Routine technologies (cell 1) have few exceptions and have easy-to-analyze problems. The mass-production processes used to make steel and automobiles or to

FIGURE 10–12
Perrow's Technology Classification



refine petroleum belong in this category. Engineering technologies (cell 2) have a large number of exceptions, but they can be handled in a rational and systemized manner. The construction of bridges falls in this category. Craft technologies (cell 3) deal with relatively difficult problems but with a limited set of exceptions. Shoemaking and furniture restoring fit in this category. Finally, nonroutine technologies (cell 4) are characterized by many exceptions and difficult-to-analyze problems. This technology describes many aerospace operations, such as Rockwell International's development of the space shuttle.

In summary, Perrow argued that if problems can be systematically analyzed, the technologies of cells 1 and 2 are appropriate. Problems that can be handled only by intuition, guesswork, or unanalyzed experience require the technology of cell 3 or 4. Similarly, if new, unusual, or unfamiliar problems appear regularly, they would be in either cell 2 or 4. If problems are familiar, then cell 1 or 3 is appropriate.

What do these conclusions mean for the technology–structure relationship? Perrow argued that control and coordination methods should vary with technology type. The more routine the technology, the more highly structured the organization should be. Conversely, nonroutine technologies require greater structural flexibility. Thus, according to Perrow, the most routine technology (cell 1) can be best accomplished through standardized coordination and control. These technologies should be aligned with structures that are high in both formalization and centralization. At the other extreme, nonroutine technologies (cell 4) demand flexibility. Basically, they would be decentralized, have high interaction among all members, and be characterized as having a minimum degree of formalization. In between, craft technology (cell 3) requires the problem solving be done by those with the greatest knowledge and experience. That means decentralization. And engineering technology (cell 2), because it has many exceptions but analyzable search processes, should have decision-making centralized but should maintain flexibility through low formalization.

What Does It Mean? The common theme in studies of technology is that the processes or methods that transform inputs into outputs differ by their degree of routineness. In general, the more routine the technology, the more standardized the structure can be. We should expect management to meet routine technologies with a mechanistic organization. The more nonroutine the technology, the more organic the structure.[23]

Environment and Structure

In Chapter 3 we introduced the organization's environment as a constraint on managerial discretion. Research has demonstrated that environment is also a major influence on structure.[24] Essentially, mechanistic organizations are most effective in stable environments. Organic organizations are best matched with dynamic and uncertain environments.

The evidence on the environment–structure relationship helps to explain why so many managers have restructured their organizations to be lean, fast, and flexible. Global competition, accelerated product innovation by all competitors, and increased demands from customers for higher quality and faster deliveries are examples of dynamic environmental forces. Mechanistic organizations tend to be ill-equipped to respond to rapid environmental change. As a result, we're seeing managers redesigning their organizations in order to make them more organic.

MANAGING FROM A GLOBAL PERSPECTIVE

Organization Structures Reflect Cultural Values

An organization's structure must adapt to its environment. Included in that environment is the national culture of the country in which the organization is located. Research confirms that organizations mirror, to a considerable degree, the cultural values of their host country.[25]

In a country with a high power distance rating, people prefer that decisions be centralized. Similarly, uncertainty avoidance relates to formalization. High uncertainty avoidance relates to high formalization. Based on these relationships, we find certain patterns. French and Italian managers tend to create rigid bureaucracies that are high in both centralization and formalization. Managers in India prefer centralization and low formalization. Germans prefer formalization with decentralization.

The extensive use of work teams in a country like Japan can also be explained in terms of national culture. Japan scores high on collectivism. In such a culture, employees prefer more organic organizations built around work teams. In contrast, employees in India—where power distance values are high—are likely to perform poorly in teams. They feel more comfortable working in mechanistic, authority-dominated structures.

A recent study of managers' perceptions of the "ideal" organization in the People's Republic of China (PRC) found preferences for structures that fit with their culture.[26] Executives in the PRC favored high participation in their organizations. The researchers noted that this reflected the cultural value placed on allowing workers formal participation in the planning process as well as retaining some worker authority over the appointment and retention of managers. Managers in the PRC also have an aversion to conflict and a need to "save face," which fosters a mechanistic structure with clear lines of authority and unambiguous standard operating procedures. In addition, managers in the PRC were found to shun internal competition and individual risk-taking initiatives. This is consistent with traditional Chinese values of collective responsibility.

