

Chapter 13

Organizational Design

Chapter Outline

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Concepts of Organizational Design

Organizations are open social systems that consist of patterned activities and this chapter explains how these patterned activities are structured. The purpose of organizational structure is to create and regulate these activities, and organizational structure serves to reduce the variability in human performance, or, in other words, it serves to control behavior by making it coordinated and predictable.

Although some people object to the idea of controlling human behavior because it appears to destroy individuality and autonomy, control is nevertheless essential. An organization cannot survive if it's members behave in random, unpredictable ways. Such a situation would produce chaos and disorganization. The difference between a well-organized and poorly organized group is as dramatic as the difference between the beauty of an orchestra playing a symphony versus the noise the musicians produce when they are tuning their instruments. To obtain the necessary patterned activities and thereby create an organization, the variability in human behavior must be reduced so that people behave in regular, predictable patterns. Although organizations vary in the amount of control they require from their members, at least some control is inherent in every organization.

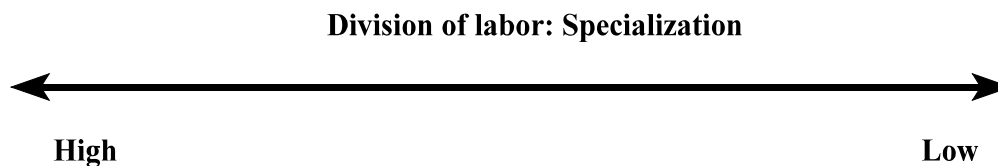
The term *organizational structure* refers to the relatively fixed relationships among the jobs in the organization. The process of creating this structure and making decisions about the relative benefits of alternative structures is called *organizational design*. Creating an organizational structure involves two issues: (1) differentiation, or creating a division of labor and (2) integration, or coordinating the divisions. Therefore, the study of organizational structure examines the manner in which an organization divides labor into specific tasks and achieves coordination among these tasks. The five major design decisions

that must be made involve division of labor, departmentalization, span of control, delegation of authority, and coordinating mechanisms.

Division of Labor

The term ***division of labor*** refers to the process of dividing a large task into successively smaller jobs. A related term is “job specialization.” All jobs are specialized to some degree, since everyone can’t do everything, but some jobs are considerably more specialized than others. One of the major benefits of organized activities is that a group of people working together through a division of labor are able to produce more than they could if they were working alone.

The key issue here is how specialized the work should be. Specialization is low when employees perform a variety of different tasks and high when each person performs only a single task. In a word processing center, for example, the degree of specialization is low if three typists are allowed to edit, type, and proofread the manuscripts they type. However, if each of these functions is assigned to a different individual, the degree of specialization would be high. The degree of specialization can be represented along a continuum.



Deciding on the appropriate level of specialization is an important design decision because it greatly influences productivity. It is possible to create jobs that are so highly specialized that the organization suffers from a lack of coordination and there are times when there isn't enough work to keep everyone busy. Highly specialized jobs can also be extremely boring. Yet there are definite advantages to highly specialized jobs, and the chief advantage is that such jobs contribute to higher levels of productivity. Several reasons explain why specialization is more productive:

1. It creates greater proficiency by allowing employees to perform the same repetitive activity.
2. It requires less training to master the job.
3. Less time is lost going from one activity to another.
4. Special tools can be developed that can lead to complete automation of a task.
5. There is better quality control of output.

Departmentalization¹

Departmentalization is the process of combining jobs into groups or departments. Managers must decide whether the most appropriate structure is to have a homogeneous department with similar jobs or a heterogeneous department with unrelated jobs? Jobs can be grouped according to several criteria, and the most popular criteria include function, product, territory, and clientele, as illustrated in Exhibit 13.1.

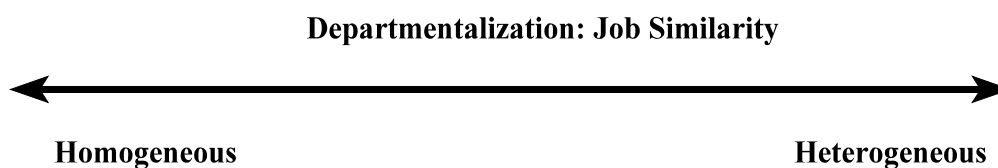
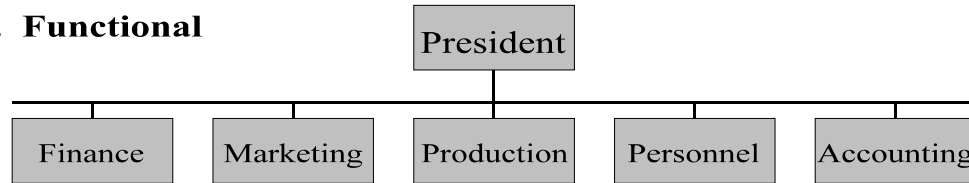
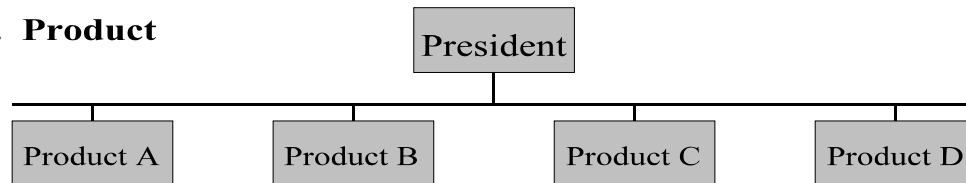
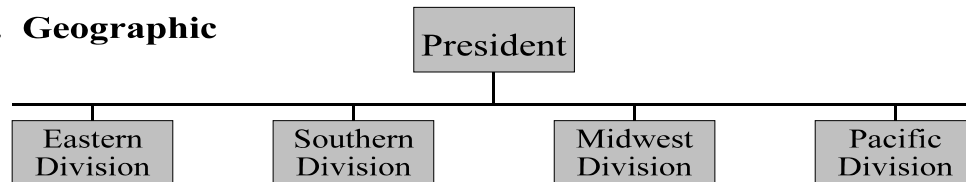
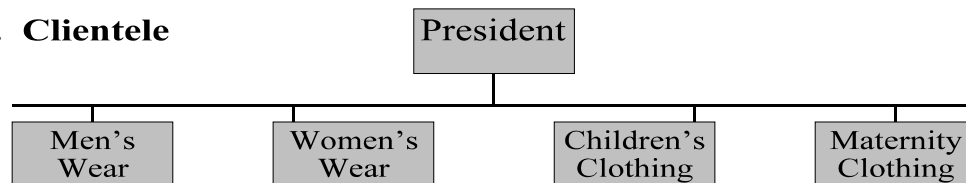


