Part II
Organizational Design

Chapter 4

Basic Challenges of Organizational Design

Learning Objectives

If an organization is to remain effective as it changes and grows with its environment, managers must continuously evaluate the way their organizations are designed: for example, the way work is divided among people and departments, and the way it controls its human, financial, and physical resources. Organizational design involves difficult choices about how to control—that is, coordinate organizational tasks and motivate the people who perform them—to maximize an organization's ability to create value. This chapter examines the challenges of designing an organizational structure so that it achieves stakeholder objectives.

After studying this chapter you should be able to:

1. Describe the four basic organizational design challenges confronting managers and consultants.
2. Discuss the way in which these challenges must be addressed simultaneously if a high-performing organizational structure is to be created.
3. Distinguish among the design choices that underlie the creation of either a mechanistic or an organic structure.
4. Recognize how to use contingency theory to design a structure that fits an organization's environment.

DIFFERENTIATION

Design Challenge 1
People in this organization take on new tasks as the need arises and it's very unclear who is responsible for what, and who is supposed to report to whom. This makes it difficult to know on whom to call when the need arises and difficult to coordinate people's activities so they work together as a team.

As organizations grow, managers must decide how to control and coordinate the activities that are required for the organization to create value. The principal design challenge is how to manage differentiation to achieve organizational goals. **Differentiation** is the process by which an organization allocates people and resources to organizational tasks and establishes the task and authority relationships that allow the organization to achieve its goals.[1] In short, it is the process of establishing and controlling the **division of labor**, or degree of specialization, in the organization.

Differentiation The process by which an organization allocates people and resources to organizational tasks and establishes the task and authority relationships that allow the organization to achieve its goals.

Division of labor The process of establishing and controlling the degree of specialization in the organization.

An easy way to examine why differentiation occurs and why it poses a design challenge is to examine an organization and chart the problems it faces as it attempts to achieve its goals (see Figure 4-1). In a *simple* organization, differentiation is low because the division of labor is low. Typically, one person or a few people perform all

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organizational tasks, so there are few problems with coordinating who does what, for whom, and when. With growth, however, comes complexity. In a *complex* organization, both the division of labor and differentiation are high. The story of how the B.A.R. and Grille restaurant grew illustrates the problems and challenges that organizational design must address. As the B.A.R. and Grille changed, its owners had to find new ways to control the activities necessary to meet their goal of providing customers with a satisfying dining experience. (See Organizational Insight 4.1.)

ORGANIZATIONAL INSIGHT 4.1
B.A.R. and Grille Restaurant

In 1998, Bob and Amanda Richards (hence B.A.R.) trained as chefs and obtained the capital they needed to open their own restaurant, the B.A.R. and Grille, a 1950s-style restaurant specializing in hamburgers, hot dogs, french fries, fresh fruit pies, and fountain drinks. At the beginning, with the help of one additional person hired to be a waiter, Bob and Amanda took turns cooking and waiting on tables (see Figure 4-1A). The venture was wildly successful. The combination of good food, served in a "Happy Days" atmosphere, appealed to customers, who swamped the restaurant at lunchtime and every night.

Right away Bob and Amanda were overloaded. They worked from dawn to midnight to cope with all the jobs that needed to be done: buying supplies, preparing the food, maintaining the property, taking in money, and figuring the accounts. It was soon clear that both Bob and Amanda were needed in the kitchen and that they needed additional help. They hired waiters, busboys, and kitchen help to wash the mountains of dishes. The staff worked in shifts, and by the end of the third month of operations Bob and Amanda were employing 22 people on a full- or part-time basis (Figure 4-1B).

With 22 staff members to oversee, the Richardses confronted a new problem. Because both of them were working in the kitchen, they had little time to oversee what was happening in the dining room. The waiters, in effect, were running the restaurant. Bob and Amanda had lost contact with the customers and no longer received their comments about the food and service. They realized that to make sure their standards of customer service were being met, one of them needed to take control of the dining room and supervise the waiters and busboys while the other took control of the kitchen. Amanda took over the dining room, and she and Bob hired two chefs to replace her in the kitchen. Bob oversaw the kitchen and continued to cook. The business continued to do well, so they increased the size of the dining room and hired additional waiters and busboys (Figure 4-1C).

It soon became clear that Bob and Amanda needed to employ additional people to take over specific tasks because they no longer had the time or energy to handle them personally. To control the payment system, they employed full-time cashiers. To cope with customers' demands for alcoholic drinks, they hired a lawyer, got a liquor license, and employed full-time bartenders. To obtain restaurant supplies and manage restaurant services such as cleaning and equipment maintenance, they employed a restaurant manager. The manager was also responsible for overseeing the restaurant on days when the owners took a well deserved break. By the end of its first year of operation, the B.A.R. and Grille had 50 full- and part-time employees, and the owners were seeking new avenues for expansion (Figure 4-1D).

Eager to use their newly acquired skills to create yet more value, the Richardses began to search for ideas for a new restaurant. Within 18 months they opened a waffle and pancake restaurant, and a year later they opened a pizza restaurant. With this growth, Bob and Amanda left their jobs in the B.A.R. and Grille. They hired shift managers to manage each restaurant, and they spent their time managing central support functions such as purchasing, marketing, and accounting, training new chefs, and developing menu and marketing plans (Figure 4-1E). To ensure that service and quality were uniformly excellent at all three restaurants, they developed written rules and procedures that told chefs, waiters, and other employees what was expected of them—for example, how to prepare and present food and how to behave with customers. After five years of operation, they employed over 150 people full or part time in their three restaurants, and their sales volume was over $2 million a year.

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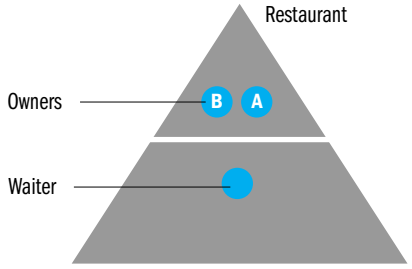
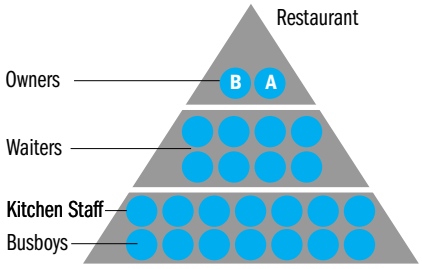
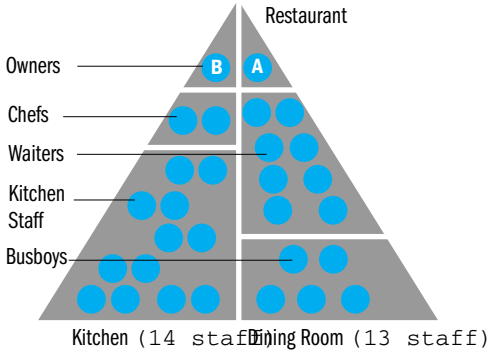
A. Bob and Amanda, the owners, cook and wait tables as needed. They employ one additional waiter. (3 individuals in the organization)



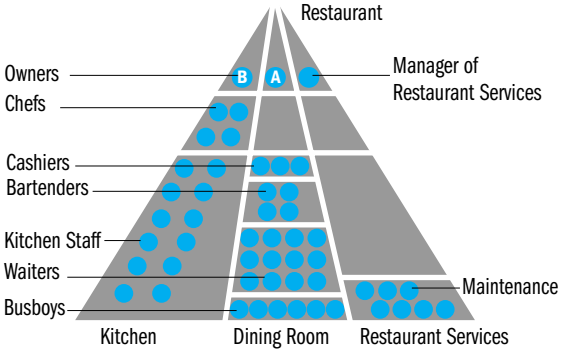
B. Bob and Amanda work in the kitchen full-time. They hire waiters, busboys, and kitchen staff. (22 individuals in the organization)



C. Unable to manage both the kitchen and the dining room, they divide tasks into two functions, kitchen and dining room, and specialize. Bob runs the kitchen, and Amanda runs the dining room. They also add more staff. (29 individuals in the organization)



D. The business continues to prosper. Bob and Amanda create new tasks and functions and hire people to manage the functions. (52 individuals in the organization)



E. The Richardses see new opportunities to apply their core competences in new restaurant ventures. They open new restaurants, put support functions like purchasing and marketing under their direct control, and hire shift managers to manage the kitchen and dining room in each restaurant. (150 individuals in the organization)

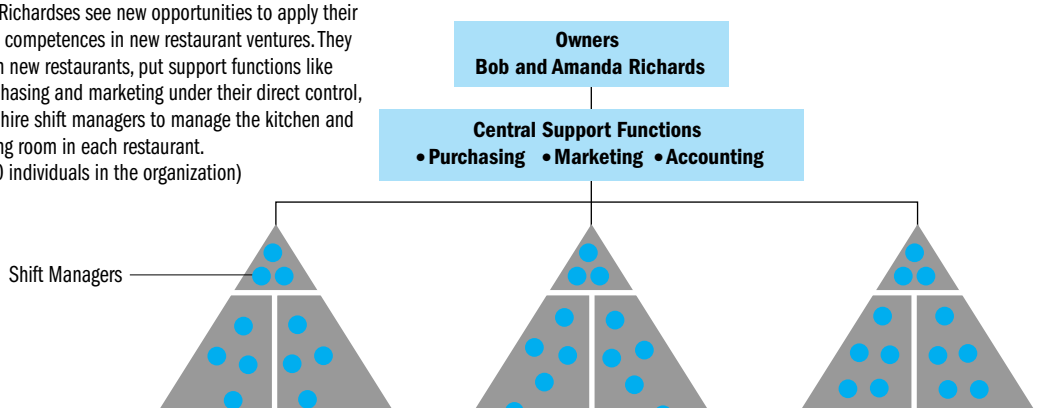


Figure 4-1 Design Challenge.

Differentiation at the B.A.R. and Grille.

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The basic design challenge facing the owners of the B.A.R. and Grille was managing the increasing complexity of the organization's activities. At first, Bob and Amanda performed all the major organizational tasks themselves, and the division of labor was low. As the volume of business grew, the owners needed to increase the division of labor and decide which people would do which jobs. In other words, they had to differentiate the organization and allocate people and resources to organizational tasks.