Summary

This summary is organized by the chapter-opening learning objectives found on page 279.

1. An organization's structure is a measure of its degree of complexity, formalization, and centralization.
2. The advantages of division of labor relate to economic efficiencies. It makes efficient use of the diversity of skills that workers hold. Skills are developed through repetition. Less time is wasted. Training is also easier and less costly. The disadvantage of division of labor is that it can result in human diseconomies. Excessive division of labor can cause boredom, fatigue, stress, low productivity, poor quality, increased absence, and high turnover.
3. Authority relates to rights inherent in a position. Power describes all means by which an individual can influence decisions, including formal authority. Authority is synonymous with legitimate power. However, a person can have coercive,

reward, expert, or referent power without holding a position of authority. Thus authority is actually a subset of power.

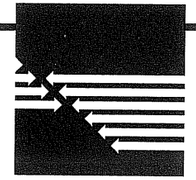
4. Wider spans of control mean that a manager has more subordinates reporting to him or her. The more subordinates that a manager can effectively supervise, the lower the cost of administrative overhead, and the more efficient the manager becomes.
5. Managers can departmentalize on the basis of function, product, customer, geography, or process. In practice, most large organizations use all five.
6. The mechanistic organization or bureaucracy rates high in complexity, formalization, and centralization. The organic organization or adhocracy scores low on these same three structural dimensions.
7. The "strategy-determines-structure" thesis argues that structure should follow strategy. As strategies move from single-product, to vertical integration, to product diversification, structure must move from organic to mechanistic.
8. Size affects structure at a decreasing rate. As size increases, so too do specialization, formalization, vertical differentiation, and decentralization. But it has less of an impact on large organizations than on small ones because once an organization has around 2000 employees it tends to be fairly mechanistic.
9. All other things equal, the more routine the technology, the more mechanistic the organization should be. The more nonroutine the technology, the more organic the structure should be.
10. All other things equal, stable environments are better matched with mechanistic organizations, while dynamic environments fit better with organic organizations.

Review Questions

1. Which is more efficient—a wide or a narrow span of control? Why?
2. Why did the classical writers argue that authority should equal responsibility?
3. Can the manager of a staff department have line authority? Explain.
4. What are the five sources of power?
5. In what ways can management departmentalize?
6. Explain Perrow's technology framework and discuss its implications for organization design.
7. Why did the classical authors favor a mechanistic organization?
8. Under what conditions is the mechanistic organization most effective? When is the organic organization most effective?

Discussion Questions

1. Can you reconcile the following two statements: (a) an organization should have as few levels as possible to foster coordination; and (b) an organization should have narrow spans of control to facilitate control.
2. How are authority and organization structure interlocked?
3. Why is an understanding of power important?
4. Is your college organized as a mechanistic or an organic organization? Is this the type of structure you would ideally choose for it? Explain.



SELF-ASSESSMENT EXERCISE

How Power-Oriented Are You?

Statement	Disagree: A Lot	Disagree: A Little	Neutral	Agree: A Little	Agree: A Lot
1. The best way to handle people is to tell them what they want to hear.	1	2	3	4	5
2. When you ask someone to do something for you, it is best to give the real reason for wanting it rather than giving reasons that might carry more weight.	1	2	3	4	5
3. Anyone who completely trusts anyone else is asking for trouble.	1	2	3	4	5
4. It is hard to get ahead without cutting corners here and there.	1	2	3	4	5
5. It is safest to assume that all people have a vicious streak, and it will come out when they are given a chance.	1	2	3	4	5
6. One should take action only when it is morally right.	1	2	3	4	5
7. Most people are basically good and kind.	1	2	3	4	5
8. There is no excuse for lying to someone else.		2	3	4	5
9. Most people forget the death of their father more easily than the loss of their property.	1	2	3	4	5
10. Generally speaking, people won't work hard unless they're forced to do so.	1	2	3	4	5

Turn to page SK-3 for scoring directions and key.