Exhibit 13.1 Bases of Departmentalization**1. Functional****2. Product****3. Geographic****4. Clientele**

Functional Departmentalization. Functional departmentalization involves grouping jobs that perform similar functions into the same department. For example, all the jobs associated with accounting, such as general ledger accountant, accounts payable clerk, accounts receivable clerk, and cost accountant, could all be combined into an accounting department. Organizing the departments by function would be a homogeneous form of departmentalization, since everyone in the department would share the same specialized skills. Other forms of departmentalization tend to be market-based and more heterogeneous.

Functional departmentalization is the most widely used scheme because in most organizations it is the most effective method. This explains why a typical manufacturing company is departmentalized into production, marketing, finance, accounting, research and development, and human resource departments. Most hospitals are departmentalized in terms of such functions as surgery, nursing, psychiatry, pharmacy, human resource, and housekeeping.

Functional departmentalization has both advantages and disadvantages. Perhaps the most significant advantage is that it promotes skill specialization by having people who face similar problems and opportunities work together. The functional form also permits the maximum use of resources and encourages the use of specialists and specialized equipment, thereby eliminating duplication of equipment and effort. Communication and performance are usually improved because superiors share expertise with their subordinates.

The disadvantages of functional departmentalization are that it reduces communication and cooperation between departments and fosters a parochial perspective. This narrow orientation limits managers' capacities for coordination and encourages a short time horizon. Functional departmentalization has often led to a problem referred to as *suboptimizing*. Suboptimizing is said to occur when one department is pursuing its own goals and trying to look good at the expense of other departments or the organization as a whole. Suboptimizing is particularly problematic when departments are rewarded for achieving their own goals. Although departments should be rewarded for helping other departments, many departmental goals can best be achieved when each department pursues its own selfish interests. Custodial departments, for example, could keep the buildings cleaner if no one used the buildings. Likewise, the accounting and human resource departments could generate better reports if managers from whom the information was obtained spent all their time completing lengthy forms. Coordination and support across functional departments often become difficult because departments are separated both geographically and psychologically, and members come to view problems only from their limited functional perspectives.

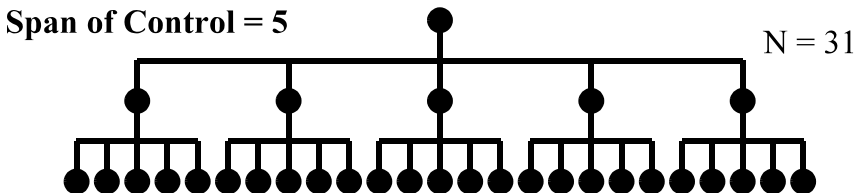
Product Departmentalization. Product departmentalization involves grouping jobs that produce similar products, which typically occurs in large firms when it becomes difficult to coordinate the various functional departments. The members of a product-oriented department can develop greater expertise in researching, manufacturing, and distributing a specific product line. Managers have better control over the success or failure of each product if the authority, responsibility, and accountability are assigned according to products. This method is illustrated by the "brand" management structure that Procter & Gamble uses with its major products.

The product form of departmentalization also has both advantages and disadvantages and is often contrasted with the functional form of departmentalization. The major advantage is that it creates greater inter-departmental coordination and focuses the efforts of each department on producing an effective and useful product. Companies organized by product are generally more customer oriented, and their employees tend to be more cohesive and involved in their work.

The major disadvantage of organizing by product is that the resources and skills of the organization are not fully employed unless the organization is extremely large. For example, a computer-driven lathe machine that is used for only one product and sits idle much of the time represents an inefficient use of capital resources. Another disadvantage is that product-oriented departments usually lead to increased costs because of duplication of activities, especially staff functions.

Exhibit 13.2 Span of Control: Tall Versus Flat Organizational Structures

Span of Control: Tall Versus Flat Organizational Structures



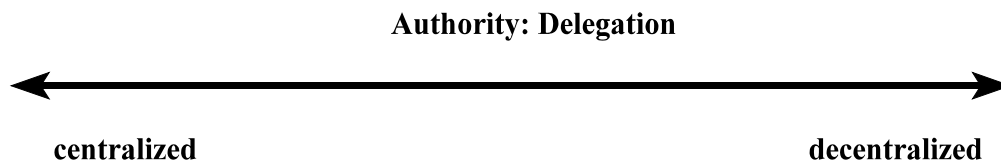
1. *Contact required.* Jobs that require frequent contact and a high degree of coordination between superior and subordinates should use narrower spans of control. For example, jobs in medical technology often require frequent consultation of team members with a supervisor; therefore, a large span of control would preclude the necessary sharing of ideas and information that typically must occur on an informal basis.
2. *Level of subordinates' education and training.* Large spans of control are appropriate for highly skilled employees and professionals who are well trained. They generally require less supervision because they know their jobs well and they largely supervise themselves.

3. *Ability to communicate.* Instructions, guidelines, and policies can be communicated to employees by a variety of methods. If all the necessary instructions can be written and then disseminated, it would be possible for one manager to supervise a large group. However, as communication becomes more difficult and job-related discussions become more important, a narrower span of control is appropriate to avoid overloading a supervisor.
4. *Nature of the task.* Jobs that are repetitive and stable require less supervision and are more amenable to wide spans of control. For this reason, some field supervisors are able to supervise as many as sixty to seventy-five field hands in harvesting agricultural crops. However, when tasks are changed frequently, a narrower span of control is appropriate.