Organizational Roles

Organizational role
The set of task-related behaviors required of a person by his or her position in an organization.

The basic building blocks of differentiation are organizational roles (see Figure 4-2). An **organizational role** is a set of task-related behaviors required of a person by his or her position in an organization.[2] For example, the organizational role of a B.A.R. and Grille waiter is to provide customers with quick, courteous service to enhance their dining experience. A chef's role is to provide customers with high-quality, appetizing, cooked-to-order meals. A person who is given a role with identifiable tasks and responsibilities can be held accountable for the resources used to accomplish the duties of that position. Bob and Amanda held the waiter responsible for satisfying customers, the restaurant's crucial stakeholder group. The chef was accountable for providing high-quality meals to customers consistently and speedily.

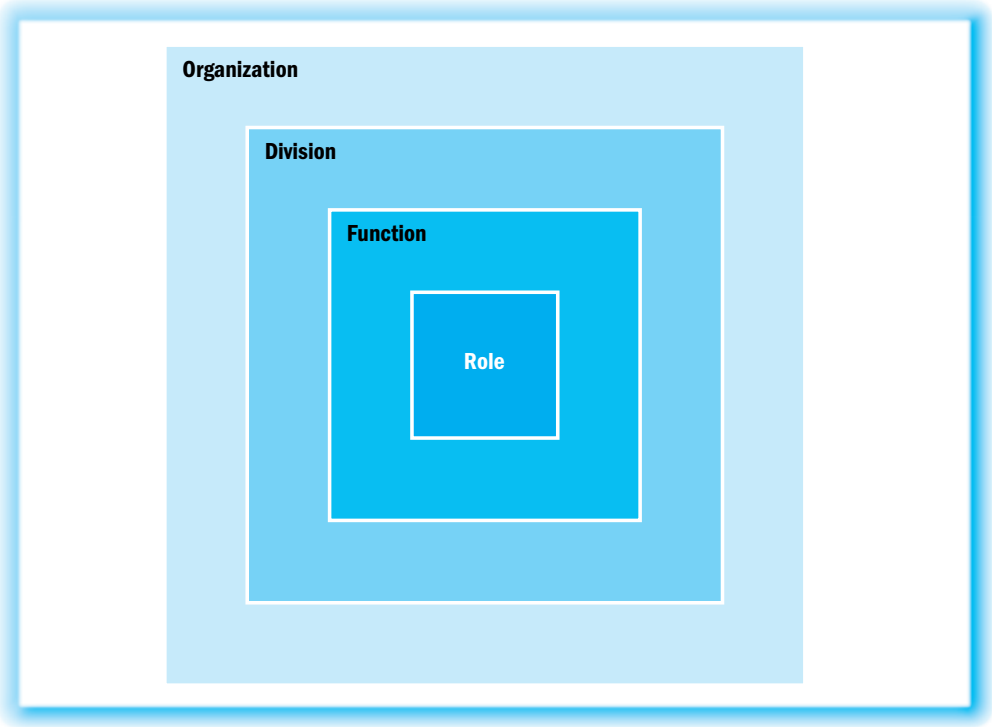

Figure 4-2 Building Blocks of Differentiation.

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As the division of labor increases in an organization, managers specialize in some roles and hire people to specialize in others. Specialization allows people to develop their individual abilities and knowledge, which are the ultimate source of an organization's core competences. At the B.A.R. and Grille, for example, the owners identified various tasks to be done, such as cooking, bookkeeping, and purchasing, and hired people with the appropriate abilities and knowledge to do them.

Organizational structure is based on a system of interlocking roles, and the relationship of one role to another is defined by task-related behaviors. Some roles require people to oversee the behavior of others: Shift managers at the B.A.R. and Grille oversee the waiters and busboys. A person who can hold another person accountable for his or her performance possesses authority over the other person. **Authority** is the power to hold people accountable for their actions and to make decisions concerning the use of organizational resources.[3] The differentiation of an organization into individual organizational roles results in clear authority and responsibility requirements for each role in the system. When an individual clearly understands the responsibilities of his or her role and what a superior can require of a person in that role, the result within the organization is **control**—the ability to coordinate and motivate people to work in the organization's interests.

Authority The power to hold people accountable for their actions and to make decisions concerning the use of organizational resources.

Control The ability to coordinate and motivate people to work in the organization's interests.

Subunits: Functions and Divisions

In most organizations, people with similar and related roles are grouped into a subunit. The main subunits that develop in organizations are functions (or departments) and divisions. A **function** is a subunit composed of a group of people, working together, who possess similar skills or use the same kind of knowledge, tools, or techniques to perform their jobs. For example, in the B.A.R. and Grille, chefs are grouped together as the kitchen function, and waiters are grouped together as the dining room function. A **division** is a subunit that consists of a collection of functions or departments that share responsibility for producing a particular good or service. Take another look at Figure 4-1E. Each restaurant is a division composed of just two functions—dining room and kitchen—which are responsible for the restaurant's activities. Large companies like General Electric, Textron, and Procter & Gamble have dozens of separate divisions, each one responsible for producing a particular product. Procter & Gamble faces the problem of how to organize these divisions on a global level so the company could create the most value, an issue discussed in detail in Chapter 8.

Function A subunit composed of a group of people, working together, who possess similar skills or use the same kind of knowledge, tools, or techniques to perform their jobs.

Division A subunit that consists of a collection of functions or departments that share responsibility for producing a particular good or service.

The number of different functions and divisions that an organization possesses is a measure of the organization's complexity—its degree of differentiation. Differentiation into functions and divisions increases an organization's control over its activities and allows the organization to accomplish its tasks more effectively.

As organizations grow in size, they differentiate into five different kinds of functions.[4] **Support functions** facilitate an organization's control of its relations with its environment and its stakeholders. Support functions include *purchasing,* to handle the acquisition of inputs; *sales and marketing,* to handle the disposal of outputs; and *public relations and legal affairs,* to respond to the needs of outside stakeholders. Bob and Amanda Richards hired a manager to oversee purchasing for all three restaurants and an accountant to manage the books (see Figure 4-1E).

Support functions Functions which facilitate an organization's control of its relations with its environment and its stakeholders.

Production functions manage and improve the efficiency of an organization's conversion processes so that more value is created. Production functions include *production operations, production control,* and *quality control.* At Ford, the production oper-

Production functions Functions which manage and improve the efficiency of an organization's conversion processes so that more value is created.

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ations department controls the manufacturing process; production control decides on the most efficient way to produce cars at the lowest cost; and quality control monitors product quality.

Maintenance functions Functions which enable an organization to keep its departments in operation.

Maintenance functions enable an organization to keep its departments in operation. Maintenance functions include *personnel,* to recruit and train workers and improve skills; *engineering,* to repair broken machinery; and *janitorial services,* to keep the work environment safe and healthy—conditions that are very important to a restaurant like the B.A.R. and Grille.

Adaptive functions Functions which allow an organization to adjust to changes in the environment.

Adaptive functions allow an organization to adjust to changes in the environment. Adaptive functions include *research and development, market research,* and *long-range planning,* which allow an organization to learn from and attempt to manage its environment and thus increase its core competences. At the B.A.R. and Grille, developing new menu choices to keep up with customers' changing tastes is an important adaptive activity.

Managerial functions Functions which facilitate the control and coordination of activities within and among departments.

Managerial functions facilitate the control and coordination of activities within and among departments. Managers at different organizational levels direct the *acquisition of, investment in, and control of resources* to improve the organization's ability to create value. Top management, for example, is responsible for formulating strategy and establishing the policies the organization uses to control its environment. Middle managers are responsible for managing the organization's resources to meet its goals. Lower level managers oversee and direct the activities of the work force.

Differentiation at the B.A.R. and Grille

In the B.A.R. and Grille, differentiation at first was minimal. The owners, with the help of one other person, did all the work. But with unexpected success came the need to differentiate activities into separate organizational roles and functions, with Bob managing the kitchen and Amanda the dining room. As the restaurant continued to grow, Bob and Amanda were confronted with the need to develop skills and capabilities in the five functional areas. For the support role they hired a restaurant services manager to take charge of purchasing supplies and local advertising. To handle the production role, they increased the division of labor in the kitchen and dining room. They hired cleaning staff, cashiers, and an external accountant for maintenance tasks. They themselves handled the adaptive role of ensuring that the organization served customer needs. Finally, Bob and Amanda took on the managerial role of establishing the pattern of task and functional relationships that most effectively accomplished the restaurant's overall task of serving customers good food. Collectively, the five functions constituted the B.A.R. and Grille and gave it the ability to create value.

As soon as the owners decided to open new kinds of restaurants and expand the size of their organization, they faced the challenge of differentiating into divisions, to control the operation of three restaurants simultaneously. The organization grew to three divisions, each of which made use of support functions centralized at the top of the organization (see Figure 4-1E). In large organizations each division is likely to have its own set of the five basic functions and is, thus, a *self-contained division.*

As we discussed in Chapter 1, functional skills and abilities are the source of an organization's *core competences,* the set of unique skills and capabilities that give an organization a competitive advantage.[5] An organization's competitive advantage may lie in any or all of an organization's functions. An organization could have superior low-cost production, exceptional managerial talent, or a leading research and development department.[6] A core competence of the B.A.R. and Grille was the way

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Bob and Amanda took control of the differentiation of their restaurant and increased its ability to attract customers who appreciated the good food and good service they received. In short, they created a core competence that gave their restaurant a competitive advantage over other restaurants. In turn, this competitive advantage gave them access to resources that allowed them to expand by opening new restaurants.

Vertical and Horizontal Differentiation

Figure 4-3 shows the organizational chart that emerged in the B.A.R. and Grille as differentiation unfolded. An organizational chart is a drawing that shows the end result of organizational differentiation. Each box on the chart represents a role or function in the organization. Each role has a vertical and a horizontal dimension.

The organizational chart *vertically* differentiates organizational roles in terms of the authority that goes with each role. A classification of people according to authority and rank is called a **hierarchy**. Roles at the top of an organization's hierarchy possess more authority and responsibility than do roles farther down in the hierarchy; each lower role is under the control or supervision of a higher one. Managers designing an organization have to make decisions about how much vertical differentiation to have

Hierarchy A classification of people according to authority and rank.

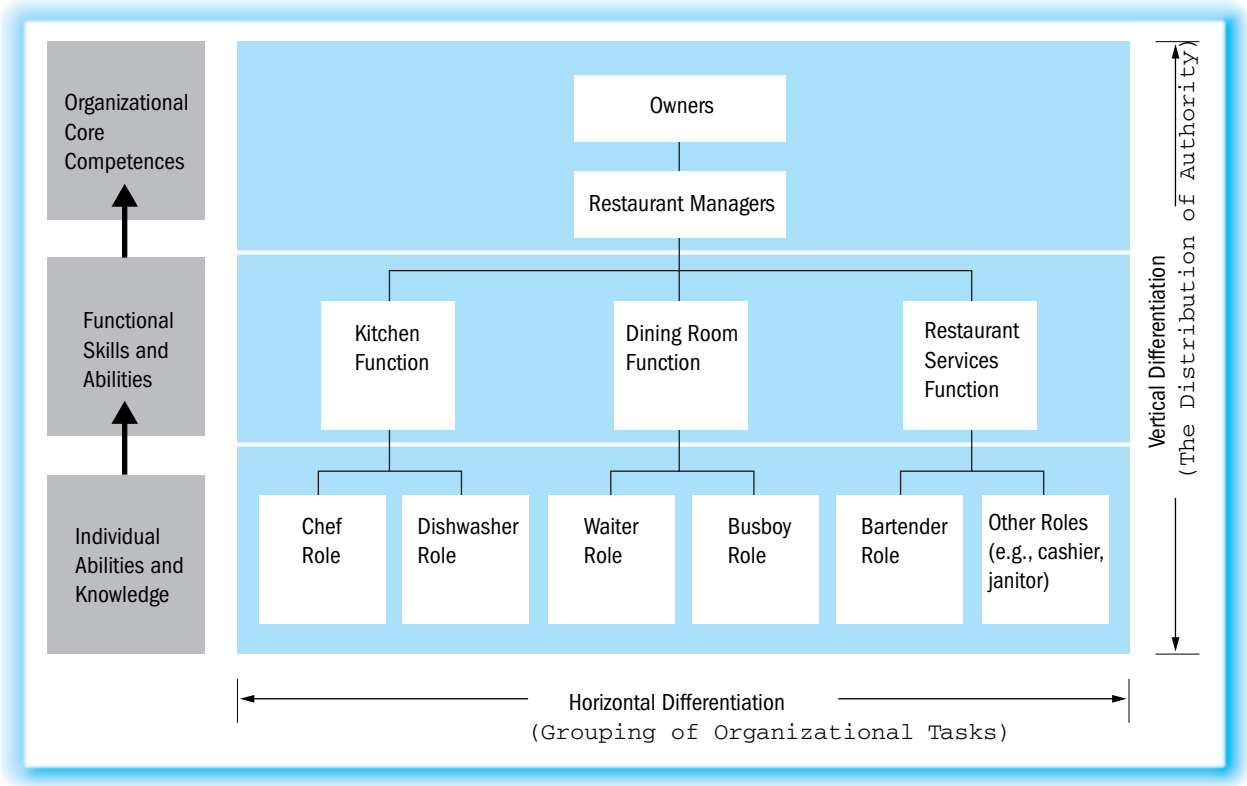

Figure 4-3 Organizational Chart of the B.A.R. and Grille.

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in the organization—that is, how many levels should there be from top to bottom. To maintain control over the various functions in the restaurant, for example, Bob and Amanda realized that they needed to create the role of restaurant manager. Because the restaurant manager would report to them and would supervise lower level employees, this new role added a level to the hierarchy. **Vertical differentiation** refers to the way an organization designs its hierarchy of authority and creates reporting relationships to link organizational roles and subunits.[7] Vertical differentiation establishes the distribution of authority between levels to give the organization more control over its activities and increase its ability to create value.

Vertical differentiation The way an organization designs its hierarchy of authority and creates reporting relationships to link organizational roles and subunits.

The organizational chart *horizontally* differentiates roles according to main task responsibilities. For example, when Bob and Amanda realized that a more complex division of tasks would increase restaurant effectiveness, they created new organizational roles—such as restaurant manager, cashier, bartender, and busboy—and grouped these roles into functions. **Horizontal differentiation** refers to the way an organization groups organizational tasks into roles and roles into subunits (functions and divisions).[8] Horizontal differentiation establishes the division of labor, which enables people in the organization to become more specialized and productive and increases the organization's ability to create value.

Horizontal differentiation The way an organization groups organizational tasks into roles and roles into subunits (functions and divisions).

Organizational Design Challenges

We have seen that the principal design challenge facing an organization is to choose the levels of vertical and horizontal differentiation that allow the organization to control its activities in order to achieve its goals. In Chapters 5 and 6 we examine some principles that guide these choices.

In the remainder of Chapter 4 we look at three more design challenges that confront managers attempting to create a structure that will maximize their organization's effectiveness (see Figure 4-4). The first of the three is how to link and coordinate organizational activities. The second is determining who will make decisions. The third is deciding which types of mechanisms are best suited to controlling specific employee tasks and roles. The choices managers make as they grapple with all three challenges determine how effectively their organization works.

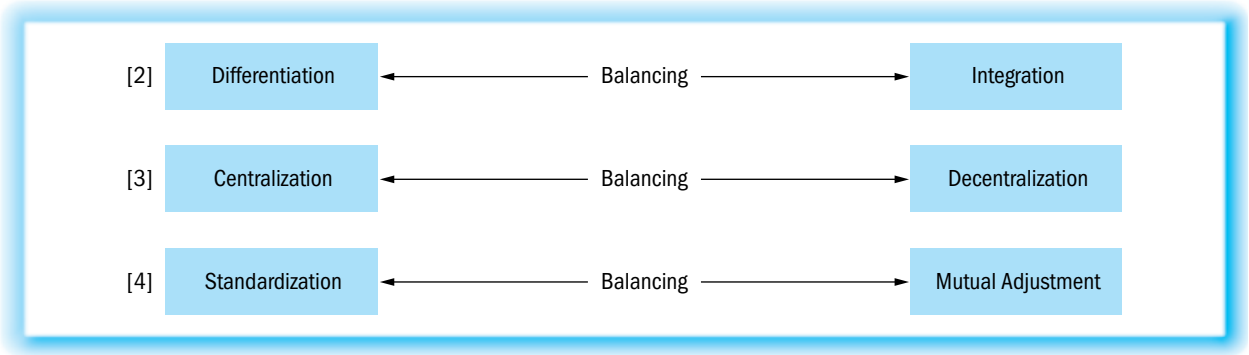

Figure 4-4 Organizational Design Challenges.

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MANAGERIAL IMPLICATIONS
Differentiation

1. No matter what your position in an organization is, draw an organizational chart so that you can identify the distribution of authority and the division of labor.
2. No matter how few or how many people you work with or supervise, analyze each person's role and the relationships among roles to make sure that the division of labor is best for the task being performed. If it is not, redefine role relationships and responsibilities.
3. If you supervise more than one function or department, analyze relationships among departments to make sure that the division of labor best suits the organization's mission: the creation of value for stakeholders.

BALANCING DIFFERENTIATION AND INTEGRATION

Design Challenge 2
We can't get people to communicate and coordinate in this organization. Specifying tasks and roles is supposed to help coordinate the work process, but here it builds barriers between people and functions.

Horizontal differentiation is supposed to enable people to specialize and thus become more productive. However, companies have often found that specialization limits communication between subunits and prevents them from learning from one another. As a result of horizontal differentiation, the members of different functions or divisions develop a **subunit orientation**—a tendency to view one's role in the organization strictly from the perspective of the time frame, goals, and interpersonal orientations of one's subunit.[9] For example, the production department is most concerned with reducing costs and increasing quality; thus it tends to have a short-term outlook because cost and quality are production goals that must be met daily. In research and development, on the other hand, innovations to the production process may take years to come to fruition; thus R&D people usually have a longer term outlook. When different functions see things differently, communication fails and coordination becomes difficult, if not impossible.

Subunit orientation
A tendency to view one's role in the organization strictly from the perspective of the time frame, goals, and interpersonal orientations of one's subunit.

To avoid the communication problems that can arise from horizontal differentiation, organizations try to find new or better ways to integrate functions—that is, to promote cooperation, coordination, and communication among separate subunits. Xerox uses its computer systems to find new ways for different functions to share databases, memos, and reports. Increasingly, companies are using electronic means of communication, like e-mail and teleconferencing, to bring different functions together. For example, buyers at Wal-Mart's home office use television linkups to show each store individually the appropriate way to display products for sale.

Integration and Integrating Mechanisms

How to facilitate communication and coordination among subunits is a major challenge for managers. One reason for problems on this front is that the development of subunit orientations makes communication difficult and complex, as we saw in the IBM example. Another reason for lack of coordination and communication is that

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Table 4-1 Types and Examples of Integrating Mechanisms

Integration Mechanism (in order of increasing complexity)	Description	Example (e.g., in Johnson & Johnson)
Hierarchy of authority	A ranking of employees integrates by specifying who reports to whom.	Salesperson reports to Diaper Division sales manager.
Direct contact	Managers meet face-to-face to coordinate activities.	Diaper Division sales and manufacturing managers meet to discuss scheduling.
Liaison role	A specific manager is given responsibility for coordinating with managers from other subunits on behalf of his or her subunit.	A person from each of J&J's production, marketing, and research and development departments is given responsibility for coordinating with the other departments.
Task force	Managers meet in temporary committees to coordinate cross-functional activities.	A committee is formed to find new ways to recycle diapers.
Team	Managers meet regularly in permanent committees to coordinate activities.	A permanent J&J committee is established to promote new-product development in the Diaper Division.
Integrating role	A new role is established to coordinate the activities of two or more functions or divisions.	One manager takes responsibility for coordinating Diaper and Baby Soap divisions to enhance their marketing activities.
Integrating department	A new department is created to coordinate the activities of functions or divisions.	A team of managers is created to take responsibility for coordinating J&J's centralization program to allow divisions to share skills and resources.