There seems to be a natural tendency for managers to adopt narrow spans of control, which increases the number of hierarchical levels. To improve organizational productivity, therefore, they are often encouraged to eliminate hierarchical levels by increasing spans of control. Productivity often increases after organizations have eliminated one or more hierarchical levels of administration.

Delegation of Authority

The fourth design issue concerns the delegation of authority. Decentralization involves distributing power and authority to lower-level supervisors and employees. The more decentralized an organization, the greater the extent to which the rank-and-file employees can participate in and accept responsibility for decisions concerning their jobs and the activities of the organization. Decision-making authority can vary along a continuum from highly *centralized* to highly *decentralized*.



Decentralization often leads to greater organizational effectiveness since it allows greater autonomy and responsibility among lower-level employees thereby more effectively using an organization's human resources. Supervisors in decentralized organizations typically report higher levels of job satisfaction and involvement, and they tend to be more productive because of increased autonomy and responsibility. A company that is struggling with declining sales may decide to decentralize its management structure to make it more responsive to customers and more conducive to new product development.

In spite of its benefits, however, decentralization is not universally superior and does not always contribute to greater organizational effectiveness. For example, one classic study discovered that decentralized control led to improved performance in research laboratories but caused poorer performance in production departments.³ Several weaknesses of decentralization have been identified suggesting that centralized decision making is sometimes superior.

1. Certain shared functions, especially staff functions, are more difficult to execute under decentralization.
2. Decentralization can create jurisdictional disputes and conflicts over priorities, since each unit essentially becomes an independent area.
3. Decentralization requires greater competence and expertise and greater commitment on the part of decision makers.

4. Decentralized decisions made by many lower-level managers create problems of coordination and integration. A decentralized organization could be very ineffective due to inadequate coordination and integration.

To design an effective organizational structure, managers must select the optimal amount of centralization and decentralization of authority. Power and authority should be decentralized to an extent that organizations use the knowledge and expertise of lower-level participants while simultaneously maintaining sufficient centralization to ensure adequate coordination and control. Like the other concepts of organizational design, the ideal policy depends on the situation.

Coordinating Mechanisms

Organizations need to process information and coordinate the efforts of their members. Employees at lower levels need to perform activities consistent with top-level goals, and the managers at the top need to know about the activities and accomplishments of people at lower levels. Organizations use five methods to achieve coordination that vary according to the amount of discretion workers are allowed.

Coordinating mechanisms: Personal discretion



1. ***Direct supervision.*** All work is coordinated by supervisors who tell subordinates what to do.
2. ***Standardization of work processes.*** Jobs that are highly routine, such as assembly-line jobs, can be coordinated through standard operating procedures or by the technology itself.
3. ***Standardization of outputs.*** When products must be produced according to technical specifications, these specifications may serve as an adequate basis for coordinating the activities. Individual workers are allowed some discretion in performing the work provided the output meets the required specifications.
4. ***Standardization of skills.*** Highly skilled and trained employees coordinate their work by performing activities consistent with their technical training. A surgical team or an ambulance crew is often coordinated by having people perform their jobs according to the way they were trained.
5. ***Mutual adjustment.*** Activities that are constantly changing and uncertain are coordinated through mutual adjustment, which consists of a constant interchange of informal communication. Here, individuals coordinate their work through informal processes such as meetings, task forces, and liaison positions, mutually adjusting to one another's needs. Employees communicate with whomever they need to communicate with, without regard for formal lines of communication.

A crucial issue in choosing a coordinating mechanism concerns the need for information and the ways in which this information is collected, processed, and disseminated. The type of information collected by a driver's license bureau, for example, is mostly routine information that can be coordinated by rules and

procedures. Fashion merchandisers, however, require extensive market information that may be obtained from a variety of irregular sources and disseminated informally to anyone who needs to know.

Coordinating mechanisms influence the degree of formalization in an organization. The term *formalization* refers to the degree to which rules and procedures guide the actions of employees. These rules and procedures can be either explicit or implicit. Explicit rules are written in job descriptions, policies and procedures manuals, or office memos. Implicit rules are often unwritten and develop as employees establish their own ways of doing things over time. Although they are unwritten, implicit rules often become standard operating procedures with the same effect on employee behavior as explicit rules.⁴

In a highly formal organization, employees are required to follow strict rules and procedures that tell them exactly how to perform their work. Informal organizations have very few rules and procedures; the employees are largely free to structure their own jobs. Formal organizations tend to rely on direct supervision and standardization of work processes, while informal organizations tend to use mutual adjustment and standardization of skills. An example of a formal structure in a university would be an administrative agency, such as the student loans office, while an example of an informal structure would be an academic department, such as the sociology department.

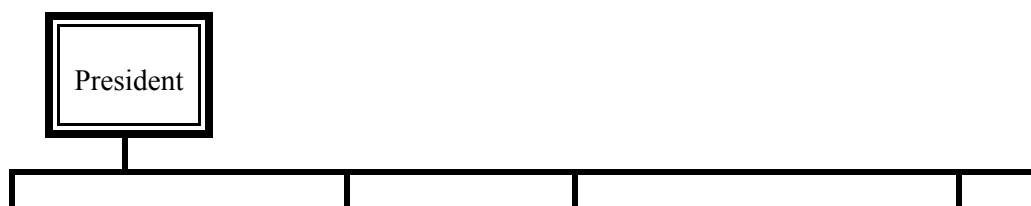
Matrix Organizational Structure

Some organizations have found that a combination of functional and product departmentalization provides the best reporting relationships and horizontal linkages. This dual structure, called a ***matrix structure***, simultaneously organizes part of the organization along product lines and part of the organization along functional lines to gain the advantages of both, as illustrated in Exhibit 13.3.

In a matrix organization, each department reports simultaneously to both product managers and functional managers who have equal authority within the organization. For example, a member of the legal department may be assigned to assist with the development of a specific product and assume the responsibility for all the legal activities associated with the development, production, and distribution of the product. This individual would report to both the product manager and the supervisor of the legal department.

Although dual structures are awkward, they can quickly create new products while retaining the benefits of a functional structure. Consequently, a matrix structure is particularly effective when environmental pressures create a demand for both technical quality (functional) and frequent new products (product). These dual pressures require a dual authority structure to deal with them. A matrix structure is particularly useful in an uncertain environment. Frequent external changes and high interdependence between departments require effective linkages between departments within an organization.

Exhibit 13.3: Matrix Organizational Structure



| | | Product A | | Product B | | Product N |
|-----------------|--|-----------|--|-----------|--|-----------|
| | | | | | | |
| R & D | | | | | | |
| | | | | | | |
| Production | | | | | | |
| | | | | | | |
| Marketing | | | | | | |
| | | | | | | |
| Finance | | | | | | |
| | | | | | | |
| Human Resources | | | | | | |

The disadvantage of a matrix structure is that it increases role ambiguity, stress, and anxiety because people are assigned to more than one department. Matrix structures violate the principle of unity of command. The employees who work in a matrix structure often feel that inconsistent demands are made on them, causing unproductive conflicts that call for short-term crisis management. Occasionally, employees abuse the dual-authority structure by playing one manager against another, thereby generating excuses for their incompetence or inactivity.

Universal Theories of Organizational Design

The structure of an organization is determined by its division of labor, departmentalization, span of control, delegation of authority, and coordinating mechanisms. Different combinations of these factors can produce many different organizational structures. Which structure is the most effective?

This section describes universal theories of organizational design that were meant to be ideal structures. Unfortunately, a universally superior organizational structure does not exist; the best structure depends on the situation, as explained in the next section.

Mechanistic Versus Organic Organizational Structure

Two contrasting types of organizational structure have been recommended as universally appropriate for every organization. These two types differ greatly in the amount of formal structure and control they advocate. Several labels have been used to describe these two types. The labels used in this book are “mechanistic” versus “organic” organizational structures.

Mechanistic and organic organizational structures were first described in a classic study by Burns and Stalker.⁵ They observed twenty industrial firms in England and discovered that the external environment was related to the internal organizational structure. When the external environment was stable, the internal organization was managed by rules, procedures, and a clear hierarchy of authority. Most managerial decisions were made at the top, and there was strong centralized authority. Burns and Stalker called this a ***mechanistic organization structure***.

Some organizations, those in rapidly changing environments, had a much different organizational structure. The internal organization was much more adaptive, free-flowing, and spontaneous. Rules and regulations were generally not written, and those that were written were often ignored. People had to find their own way within the system and learn what to do. The hierarchy of authority was not clear, and decision-making authority was broadly decentralized. Burns and Stalker called this an ***organic organizational structure***.

The differences between an organic and mechanistic organizational structure are illustrated in Exhibit 13.4. In a mechanistic structure, the work is divided into highly specialized tasks that are rigidly defined with a formal job description. In an organic structure, however, most tasks are not so highly specialized; employees are often expected to learn how to perform a variety of tasks and to frequently adjust and redefine their jobs as the situation changes. In a mechanistic structure, communication patterns follow the formal chain of command between superiors and subordinates. In an organic structure, however, communication is horizontal, and employees talk with whomever they need to in order to do their work.

Mechanistic and organic structures differ in each of the five dimensions of organizational structure, as illustrated in Exhibit 13.5. In addition to having highly specialized jobs, mechanistic structures are characterized by homogeneous departmentalization, a narrow span of control, highly centralized delegation of authority, and coordination through direct supervision and rules. Organic structures are just the opposite. The labor is divided in such a way that the level of specialization is reduced, the jobs are organized into heterogeneous departments, there is a broad span of control, decision-making authority is widely decentralized, and work is coordinated by mutual adjustment.

Exhibit 13.4 Mechanistic vs. Organic organizational Structures

| Mechanistic | Organic |
|---|--|
| 1. Tasks are divided into separate, specialized jobs. | 1. Tasks may not be highly specialized, and employees may perform a variety of tasks to accomplish the group's task. |
| 2. Tasks are clearly and rigidly defined. | 2. Tasks are not elaborately specified: they may be adjusted and redefined through employee interactions. |

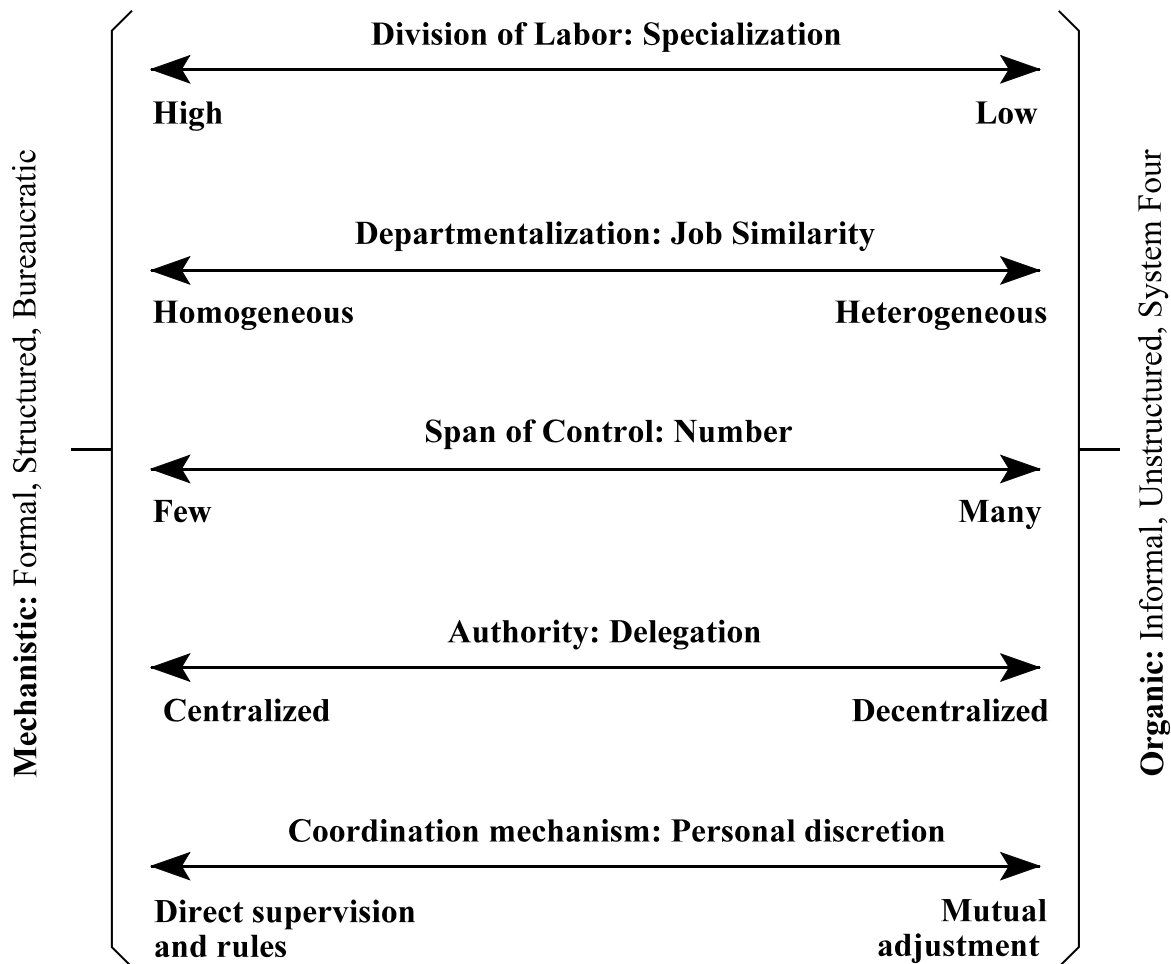
- | | |
|---|---|
| 3. Strict hierarchy of authority and control with many rules. | 3. Informal hierarchy of authority and control with few rules. |
| 4. Knowledge and control of tasks are centralized, and tasks are directed from the top of the organization. | 4. Knowledge and control of tasks are located anywhere in the organization. |
| 5. Communication is vertical throughout the formal hierarchy | 5. Communication is horizontal; employees talk to whomever they need to communicate with. |
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Bureaucratic Organizational Structure