Integration The process of coordinating various tasks, functions, and divisions so that they work together and not at cross-purposes.

managers often fail to use the appropriate mechanisms to integrate organizational subunits. **Integration** is the process of coordinating various tasks, functions, and divisions so that they work together, not at cross purposes. Table 4-1 lists seven integrating mechanisms that managers can use as their organization's level of differentiation increases.[10] The simplest mechanism is a hierarchy of authority; the most complex is a department created specifically to coordinate the activities of diverse functions or divisions. The table includes examples of how a company like Johnson & Johnson might use all seven types of integration mechanisms as it goes about managing one major product line—disposable diapers. We will examine each mechanism separately.

Hierarchy of Authority

The simplest integrating device is an organization's hierarchy of authority, which differentiates people by how much authority they have. Because the hierarchy dictates who reports to whom, it coordinates various organizational roles. Managers must

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carefully divide and allocate authority within a function and between one function and others to promote coordination. For example, at Becton Dickinson, a high-tech medical instrument maker, the marketing and engineering departments were frequently squabbling over product specifications. Marketing argued that the company's products needed more features to please customers. Engineering wanted to simplify product design to reduce costs.[11] The two departments could not resolve their differences because the head of marketing reported to the head of engineering. To resolve this conflict, Becton Dickinson reorganized its hierarchy so that both marketing and engineering reported to the head of the Instrument Product Division. The head of the division was an impartial third party who had the authority to listen to both managers' cases and make the decision that was best for the organization as a whole.

Direct Contact

Direct contact between people in different subunits is an integrating mechanism that is more complex than a hierarchy of authority. The principal problem with integration across functions is that a manager in one function has no authority over a manager in another. Only the CEO or somebody else above the functional level has power to intervene if two functions come into conflict. Consequently, establishing personal relationships between people at all levels in different functions is an important step in overcoming the problems that arise because people (or groups, or departments) have different subunit orientations. Managers from different functions who have opportunities for direct contact with each other can work together to solve common problems. If disputes still arise, however, it is important for both parties to be able to appeal to a common superior who is not far removed from the scene of the problem.

Liaison Roles

When the need for communication among subunits increases, one member or a few members from a subunit are likely to have responsibility for coordinating with other subunits. The people who hold these connecting, or liaison, roles are able to develop in-depth relations with people in other subunits. This interaction helps overcome barriers between subunits. Over time, as the people in liaison roles learn to cooperate, they can become increasingly flexible in accommodating other subunits' requests. Figure 4-5A illustrates a liaison role.

Task Forces

As an organization increases in size and complexity, more than two subunits may need to work together to solve common problems. Increasing an organization's ability to serve its customers effectively, for example, may require input from production, marketing, engineering, and research and development. The solution commonly takes the form of a **task force**, a temporary committee set up to handle a specific problem (Figure 4-5B). One person from each function joins a task force, which meets until it finds a solution to the problem. Task force members are responsible for taking the solution back to their functional groups for group input and approval. To increase the effectiveness of task forces, a senior manager from outside all the functions involved usually chairs the meetings.

Task force A temporary committee set up to handle a specific problem.

Teams

When the issue a task force is dealing with becomes an ongoing strategic or administrative issue, the task force becomes permanent. A *team* is a permanent task force or committee. Most companies, for example, now have product development and cus-

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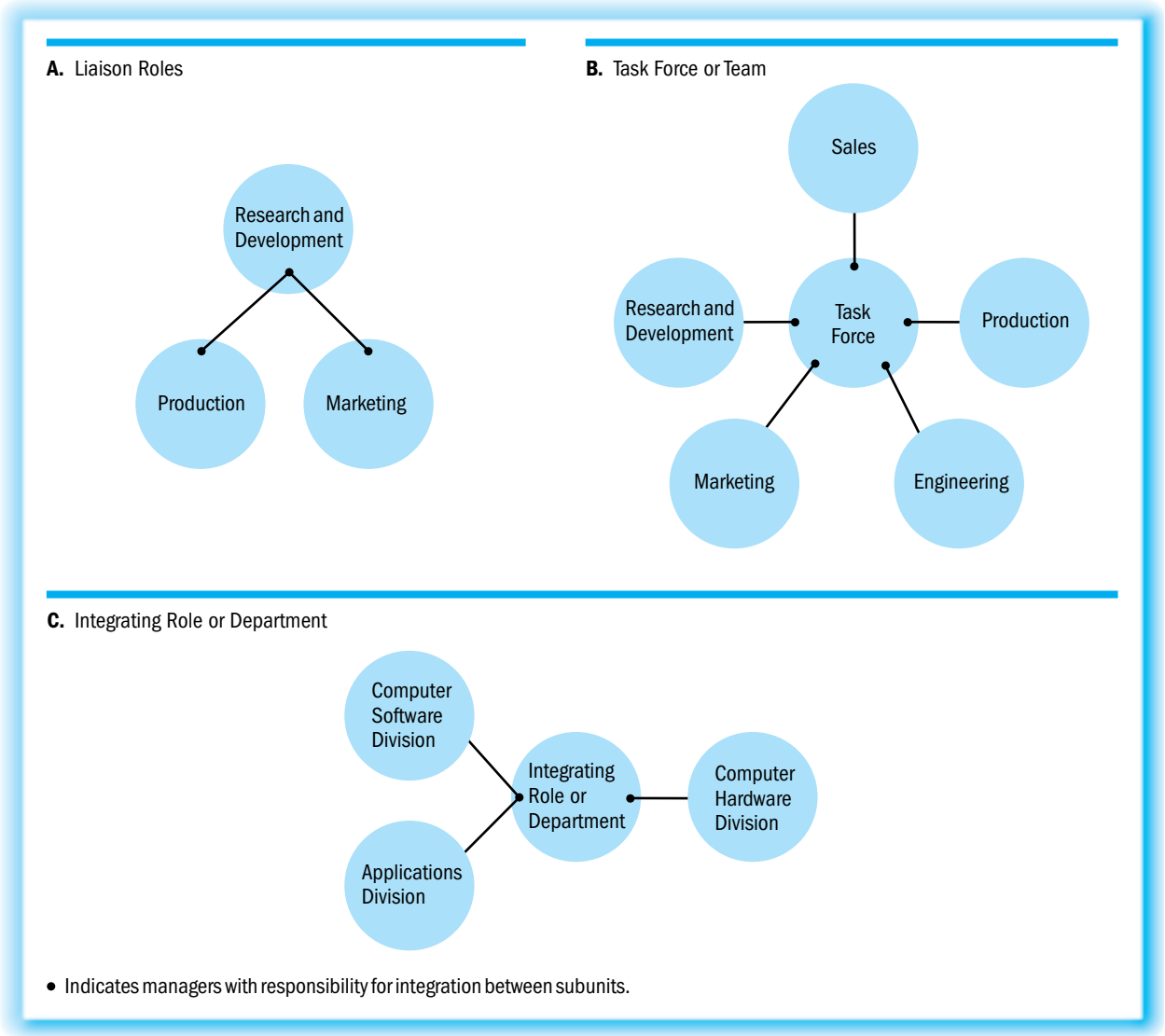

Figure 4-5 Integrating Mechanisms.

tomer contact teams to respond to the threat of increased competition in a global market. Such teams, once a rarity, are now a vital part of most successful U.S. organizations. At Amgen, for example, the team system is proving to be an important factor in the company's success. (See Organizational Insight 4.2.)

Approximately 70 percent of a manager's time is spent in committee meetings.[12] Teams provide the opportunity for the face-to-face contact and continual adjustment that managers need to deal effectively with ongoing complex issues. As they set up teams, managers face the challenge of creating a committee system that gives them effective control over organizational activities. Very often teams are ineffective because the problems facing the organization change but team membership

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ORGANIZATIONAL INSIGHT 4.2
Integration at Amgen

Amgen is experiencing great success with its recombinant DNA drugs Epogen (an anemia drug) and Neupogen (an immune system stimulant). With Amgen's success has come growth, and the company is seeking new ways to integrate its employees so that it can preserve its small-company atmosphere, which is based on personal contact between employees. Amgen is relying on a team system to coordinate its people. It has devised two types of teams. Product development teams organize the whole process of bringing a new drug to market, and task forces handle other needs of the business down to the level of organizing the firm's annual picnic. The product development teams are composed of people from all areas of the company and report directly to top management. They meet daily or weekly, as needed, and at other times the team members return to their regular jobs in the organization. Any employee can join any team at any time, and in this way the company hopes to keep its levels of innovation and flexibility high.

Amgen prides itself on searching out new ways of organizing itself to minimize the need to standardize work activities. The company's goals are to maximize employees' opportunities to be innovative and to find new ways to integrate employees' skills to speed the development of new products to the market.[13] As Amgen continued to grow, however, it sensed some problems with its use of teams. Employees seemed to be more loyal to their teams than to their regular job assignments, and this situation was starting to cause communication problems between the teams and the regular functions. To control team activities and make sure that the teams coordinated effectively with the functions, Amgen started to fully integrate its teams into its hierarchy of authority to facilitate the flow of information.[14] Amgen has had considerable success with its new structure in the 1990s and has become a leading biotechnology company.

remains unchanged. People often fight to stay on a committee even when their services are no longer needed. Membership on a team gives a person power in the organization, but this power does not necessarily promote organizational goals. At Whirlpool, the appliance maker, CEO David Whitwam established hundreds of mini-management teams throughout the company to bring about change, improve quality control, and streamline production. Whitwam's goal? To use teams to change patterns of authority and decision making to increase interaction and promote creativity among managers.[15]

Integrating Roles or Departments

As organizations become large and complex, communication barriers between functions and divisions are likely to increase. Managers in different product divisions, for example, may never meet one another. In organizations that employ many thousands of people, coordinating subunits becomes especially difficult. One way to overcome these barriers is to create integrating roles that coordinate subunits. An **integrating role** is a full-time position established specifically to improve communication between divisions. (A liaison role, by contrast, is part of a person's full-time job.) Figure 4-5C shows an integrating role that might exist in a large computer company like Compaq or Apple.

Integrating role A full-time position established specifically to improve communication between divisions.

The purpose of an integrating role is to promote the sharing of information and knowledge to enhance organizational goals such as innovation and product development, increased flexibility, and heightened customer service. People in integrating roles are often senior managers who have decided to give up authority in a specific function and focus on integration. They often chair task forces and teams and report directly to top management.