Perhaps the best description of a mechanistic organizational structure is Max Weber's description of **bureaucracy**.⁶ Highly bureaucratic organizations have a very mechanistic organizational structure. Unfortunately, the word bureaucracy is associated with a variety of negative feelings. Many people associate bureaucracy with excessive red tape, procedural delays, and organizational inefficiency. These connotations are not consistent with Max Weber's description of bureaucracy. According to Max Weber, a bureaucracy was a sociological concept that referred to the rational collection of clearly organized activities. The word *bureaucracy* comes from the French word *bureau*, which means "office." In short, a bureaucracy is a collection of carefully organized offices performing specialized functions according to clearly defined rules and procedures. Weber's description of bureaucracy was intended as a description of the ideal form of a large organizational structure. The major attributes of this ideal form were rationality and efficiency. A bureaucratic structure was a well-organized collection of offices that combined the efforts of large numbers of people through a system of rules and procedures. Weber's description of a bureaucracy included the following identifying characteristics.

1. *A division of labor based on functional specialization.* All tasks necessary for accomplishing the goals of the organization are divided into highly specialized jobs. Such job specialization allows jobholders to become expert in their jobs and to be held responsible for the effective performance of their duties.
 2. *A well-defined hierarchy of authority.* Each officeholder in the organization is accountable to a superior. The authority of superiors is based on expert knowledge and is legitimized by the fact that it is delegated from the top of the hierarchy. In this way a clearly defined chain of command is created.
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Exhibit 13.5 Structural Differences Between Mechanistic and Organic Organizations



3. *A system of rules covering the rights and duties of employees.* Each task is performed according to a consistent system of abstract rules to assure uniformity and coordination of different tasks. Through a system of clearly defined rules, officeholders can eliminate any uncertainty in performing their tasks that is caused by individual differences.
4. *Impersonal relationships* Each officeholder maintains a social distance from subordinates and clients and conducts the business of the office in a formal, impersonal manner. Strict adherence to the rules and impersonal relationships assure that personalities do not interfere with the efficient accomplishment of the office's objectives. There should be no favoritism resulting from personal friendships or ingratiating behaviors.
5. *Promotion and selection based on technical competence.* Employment in a bureaucratic organization is based on technical qualifications, and employees are protected against arbitrary dismissal. Similarly, promotions are based on seniority and achievement. Employment in the bureaucracy is viewed as a lifelong career that is designed to create loyalty and commitment.

6. *Written communications and records.* All administrative acts, decisions, and rules are recorded in writing. Since verbal conversations and discussions cannot be filed, all decisions, complaints, and administrative acts are to be written and filed. Record keeping provides an organizational memory, and written documents provide continuity over time.

Many of the characteristics that Weber recommended for an ideal bureaucracy seem quite obvious to us today because we are surrounded by organizations that have rules, a division of labor, written documents, and a hierarchy of authority. These characteristics provide an impersonal means of controlling organizations by guaranteeing that dependable work will be performed by qualified employees under the impartial direction of rational supervisors. These rational characteristics, however, were not so obvious a century ago when there were very few large organizations. Most organizations were family operated and characterized by nepotism and unfair treatment. Weber's recommendation of a rational, bureaucratic ideal was intended to both eliminate favoritism and increase organizational efficiency.

Advantages of a Bureaucracy. Bureaucracy has survived and even thrived because its advantages outweigh its disadvantages. The advantages of a bureaucracy stem logically from its ideal characteristics. At its best, a bureaucracy is a smooth-running organization where decisions and activities are processed efficiently and all members are treated equitably. Seven major benefits have been attributed to bureaucracy, as summarized in Exhibit 13.6.

1. *Technical efficiency.* The chief benefit of a bureaucracy is that the activities and functions have been carefully analyzed and rationally organized in a way that creates maximum efficiency. The process of dividing the labor into highly specialized jobs, assigning them to different offices, and coordinating them through a carefully designed system of rules and procedures produces what has sometimes been called *machine-like efficiency*.
2. *Elimination of favoritism.* By following the correct procedures and administering the rules impartially, clients and officeholders are treated equitably and fairly. No one is treated with special favors because of personal friendships or ingratiating behaviors. The rules and procedures are administered without regard to family, wealth, or status. This impartial treatment is consistent with bureaucratic ideals that condemn nepotism, partiality, and capricious judgment.
3. *Predictability in performance.* Strict adherence to clearly defined rules and procedures leads to greater predictability of performance. Both customers and employees know in advance the outcome of a decision. For example, if the vacation policy allows 3 weeks' paid vacation after five years of service, all employees with at least five years of service can expect to receive a 3-week paid vacation.
4. *Job security.* By following the rules and doing what the handbook or procedures manual says they are supposed to do, officeholders are assured that they will not be fired. Such a tenure policy maximizes vocational security. Officeholders tend to view their employment in the organization as a lifelong career. Such an outlook minimizes turnover and engenders a high degree of loyalty and commitment.
5. *Technical competence.* Since officeholders are hired on the basis of their ability rather than on the basis of whom they know, they are highly trained and competent officials.

6. *Minimum direction needed.* Since a bureaucracy has been rationally designed, and the officeholders are trained experts who are expected to follow standard rules and operating procedures, very little day-to-day direction is needed to keep the bureaucracy functioning. Like a carefully designed machine that operates smoothly after it is turned on, a bureaucracy is expected to operate smoothly with little direction or added input.
7. *Avoids impulsive decisions.* Since a bureaucracy operates according to standard operating procedures, it is not possible for an impulsive idea on the part of one officeholder immediately to disrupt the entire bureaucracy. Since they must be coordinated with other officeholders, new ideas and changes cannot be implemented quickly. Although reducing the possibility of impulsive action is sometimes an advantage, it can also be a disadvantage when change is required, which explains why bureaucracies are often associated with red tape and resistance to change.

Exhibit 13.6 Advantages and Disadvantages of Bureaucracies

Advantages

1. Technical efficiency
2. Elimination of favoritism
3. Predictability of performance
4. Job security
5. Technical competence
6. Minimum direction needed
7. Avoids impulsive action

Disadvantages

1. Rigidity of behavior
2. Bureaucratic personality
3. Inversion of means and ends
4. Resistance to change
5. Peter Principle

Disadvantages of Bureaucracy. Although Weber described bureaucracies as ideal structures, they are not without their problems. Over the years, several dysfunctional consequences have been identified. Some of these dysfunctional consequences are not created because the bureaucracy fails to operate properly. Instead, they are created because the bureaucracy is functioning exactly as it should, and the problems are inherent to the bureaucratic structure itself. In other words, these problems cannot be solved by having the bureaucracy operate more effectively; instead, a stricter application of bureaucratic principles would exacerbate the problems.

- 1 *Rigidity of behavior.* In a bureaucracy, officeholders are expected to know the rules and procedures and to follow them precisely. Bureaucracies control individual behavior by demanding strict rule compliance. However, as employees follow the rules more precisely, their behavior becomes more rigid and more insensitive to individual problems. This rigid behavior inevitably leads to conflict with clients and customers. Many times people think their personal situation represents an exception to the rule, and occasionally they are right. Wise bureaucrats know when to deviate from the rules and accept responsibility for their decisions. But bureaucrats who have been intimidated or threatened seek to protect themselves by following the rules. As the level of conflict rises, the dysfunctional consequences of a bureaucratic structure become more obvious. Instead of responding to the complaints of clients and their demands for individual treatment, bureaucrats respond by following the rules more strictly. By strict adherence to the rules in their handbooks and policy manuals, they are able to defend their actions in the face of conflict.

- 2 *Bureaucratic personality.* Employees who work in bureaucratic organizations sometimes develop unhealthy personalities that are excessively power-oriented. Officeholders come to believe that moral decisions of right or wrong are defined by higher-level officers and by the rules they are expected to follow. Following the rules becomes more important than the possibly inhumane treatment required by strict rule compliance. For example, a pregnant student may be required to walk back to her apartment in a storm because she forgot to bring her computer lab pass to show that she is registered in a computer class.
- 3 *Inversion of means and ends.* Rigid adherence to rules and regulations often results in a situation in which adherence becomes more important than achieving organizational goals, a condition called means-ends inversion. Thus, the means become more important than the end. Although the rules were originally designed to further organizational success, each officeholder comes to see the rules and regulations of that office as the ultimate goal. For example, advertising campaigns, sales incentives, and other programs are designed to increase sales. But each of these programs can come to be viewed as an end in itself, so that an elaborate awards banquet becomes so important that it dominates everyone's time and attention and replaces efforts to achieve high sales.
- 4 *Resistance to change.* As noted earlier, bureaucracies are intentionally designed to resist rapid change. This resistance is created by several aspects of a bureaucracy. First, officeholders tend to avoid responsibility when they are faced with decisions they prefer not to make. By redefining the problem, most officeholders are able to say, "That's not my job." Second, bureaucrats tend to be isolated from external feedback and outside evaluation. Bureaucracies tend to focus on their own internal functioning to the exclusion of external feedback. Their failure to respond to external evaluation prevents them from making corrective adjustments. Third, bureaucracies are not designed to foster goal setting or goal accomplishment. Rules and procedures focus the efforts of officeholders on activities rather than outcomes. Opportunities to produce innovative products or services tend to be overlooked because of a preoccupation with bureaucratic procedures. Fourth, bureaucracies move at a painfully slow pace in making complex decisions. The delay occurs because of the number of people who must concur before a decision is made about issues of importance. After the decision is finally made, there is an additional delay while new rules and procedures for each officeholder are created.
- 5 *The Peter Principle.* The Peter Principle was proposed as a satirical and humorous description of the incompetence that often occurs in bureaucratic organizations.⁷ This principle states that in a hierarchy, every employee tends to rise to his or her level of incompetence. In a bureaucracy, promotions are supposed to be based on demonstrated ability. Therefore, the most competent individual at one level is promoted to the next level. The Peter Principle explains, however, that competence at one level does not guarantee competence at the next level. The skills and abilities required for a subordinate position are frequently different from the skills and abilities required for success at the next level. Therefore, the most competent individuals at one level are promoted from level to level within the organization until they reach their level of incompetence, at which time they are no longer considered for promotion. An example of the Peter Principle is the promotion of competent technical or sales personnel into administrative positions for which they are ill suited by temperament. Outstanding grade school teachers, for example, do not necessarily make outstanding grade school principals. According to the Peter Principle, the only effective work that occurs in bureaucracies is performed by individuals who have not yet achieved their level of incompetence.