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When a company has many employees in integrating roles, it creates an integrating department, which coordinates the activities of subunits. Du Pont, the chemical company, has a department that employs over 200 people in integrating roles. In general, the more complex and highly differentiated an organization is, the more complex are the integration mechanisms needed to overcome communication and coordination barriers between functions and divisions.

Differentiation versus Integration

The design issue facing managers is to establish a level of integration that matches the organization's level of differentiation. Managers must achieve an appropriate balance between differentiation and integration. A highly complex organization that is highly differentiated needs a high level of integration to effectively coordinate its activities. By contrast, an organization that has a relatively simple, clearly defined role structure normally needs to use only simple integrating mechanisms. Its managers may find that the hierarchy of authority provides all the control and coordination they need to achieve organizational goals.

At all costs, managers need to be sure they do not differentiate or integrate their organization too much. Differentiation and integration are both expensive in terms of the number of managers employed and the amount of managerial time spent on coordinating organizational activities. For example, every hour that employees spend on committees that are not really needed costs the organization thousands of dollars because the employees are not being put to their most productive use.

Managers facing the challenge of deciding how and how much to differentiate and integrate must do two things: (1) carefully guide the process of differentiation so that it develops the core competences that give the organization a competitive advantage; and (2) carefully integrate the organization by choosing appropriate integrating mechanisms that allow subunits to cooperate and that build up the organization's core competences.[16]

BALANCING CENTRALIZATION AND DECENTRALIZATION

Design Challenge 3
People in this organization don't take responsibility or risks. They are always looking to the boss for direction and supervision. As a result, decision making is slow and cumbersome, and we miss out on a lot of opportunities to create value.

In discussing vertical differentiation, we noted that establishing a hierarchy of authority is supposed to improve the way an organization functions because people can be held accountable for their actions and because the hierarchy defines the area of each person's authority within the organization. Many companies, however, complain that when a hierarchy of authority exists, people are constantly looking to their superiors for directions.[17] When something new or unusual occurs, they prefer to let it pass, or they pass it on to their superior rather than assume responsibility and take the risk of dealing with it. As responsibility and risk taking decline, so does organizational performance because the organization does not exploit new opportunities for using its core competences. When nobody is willing to take responsibility, decision making becomes slow and the organization becomes inflexible—that is, unable to change and adapt to new developments.

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At Levi Strauss, for example, workers often told former CEO Roger Sant that they felt they couldn't do something because "*They* wouldn't like it." When asked who "they" were, workers had a hard time saying; nevertheless, the workers felt that they did not have the authority or responsibility to initiate changes. Sant started a "Theybusters" campaign to renegotiate authority and responsibility relationships so that workers and managers could take on new responsibilities.[18] The solution involved decentralizing authority so that employees at low levels in the hierarchy had authority to decide on issues within their control. The issues of how much to centralize or decentralize the authority to make decisions offers a basic design challenge for all organizations.

Centralization versus Decentralization of Authority

Authority gives one person the power to hold other people accountable for their actions and the right to make decisions about the use of organizational resources.

As we saw in the B.A.R. and Grille example, vertical differentiation involves choices about how to distribute authority. But even when a hierarchy of authority exists, the problem of how much decision-making authority to delegate to each level must be solved.

It is possible to design an organization in which managers at the top of the hierarchy have all power to make important decisions. Subordinates take orders from the top, are accountable for how well they obey those orders, and have no authority to initiate new actions or use resources for purposes that they believe are important. When the authority to make important decisions is retained by managers at the top of the hierarchy, authority is said to be highly **centralized**.[19] By contrast, when the authority to make important decisions about organizational resources and to initiate new projects is delegated to managers at all levels in the hierarchy, authority is highly **decentralized**.

Centralized Organizational setup whereby the authority to make important decisions is retained by managers at the top of the hierarchy.

Decentralized An organizational setup whereby the authority to make important decisions about organizational resources and to initiate new projects is delegated to managers at all levels in the hierarchy.

Each alternative has certain advantages and disadvantages. The advantage of centralization is that it lets top managers coordinate organizational activities and keep the organization focused on its goals. Centralization becomes a problem, however, when top managers become overloaded and so involved in operational decision making about day-to-day resource issues (such as hiring people and obtaining inputs) that they have no time for long-term strategic decision making about future organizational activities (such as deciding on the best strategy to compete globally).

The advantage of decentralization is that it promotes flexibility and responsiveness by allowing lower level managers to make on-the-spot decisions. Managers remain accountable for their actions but have the opportunity to assume greater responsibilities and take potentially successful risks. Also, when authority is decentralized, managers can make important decisions that allow them to demonstrate their personal skills and competences and may be more motivated to perform well for the organization. The downside of decentralization is that if so much authority is delegated that managers at all levels can make their own decisions, planning and coordination become very difficult and the company may lose control of its decision-making process. Organizational Insight 4.3 reveals many of the issues surrounding this design choice.

As these examples suggest, the design challenge for managers is to decide on the correct balance between centralization and decentralization of decision making in an organization. If authority is too decentralized, managers have so much freedom that they can pursue their own functional goals and objectives at the expense of the organization's. On the other hand, if authority is too centralized and top management

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ORGANIZATIONAL INSIGHT 4.3
Centralize or Decentralize?

Is it best to centralize or decentralize authority? It depends on the situation, as the following examples illustrate. In 1998, the United Way was suffering from a public perception that it was spending too much of the donations it received on itself and not enough for the needy people it was set up to serve. The solution? It called in management consultants who recommended that the best way to save money and increase efficiency was to reduce the number of local organizations, and centralize many business functions such as data processing, marketing, and wealthy donor programs. However, many local organizations then became concerned that they would receive a smaller share of donations. To date the United Way is still working out the right balance between centralization and decentralization.[20]

Managers at Union Pacific Railroad, in response to complaints from customers and employees about traffic bottlenecks and poor quality service, made a radical decision. They would abandon the company's centralized operating system and decentralize authority to regional managers who could make on-the-spot decisions.[21] The result? A significant increase in efficiency as the penalties it was forced to pay its customers for late shipments declined sharply.[22]

To reduce disposal costs and save money, managers at a waste management plant decided to deliberately turn off the plant's pollution-monitoring equipment. Soon after this decision was made, a container of chemicals exploded, and the company's managers were also accused of mislabeling up to a hundred barrels of hazardous waste to avoid disposal costs. Although top managers blamed local management for these problems and denied any knowledge of the situation, the decentralized management style of the company was blamed for the problems. According to former company managers, top managers took no interest in the plant's operations and put local management under intense pressure to reduce costs. The combination of decentralized control and bottom-line pressure led to the problems that occurred. The plant's top managers claimed that Waste Management's attitude was "Don't tell us what's going on; just keep turning out the profit."[23]

makes all important organizational decisions, managers lower down in the hierarchy become afraid to make new moves and lack the freedom to respond to problems as they arise in their own groups and departments. The ideal situation is a balance between centralization and decentralization of authority so that middle and lower managers who are at the scene of the action are allowed to make important decisions, and top managers' primary responsibility becomes managing long-term strategic decision making. The result is a good balance between long-term strategy making and short-term flexibility and innovation as lower level managers respond quickly to problems and changes in the environment as they occur.

Why were the Levi Strauss managers so reluctant to take on new responsibilities and assume extra authority? A previous management team had centralized authority so that it could retain day-to-day control over important decision making. The company's performance suffered, however, because in spending all their time on day-to-day operations, top managers lost sight of changing customer needs and evolving trends in the clothing industry. The new management team that took over in the 1990s recognized the need to delegate authority for operational decision making to lower level managers so that top management could concentrate on long-term strategic decision making. Consequently, top management decentralized authority until they believed they had achieved the correct balance.

As noted earlier, the way managers and workers behave in an organization is a direct result of managers' decisions about how the organization is to operate.

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Managers who want to discourage risk taking and to maximize control over subordinates' performance centralize authority. Managers who want to encourage risk taking and innovation decentralize authority. In the army, for example, the top brass generally wishes to discourage lower level officers from acting on their own initiative, for if they did, the power of centralized command would be gone and the army would splinter. Consequently, the army has a highly centralized decision-making system that operates by strict rules and with a well defined hierarchy of authority. By contrast, at Becton Dickson, the medical equipment maker, authority is decentralized, and employees are provided with a broad framework within which they are free to make their own decisions and take risks, as long as they are consistent with the company's master plan. High-tech companies generally decentralize authority because decentralization encourages innovation and risk taking.

Decisions about how to distribute decision-making authority in an organization change as the organization changes—that is, as it grows and differentiates. How to balance authority is not a design decision that can be made once and forgotten; it must be made on an ongoing basis and is one part of the managerial task. We examine this issue in more detail in Chapters 5 and 6.

BALANCING STANDARDIZATION AND MUTUAL ADJUSTMENT

Design Challenge 4
People in this organization pay too much attention to the rules. Whenever I need somebody to satisfy an unusual customer request or need real quick service from another function, I can't get it because no one is willing to bend or break the rules.

Written rules and standard operating procedures (SOPs) and unwritten values and norms help to control behavior in organizations. They specify how an employee is to perform his or her organizational role, and they set forth the tasks and responsibilities associated with that role. Many companies, however, complain that employees tend to follow written and unwritten guidelines too rigidly instead of adapting them to the needs of a particular situation. Strictly following rules may stifle innovation; rules specifying how decisions are to be made leave no room for creativity and imaginative responses to unusual circumstances. As a result, decision making becomes inflexible, innovation is stifled, and organizational performance suffers.

IBM, for example, was traditionally a company respected for being close to its customers and responsive to their needs. But as IBM grew, it standardized responses to customers' requests, and its sales force was instructed to sell certain kinds of machines to certain kinds of customers, regardless of what the customer needed.[24] Standardizing operations had become more important than giving customers what they wanted. Moreover, internal communication among IBM's divisions and functions was increasingly conducted in accordance with formal rules rather than by relatively informal direct contact. These rigid patterns of communication slowed product development and ultimately resulted in dissatisfied customers.

The challenge facing all organizations, large and small, is to design a structure that achieves the right balance between standardization and mutual adjustment.

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Standardization Conformity to specific models or examples—defined by sets of rules and norms—that are considered proper in a given situation.