System Four Organizational Structure

Rensis Likert proposed a theory of organizational design quite different from bureaucracy that is known as a *System Four* organizational design.⁸ Likert recommended his System Four as the ideal way to design an organization and extensive research by Likert and others has supported his theory. The central premise of Likert's theory is that leaders develop different management systems that can be described along a continuum from exploitive and authoritative at one end to participative and group-oriented at the other end.

1. The *exploitive-authoritative* style, System One, is characterized by the threat of punishment, hostile attitudes, downward communication, and distrust. All decision making and goal setting are performed by top management.
2. The *benevolent-authoritative* style, System Two, is slightly less hostile and threatening, since top management behaves more benevolently, but all decisions, goal setting, and communication are directly under the control of top management.
3. The *consultative* style, System Three, involves greater coordination between upper and lower levels of management. The ideas and interests of lower-level employees are considered, and lower-level employees have an opportunity to contribute to the decision making and goal setting in a limited way.
4. The *participative-group oriented* style, System Four, involves open communication, participative decision making within groups, a decentralized authority structure, broad participation in the goal-setting processes whereby realistic objectives are set, and leadership processes that demonstrate a high level of confidence and trust between superiors and subordinates.

Although Likert did not advocate a specific span of control or form of departmentalization (he admitted that these and other design decisions depended on the situation), he argued that there were higher-level principles that should guide management decisions in the design of an organization. Likert advocated three universal principles: (1) the principle of supportive relationships, (2) the use of group decision making and group methods of supervision, and (3) the creation of high performance goals.

1. The *principle of supportive relationships* says that all employees should be treated in ways that build and maintain their sense of personal worth and importance.⁹ All interactions between superiors and subordinates must be such that the subordinate sees the experience as one that contributes to a sense of personal worth and importance and one that increases and maintains a sense of significance and human dignity. Likert assessed the degree to which relationships are supportive by asking such questions as how much confidence and trust do you feel your superior has in you? To what extent does your boss convey to you a feeling of confidence that you can do your job successfully? And to what extent is your boss interested in helping you to achieve and maintain a good income?
2. Likert believed that groups were universally superior to the traditional hierarchical control in decision making and leadership. System Four management involves management by groups and recognizes overlapping group membership; each supervisor of a group also serves as a subordinate in another group at the next level above. Those who hold overlapping memberships

are called *linking pins*. At each hierarchical level, all members of a work group who are affected by the outcome of a decision should be involved in it and it is the leader's responsibility to build an effective team. This principle has important implications for design decisions, since it encourages greater delegation of authority and coordination through the mutual adjustment of self-managing teams.

3. To achieve high levels of organizational performance, Likert argued that both managers and subordinates must have high performance aspirations. However, these high performance goals should not be imposed on employees. System Four provides a mechanism through group decision making and overlapping group memberships to set high-level goals that satisfy both individual and organizational aspirations.

Contingency Theories of Organizational Design

During the 1960s, the literature on organizational design shifted away from universal design theories to *contingency design theories* that tried to identify the appropriate design features for each situation. Contingency design theories focused largely on two factors: technology and environmental uncertainty. One line of research demonstrated that differences in technology determine the most effective organizational design, while the second suggested that differences in environmental uncertainty and the demands for processing information are the crucial factors.

Technology

Technology refers to the organization's transformation process and includes the knowledge, skills, abilities, machinery, and work procedures that are used in the transformation process. Every organization has a unique type of technology and Joan Woodward, a British industrial sociologist, demonstrated that an organization's technology should determine how it is designed.¹⁰ Her research surveyed 100 manufacturing firms on a wide range of structural characteristics, such as span of control, levels of management, ratios of management to clerical workers, and management style. Her data also included measures of performance regarding economic success.

When they examined the relationships between structure and performance for all 100 companies, they found no relationships. However, when they divided the companies into three categories according to their technology, they found that the successful companies in each category had structures that fit their technology. The three technology groups were small-batch, such as a printing company, mass production, such as an assembly line firm, and continuous process, such as an oil refinery. In each of the three technology groupings, the successful firms had ratios and numbers that were close to the median, while the unsuccessful firms had ratios and numbers that were much higher or lower than the median. Successful small-batch and continuous process organizations tended to have organic structures, while successful mass production organizations tended to have mechanistic structures.

Other research has likewise shown that an organization's structure needs to match the routineness of its processes. Routineness refers to the degree of continuity, automation, and rigidity in the production process. The technology is extremely routine when the production process is totally automated and highly mechanized and produces a consistent throughput. The structural variables most frequently analyzed in technology studies are centralization, formalization, and specialization, and all three of these variables are positively related to routineness. Although the relationships are influenced by the size of the

organization and the kind of product it produces, the research generally concludes that when the technology is highly routine (1) decision making should be centralized, (2) the rules and procedures should be formalized, and (3) the process should be decomposed and performed by specialized people and equipment.¹¹

Environmental Uncertainty

The degree of instability and uncertainty in the environment is another important situational variable that influences the appropriate type of organizational structure. Different organizational structures are required in order to cope with environmental uncertainty. Research is fairly consistent in indicating that organic structures tend to be most effective in uncertain environments while mechanistic structures are more effective in more stable environments. The classic study examining the effects of environmental uncertainty on organizational structure was conducted by Paul Lawrence and Jay Lorsch of Harvard University.¹²

Lawrence and Lorsch examined organizations in three industries: plastics, packaged food products, and paper containers. These three industries were selected because significant differences were found in the degree of environmental uncertainty. The environment of the plastics firms was extremely uncertain because of rapidly changing technology and customer demand. Decisions were required about new products even though feedback about the accuracy of the decisions often involved considerable delay. In contrast, the paper container firms faced a highly certain environment. Only minor changes in technology had occurred in the previous twenty years, and these firms focused on producing high-quality, standardized containers and delivering them to the customer quickly. The consequences of decisions could be ascertained in a short period. Between these two extremes, the producers of packaged foods faced a moderately uncertain environment.