Mutual adjustment The compromise that emerges when decision making and coordination are evolutionary processes and people use their judgment rather than standardized rules to address a problem.

Formalization The use of written rules and procedures to standardize operations.

Standardization is conformity to specific models or examples—defined by sets of rules and norms—that are considered proper in a given situation. Standardized decision-making and coordination procedures make people's actions predictable in certain circumstances.[25] **Mutual adjustment** is the process through which people use their judgment rather than standardized rules to address problems, guide decision making, and promote coordination. The right balance makes some actions predictable so that basic organizational tasks and goals are achieved, yet it gives employees the freedom to behave flexibly so that they can respond to new and changing situations creatively.

Formalization: Written Rules

Formalization is the use of written rules and procedures to standardize operations.[26] In an organization in which formalization and standardization are extensive—for example, the military, FedEx, or UPS—everything is done by the book. There is no room for mutual adjustment; rules specify how people are to perform their roles and how decisions are to be made, and employees are accountable for following the rules. Moreover, employees have no authority to break the rules. A high level of formalization typically implies centralization of authority. A low level of formalization implies that coordination is the product of mutual adjustment among people across organizational functions and that decision making is a dynamic process in which employees apply their skills and abilities to respond to change and solve problems. Mutual adjustment typically implies decentralization of authority because employees must have the authority to commit the organization to certain actions when they make decisions.

In the 1990s IBM began fostering mutual adjustment to increase the flexibility of its decision making.[27] In five years, IBM underwent four major structural reorganizations designed to make the organization less formalized and more decentralized. IBM has used IT to promote its new decentralized global strategy and is performing at a high level.

Socialization: Understood Norms

Rules Formal, written statements that specify the appropriate means for reaching desired goals.

Norms Standards or styles of behavior that are considered acceptable or typical for a group of people.

Rules are formal, written statements that specify the appropriate means for reaching desired goals. As people follow rules, they behave in accordance with certain specified principles. **Norms** are standards or styles of behavior that are considered typical for a group of people. People follow a norm because it is a generally agreed-upon standard for behavior. Many norms arise informally as people work together over time. In some organizations it is the norm that people take an hour and a quarter for lunch, despite a formally specified one-hour lunch break. Over time, norms become part of peoples' way of viewing and responding to a particular situation.

Although many organizational norms—such as always behaving courteously to customers and leaving the work area clean—promote organizational effectiveness, many do not. Studies have shown that groups of workers can develop norms that reduce performance. Several studies have found that workers can directly control the pace or speed at which work is performed by imposing informal sanctions on workers who break the informal norms governing behavior in a work group. A worker who works too quickly (above group productivity norms) is called a "ratebuster," and a worker who works too slowly (below group norms) is called a "chiseler."[28] Having established a group norm, workers actively enforce it by physically and emotionally punishing violators.

This process occurs at all levels in the organization. Suppose a group of middle managers has adopted the norm of not rocking the organizational boat. A new man-

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ager who enters the picture will soon learn from the others that rocking the boat doesn't pay, or the other managers will find ways to punish the new person for violating the norm and trying to rock the boat—even if a little shaking up is what the organization really needs. Even a new manager who is high in the hierarchy will have difficulty changing the informal norms of the organization.

The taken-for-granted way in which norms affect behavior has another consequence for organizational effectiveness. We noted in the Levi Strauss example that even when an organization changes formal work rules, the behavior of people does not change quickly. Why is behavior rigid when rules change? The reason is that rules may be internalized and become part of a person's psychological makeup so that external rules become internalized norms. When this happens, it is very difficult for people to break a familiar rule and follow a new rule. They slip back into the old way of behaving. Consider, for example, how difficult it is to keep new resolutions and break bad habits.[29]

Paradoxically, an organization often wants members to buy into a particular set of corporate norms and values. IBM and Intel, for example, cultivate technical and professional norms and values as a means of controlling and standardizing the behavior of highly skilled organizational members. However, once norms are established, they are very difficult to change. And when the organization wants to pursue new goals and foster new norms, people find it difficult to alter their behavior. There is no easy solution to this problem. At Levi Strauss, organizational members had to go through a major period of relearning before they understood that they did not need to apply the old set of internalized norms. IBM underwent major upheavals to unlearn its old, conservative norms and IT helped it develop new ones that encourage innovation and responsiveness to customers.

The name given to the process by which organizational members learn the norms of an organization and internalize these unwritten rules of conduct is **socialization**.[30] In general, organizations can encourage the development of *standardized* responses or *innovative* ones. These issues are examined in more detail in Chapter 7.

Socialization The process by which organizational members learn the norms of an organization and internalize these unwritten rules of conduct.

Standardization versus Mutual Adjustment

The design challenge facing managers is to find a way of using rules and norms to standardize behavior while at the same time allowing for mutual adjustment to provide employees with the opportunity to discover new and better ways of achieving organizational goals. Managers facing the challenge of balancing the need for standardization against the need for mutual adjustment need to keep in mind that, in general, people at higher levels in the hierarchy and in functions that perform complex, uncertain tasks rely more on mutual adjustment than on standardization to coordinate their actions. For example, an organization wants its accountants to follow standard practices in performing their tasks, but in R&D the organization may want to encourage risk taking that leads to innovation. Many of the integrating mechanisms discussed earlier, such as task forces and teams, can increase mutual adjustment by providing an opportunity for people to meet and work out improved ways of doing things. In addition, an organization can emphasize, as Levi Strauss did, that rules are not set in stone but are just convenient guidelines for getting work done. Managers can also promote norms and values that emphasize change rather than stability. For all organizational roles, however, the appropriate balance between these two variables is one that promotes creative and responsible employee behavior as well as organizational effectiveness as the experience of Amazon.com suggests.

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FOCUS ON NEW INFORMATION TECHNOLOGY
Amazon.com, Part 3

How did Jeff Bezos address these design challenges given his need to create a structure to manage an e-commerce business which operated through the Internet and never saw its customers, but whose mission was to provide customer's great selection at low prices? Since the success of his venture depended upon providing high quality customer responsiveness it was vital that customers found Amazon.com's 1-Click (SM) information system Internet software easy and convenient to use and his service reliable. So his design choices were driven by the need to ensure his software linked customers to the organization most effectively.

First, he quickly realized that customer support was the most vital link between customer and organization, so to ensure good customer service he decentralized control and empowered his employees to find a way of meeting customers needs quickly. Second, realizing that customers wanted the book quickly he moved quickly to develop an efficient distribution and shipping system. Essentially, his main problem was handling inputs into the system (customer requests) and outputs (delivered books). So, he developed information systems to standardize the work or throughput process to increase efficiency, but also encouraged mutual adjustment at the input or customer end to improve customers responsiveness—employees were able to manage exceptions such as lost orders or confused customers as the need arose. (Note that Amazon's information systems also play the dominant role in integrating across functions in the organization; they provide the backbone for the company's value creation activities.) Third, because Amazon.com employs a relatively small number of people—about 2,500 worldwide—Bezos was able to make great use of socialization to coordinate and motivate his employees. All Amazon.com employees are carefully selected and socialized by the other members of their functions so that they quickly learn their organizational roles and—most important—Amazon's important norm of providing excellent customer service. Finally, to ensure Amazon.com's employees are motivated to provide the best possible customer service, Bezos gives all employees stock in the company. Employees currently own 10 percent of their company. Amazon.com's rapid growth suggests that Bezos has designed an effective organizational structure.

MANAGERIAL IMPLICATIONS
The Design Challenges

1. To see whether there is enough integration between your department and the departments that you interact with the most, create a map of the principal integrating mechanisms in use. If there is not enough integration, develop new integrating mechanisms that will provide the extra coordination needed to improve performance.
2. Determine which levels in the managerial hierarchy have responsibility for approving which decisions. Use your findings to decide how centralized or decentralized decision making is in your organization. Discuss your conclusions with your peers, subordinates, and superior to ascertain whether the distribution of authority best suits the needs of your organization.
3. Make a list of your principal tasks and role responsibilities, then list the rules and SOPs that specify how you are to perform your duties. Using this information, decide how appropriate the rules and SOPs are, and suggest ways of changing them so that you can perform more effectively. If you are a manager, perform this analysis for your department to improve its effectiveness and to make sure the rules are necessary and efficient.
4. Be aware of the informal norms and values that influence the way members of your work group or department behave. Try to account for the origin of these norms and values and the way they affect behavior. Examine whether they fulfill a useful function in your organization. If they do, try to reinforce them. If they do not, develop a plan for creating new norms and values that will enhance effectiveness.

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MECHANISTIC AND ORGANIC ORGANIZATIONAL STRUCTURES

Each design challenge has implications for how an organization as a whole and the people in the organization behave and perform. Useful concepts for addressing the way in which management's responses to the challenges collectively influence how an organizational structure works are the concepts of mechanistic structure and organic structure.[31] The design choices that produce mechanistic and organic structures are contrasted in Figure 4-6 and discussed below.

Mechanistic Structures

Mechanistic structures are designed to induce people to behave in predictable, accountable ways. Decision-making authority is centralized, subordinates are closely supervised, and information flows mainly in a vertical direction down a clearly defined hierarchy. In a mechanistic structure the tasks associated with a role are also clearly defined. There is usually a one-to-one correspondence between a person and a task. Figure 4-7A depicts this situation. Each person is individually specialized and knows exactly what he or she is responsible for, and behavior inappropriate to the role is discouraged or prohibited.

Mechanistic structures Structures which are designed to induce people to behave in predictable, accountable ways.

At the functional level, each function is separate, and communication and cooperation among functions are the responsibility of someone at the top of the hierarchy. Thus, in a mechanistic structure, the hierarchy is the principal integrating mechanism

Mechanistic structures result when an organization makes these choices.	Organic structures result when an organization makes these choices.
• Individual Specialization Employees work separately and specialize in one clearly defined task.	• Joint Specialization Employees work together and coordinate their actions to find the best way of performing a task.
• Simple Integrating Mechanisms Hierarchy of authority is clearly defined and is the major integrating mechanism.	• Complex Integrating Mechanisms Task forces and teams are the major integrating mechanisms.
• Centralization Authority to control tasks is kept at the top of the organization. Most communication is vertical.	• Decentralization Authority to control tasks is delegated to people at all levels in the organization. Most communication is lateral.
• Standardization Extensive use is made of rules and SOPs to coordinate tasks, and work process is predictable.	• Mutual Adjustment Extensive use is made of face-to-face contact to coordinate tasks, and work process is relatively unpredictable.

Figure 4-6 How the Design Challenges Result in Mechanistic or Organic Structures.

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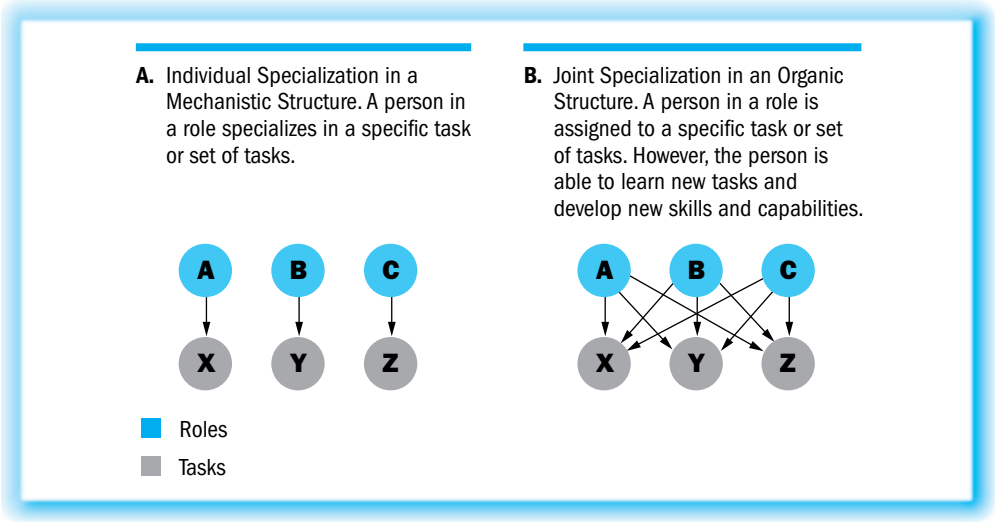

Figure 4-7 Task and Role Relationships.

both within and between functions. Because tasks are organized to prevent miscommunication, the organization does not need to use complex integrating mechanisms. Tasks and roles are coordinated primarily through standardization. Formal written rules and procedures specify role responsibilities, and standardization (together with the hierarchy) is the main means of organizational control.

Given this emphasis on the vertical command structure, the organization is very status conscious, and norms of "protecting one's turf" are common. Promotion is normally slow and steady, tied to performance. One's progress in the organization can be charted for years to come. Because of its rigidity, a mechanistic structure is best suited to organizations that face stable, unchanging environments.

Organic Structures

Organic structures Structures which promote flexibility, so people initiate change and can adapt quickly to changing conditions.

Organic structures are at the opposite end of the organizational design spectrum from mechanistic structures. **Organic structures** promote flexibility, so people initiate change and can adapt quickly to changing conditions.

Organic structures are decentralized; that is, decision-making authority is distributed throughout the hierarchy, and people assume the authority to make decisions as organizational needs dictate. Roles are loosely defined—people perform various tasks and continually develop skills in new activities. Figure 4-7B depicts this situation. Each person performs all three tasks, and the result is joint specialization and increased productivity. Employees from different functions work together to solve problems and become involved in each other's activities. As a result, a high level of integration is needed so that employees can share information and overcome problems caused by differences in subunit orientation. The integration of functions is achieved by means of complex mechanisms like task forces and teams (see Figure 4-5). Coordination is achieved through mutual adjustment as people and functions work

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out role definitions and responsibilities, and as rules and norms emerge from the ongoing interaction of organizational members.

In an organic structure informal norms and values develop that emphasize personal competence, expertise, and the ability to act in innovative ways. Status is conferred by the ability to provide creative leadership, not by any formal position in the hierarchy. The Sony Corporation has become the successful giant it is by maintaining an organic structure. (See Organizational Insight 4.4.)

Organic and mechanistic structures have very different implications for the way people behave. Is an organic structure better than a mechanistic structure? It seems to encourage the kinds of innovative behaviors that are in vogue at present: teamwork and self-management to improve quality and reduce the time needed to get new products to market. However, would you want to use an organic structure to coordinate the

ORGANIZATIONAL INSIGHT 4.4
Sony's Magic Touch

Product engineers at Sony turn out an average of four ideas for new products every day. Despite the fact that Sony is now a huge, diversified organization employing over 115,000 employees world wide, the company continues to lead the way in innovation in the consumer electronics industry. Why? A large part of the answer lies in the way the company uses its structure to motivate and coordinate employees. First, a policy of "self-promotion" allows Sony engineers, without notifying their supervisors, to seek out projects anywhere in the company where they feel they can make a contribution. If they find a new project to which they can make a contribution, their current boss is expected to let them join the new team. Sony has 23 business groups composed of hundreds of development teams, and this movement of people cross-pollinates ideas throughout the organization.

Sony deliberately emphasizes the lateral movement of people and ideas between design and engineering groups. The "Sony Way" emphasizes communication between groups to foster innovation and change. Sony has a corporate research department full of people in integrating roles who coordinate the efforts of the business groups and product development teams. It is their responsibility to make sure that each team knows what the others are doing, not only to share knowledge but to avoid overlap or duplication of effort. Once a year, the corporate research department organizes an in-house three-day "special event," open only to Sony employees, where each product development team can display its work to its peers.

That Sony's organic structure works is evident from the company's success in the marketplace and from the number of innovative products Sony turns out. Like many other large Japanese companies, Sony has a policy of lifetime employment, which makes it easy for its engineers to take risks with ideas and encourages the development of norms and values that support innovative efforts. Moreover, Sony rewards its engineers with promotion and more control of resources if they are successful.

Sony is hard-headed, however, when it comes to making the best use of its resources. Top management takes pains to distance itself from decision making inside a team or even a business group, so that the magic of decentralized decision making can work. But it does intervene when it sees different groups duplicating one another's efforts. For example, when Sony made a big push into computers it reorganized the relationship among its audio, video, and computer groups so that they improved the way they coordinated new product developments.[32] Once again, however, Sony takes a lateral view of the way the organization works, and its vertical chain of command is oriented toward finding ways to decentralize authority and still make the best use of resources. This lateral approach to decision making contrasts dramatically with the old IBM's vertical, centralized product development system, in which getting a decision made was, according to one engineer, like wading through a tub of peanut butter.

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armed forces? Probably not, because of the status problems of getting the army, air force, marines, and navy to cooperate. Would you want an organic structure in a nuclear power plant? Probably not, because a creative, novel response to an emergency might produce a catastrophe. Would you even want an organic structure in a restaurant, in which chefs take the roles of waiters and waiters take the roles of chefs and authority and power relationships are worked out on an ongoing basis? Probably not, because the traditional one-to-one correspondence of person and role allows restaurant employees to perform their roles most effectively. Conversely, would you want to use a mechanistic structure in a high-tech company like Apple Computer or Microsoft, where innovation is a function of the skills and abilities of teams of creative programmers working jointly on a project?

The Contingency Approach to Organizational Design

Obviously, the decision about whether to design an organic or a mechanistic structure depends on the particular situation an organization faces: the environment it confronts, its technology and the nature of the tasks it performs, and the type of people it employs. In general, the contingencies or sources of uncertainty facing an organization shape the organization's design. The **contingency approach** to organizational design tailors organizational structure to the sources of uncertainty facing an organization.[33] The structure is designed to respond to various contingencies—things that might happen and therefore must be planned for. One of the most important of these is the nature of the environment.

Contingency approach A management approach in which the design of an organization's structure is tailored to the sources of uncertainty facing an organization.

According to contingency theory, in order to manage its environment effectively, an organization should design its structure to fit with the environment in which the organization operates.[34] In other words, an organization must design its internal structure to control the external environment (see Figure 4-8). A poor fit between structure and environment leads to failure; a close fit leads to success. Support for contingency theory comes from two studies of the relationship between structure and the environment. These studies, conducted by Paul Lawrence and Jay Lorsch, and by Tom Burns and G. M. Stalker, are examined next.

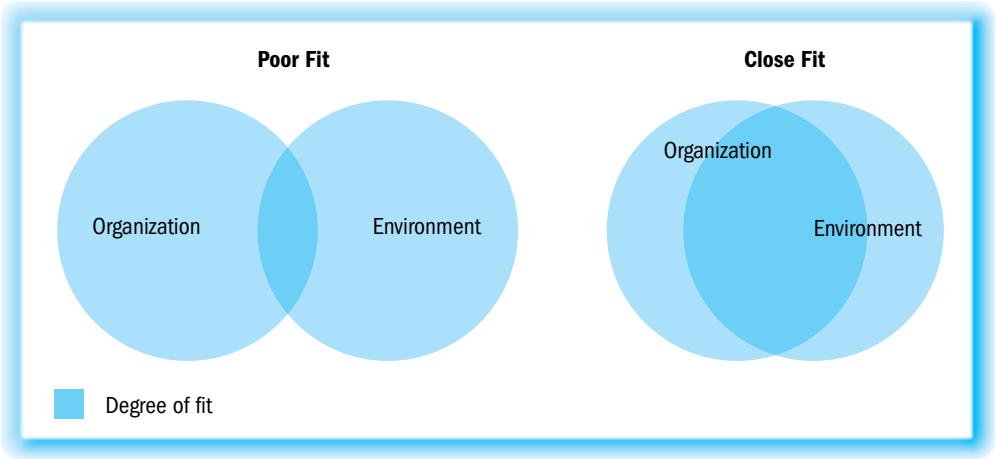

Figure 4-8 The Fit Between the Organization and Its Environment.
A poor fit leads to failure; a close fit leads to success.

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Lawrence and Lorsch on Differentiation, Integration, and the Environment

The strength and complexity of the forces in the general and specific environments have a direct effect on the extent of differentiation inside an organization.[35] The number and size of an organization's functions mirror the organization's needs to manage exchanges with forces in its environment (see Figure 4-9). Which function handles exchanges with suppliers? Purchasing does. Which function handles exchanges with customers? Sales and marketing. With the government and consumer organizations? Legal and public relations. A functional structure emerges, in part, to deal with the complexity of environmental demands.