In analyzing how these firms interacted with their environments, Lawrence and Lorsch identified two key concepts: differentiation and integration. **Differentiation** is the degree of segmentation of the organizational system into subsystems, which is similar to the concepts of specialization of labor and departmentalization. However, differentiation also considers the behavioral attributes of employees in highly specialized departments. As noted earlier, members of highly specialized functional departments tend to adopt a rather narrow-minded, department-oriented focus that emphasizes the achievement of departmental goals rather than organizational goals.

The consequence of high differentiation is that greater coordination between departments is required. More time and resources must be devoted to achieve coordination, since the attitudes, goals, and work orientations among highly specialized departments differ so widely. Lawrence and Lorsch developed the concept of **integration** to refer to this coordinating activity.

Lawrence and Lorsch found that environmental uncertainty was related to the amount of differentiation and integration used in each industry. For example, the firms in the container industry faced a fairly certain environment, and they were fairly undifferentiated. Therefore, they tended to adopt a mechanistic structure. The most successful container companies were organized along functional lines with a highly centralized authority structure. Coordination was achieved through direct supervision with formal written schedules. A bureaucratic structure was consistent with the container industry's degree of environmental certainty.

In the plastics industry, however, where companies face an extremely uncertain environment, the most successful plastics companies adopted organic structures. A highly unstable environment required these companies to have a highly differentiated structure with highly specialized internal departments of marketing, production, and research and development, to deal with the uncertainty in the external environment. Coordination was achieved through mutual adjustment, ad hoc teams that cut across departments, and special coordinators who served as liaisons between departments. The most successful plastics firms achieved high levels of differentiation plus high levels of integration to coordinate them.

The study of Lawrence and Lorsch contributes to our understanding of organizational design by showing the effects of environmental uncertainty on organizational structure. When the environment is highly uncertain, frequent changes require more information processing to achieve coordination, so special integrators and coordinating mechanisms are a necessary addition to the organization's structure. Sometimes these integrators are called *liaison personnel*, *brand managers*, or *product coordinators*. Organizations that face a highly uncertain environment and a highly differentiated structure may have a fourth of their management personnel assigned to integration activities, such as serving on committees, task forces, or in liaison roles. Organizations that face very simple and stable environments, however, may not have anyone assigned to a full-time integration role.

The analysis of Lawrence and Lorsch can be extended from the organization to the departmental level within an organization. A large firm may find it necessary to organize its production department quite differently from its research department. One department may tend toward a mechanistic design and the other toward an organic design. The differences between these two departments are due to the differences in environments to which the two departments must adapt. For example, if a marketing department of a large firm faced an extremely unstable environment because of transportation problems across international boundaries, the marketing department would need to adopt an organic structure to respond to rapid developments. In contrast, the production department may face a very stable environment that allows for long production runs of standardized products. A mechanistic structure with formal bureaucratic procedures would be most appropriate for the production department.

Information Processing

The key integrating concept explaining the relationship between environmental uncertainty, technology, and organizational structure is the way the organization processes information.¹³ Information flows into the organization from various environmental sectors, and the organization must respond and adapt to this information. The more rapid the changes in the external environment, the greater the necessity for incoming information. The consequence of environmental uncertainty on managers is an increase in the flow of information that leads to a communication overload. In essence, the organization becomes inundated with exceptional cases requiring individual attention. As a greater number of non-routine demands are made on the organization from the environment, managers more and more are required to be involved in the day-to-day operations. Problems develop as plans become obsolete and the various coordination functions break down. An effective organization requires a structure that allows it to adapt to such a situation.

Organic structures can deal with greater amounts of uncertainty than mechanistic structures. Organic structures have more highly connected communication networks that permit the efficient use of individuals as problem solvers and increase the opportunity for feedback. Because highly connected

networks do not depend on any one individual, they are less sensitive to information overload or saturation. But while organic structures are able to deal effectively with greater amounts of uncertainty than mechanistic structures, there are costs associated with being able to process more information. Organic structures consume more time, effort, and energy and are less subject to managerial control. Thus, the benefits of increased efficiency and capacity to process information must be weighed against the costs of less control and greater effort and time.

Organizations in a dynamic and complex environment cannot rely on traditional information processing and control techniques where all information is communicated through a chain of command. Changes in market demand, uncertain resources, and new technology disrupt the organization's plans and require adjustments while the task is being performed. Immediate adjustments to production schedules and job assignments disrupt the organization. Coordination is made more difficult because it is impossible to forecast operations or revise standard operating rules or procedures. Organizations must obtain information that reflects the environmental changes.

Discussion Questions

- 1 Explain why the functional form of departmentalization tends to be the most efficient and why product departmentalization tends to be the most customer oriented. Provide specific examples.
- 2 It has been suggested that companies should turn their company charts upside down and put power in the hands of the front-line employees who deal directly with customers. What does it mean to turn an organization's chart upside down? Is this change just window dressing in the form of customer service or does it represent a significant change in decision making and responsibility?
- 3 What are the advantages and disadvantages of a matrix organizational design? When would you recommend using it or discourage using it?
- 4 In recent years, some organizations have thrown away their organization charts and disregarded formal lines of authority. These organizations are typically small, innovative companies that appear to be highly successful. Their success has caused some to suggest that all organizations need to get rid of their organization charts and formal structure. Do you agree? How important is organizational structure? Describe a situation when it would be appropriate to disregard organizational structure?
- 5 What are the major advantages of a bureaucracy? Does a bureaucracy deserve the negative reaction it provokes in most people? Describe a time in your life when you have experienced one of the dysfunctional consequences of a bureaucracy.
- 6 Explain why an unstable environment and extensive demands for information processing are more conducive to an organic structure. Provide illustrations of contrasting companies that stable and unstable environments and therefore need to be organized differently.

Notes

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