Paul Lawrence and Jay Lorsch investigated how companies in different industries differentiate and integrate their structures to fit the characteristics of the industry in which they compete.[36] They selected three industries that, they argued, experienced different levels of uncertainty as measured by variables such as rate of change (dynamism) in the environment. The three industries were (1) the plastics industry, which they said experienced the greatest level of uncertainty; (2) the food-processing industry; and (3) the container or can-manufacturing industry, which they said experienced the least uncertainty. Uncertainty was highest in plastics because of the rapid pace of technological and product change. It was lowest in containers, where organizations produce a standard array of products that change little from year to year. Food-

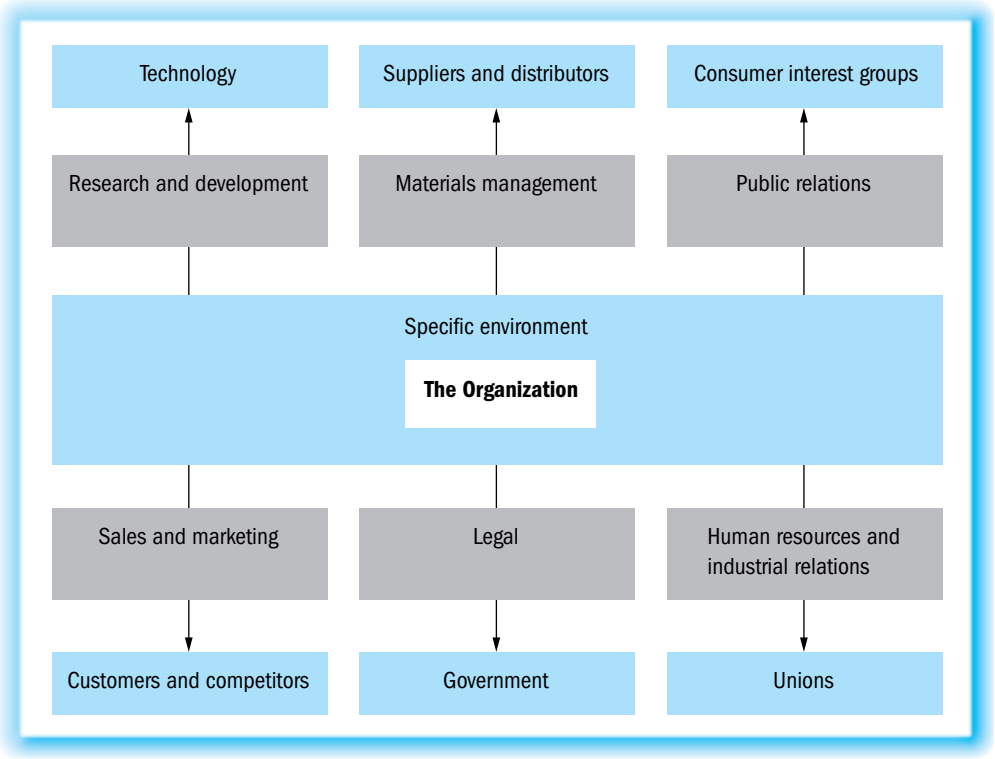

Figure 4-9 Functional Differentiation and Environmental Demands.
A functional structure emerges in part to deal with the complexity of demands from the environment.

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processing companies were in between because, although they introduce new products frequently, the technology of production is quite stable.

Lawrence and Lorsch measured the degree of differentiation in the production, research and development, and sales departments of a set of companies in each industry. They were interested in the degree to which each department adopted a different internal structure of rules and procedures to coordinate its activities. They also measured differences in subunit or functional orientations (differences in time, goal, and interpersonal orientations). They were interested in the differences between each department's attitude toward the importance of different organizational goals, such as sales or production goals or short- and long-term goals. They also measured how companies in different industries integrated their functional activities.

They found that when the environment was perceived by each of the three departments as very complex and unstable, the attitudes and orientation of each department diverged significantly. Each department developed a different set of values, perspectives, and way of doing things that suited the part of the specific environment that it was dealing with. Thus the extent of differentiation between departments was greater in companies that faced an uncertain environment than in companies that were in stable environments.

Lawrence and Lorsch also found that when the environment is perceived as unstable and uncertain, organizations are more effective if they are less formalized, more decentralized, and more reliant on mutual adjustment. When the environment is perceived as relatively stable and certain, organizations are more effective if they have a more centralized, formalized, and standardized structure. Moreover, they found that effective companies in different industries had levels of integration that matched their levels of differentiation. In the uncertain plastics industry, highly effective organizations were highly differentiated but were also highly integrated. In the relatively stable container industry, highly effective companies had a low level of differentiation, which was matched by a low level of integration. Companies in the moderately uncertain food-processing industry had levels of differentiation and integration in between the other two. Table 4-2 summarizes these relationships.

Table 4-2 The Effect of Uncertainty on Differentiation and Integration in Three Industries

	Degree of Uncertainty		
Variable	*Plastics Industry*	*Food-Processing Industry*	*Container Industry*
Environmental Variable			
Uncertainty (complexity dynamism, richness)	High	Moderate	Low
Structural Variables			
Departmental differentiation	High	Moderate	Low
Cross-functional integration	High	Moderate	Low

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As Table 4-2 shows, a complex, uncertain environment (such as the plastics industry) requires that different departments develop different orientations toward their tasks (a high level of differentiation) so that they can deal with the complexity of their specific environment. As a result of this high degree of differentiation, such organizations require more coordination (a high level of integration). They make greater use of integrating roles between departments to transfer information so that the organization as a whole can develop a coordinated response to the environment. In contrast, no complex integrating mechanisms such as integrating roles are found in companies in stable environments because the hierarchy, rules, and SOPs provide sufficient coordination.

The message of Lawrence and Lorsch's study was that organizations must adapt their structures to match the environment in which they operate if they are to be effective. This conclusion reinforced that of a study by Burns and Stalker.

Burns and Stalker on Organic versus Mechanistic Structures and the Environment

Tom Burns and G. M. Stalker also found that organizations need different kinds of structure to control activities when they need to adapt and respond to change in the environment.[37] Specifically, they found that companies with an organic structure were more effective in unstable, changing environments than were companies with a mechanistic structure. The reverse was true in a stable environment: There, the centralized, formalized, and standardized way of coordinating and motivating people that is char-

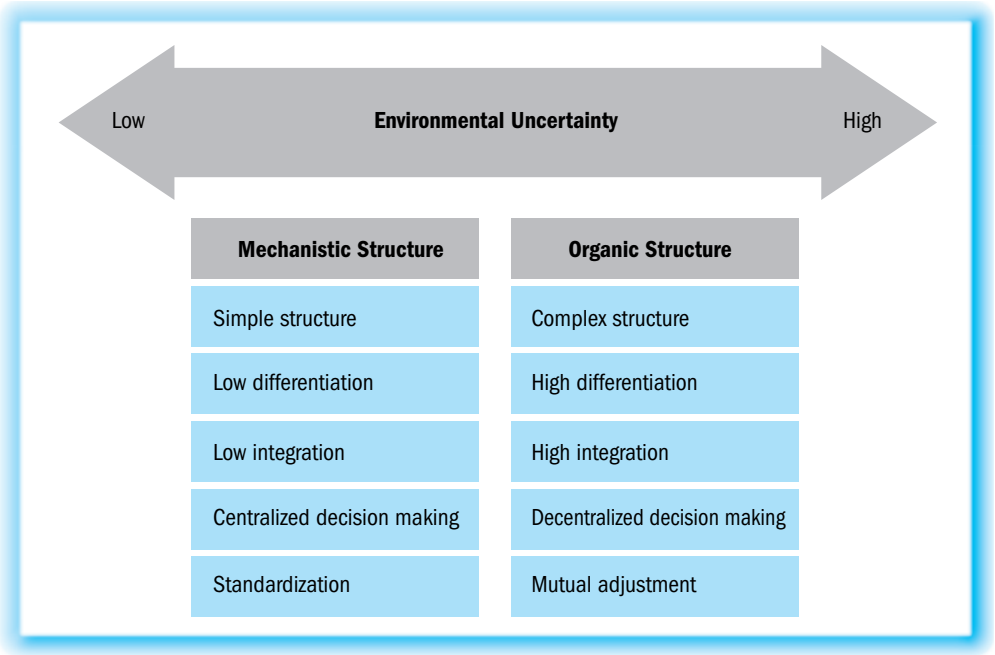

Figure 4-10 The Relationship Between Environmental Uncertainty and Organizational Structure.

Studies by Lawrence and Lorsch and by Burns and Stalker indicate that organizations should adapt their structure to reflect the degree of uncertainty in their environment. Companies with a mechanistic structure tend to fare best in a stable environment. Those with an organic structure tend to fare best in an unstable, changing environment.

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ORGANIZATIONAL INSIGHT 4.5
McDonald's Changing Environment

McDonald's environment is changing rapidly and becoming increasingly difficult to manage. The company has been experiencing increasing problems in the early 2000s.[38] Consumer tastes are shifting as a health-conscious public is eating less beef and less fat. Environmentalists are attacking the packaging that McDonald's uses. Competitors are becoming more numerous and are seizing McDonald's customers. Chili's and the Olive Garden are luring upscale customers, and Rally's, Taco Bell, and Wendy's are challenging McDonald's for patrons who want a quick, cheap meal. McDonald's has been searching for ways to increase its control of an environment that is becoming poorer, more complex, and less predictable.

At the center of its new approach is a dramatic change in McDonald's view of its domain. In the past, at the heart of McDonald's were its standardized production operation and its mechanistic structure based on formalization, which together ensured that burgers and fries served in London and Moscow tasted and looked the same as burgers and fries served in New York. The operations manual for the kitchen alone was 600 pages long!

New customers, however, demanded new kinds of food, so McDonald's new approach to production is based on flexibility. It has experimented with over 200 kinds of food—from barbecue to pizza to lobster—and is allowing franchisees to design a menu that appeals to local customers. For example, McDonald's restaurants on the Eastern Shore of Maryland serve crab cake sandwiches; in Mexico, McDonald's has introduced a guacamole burger.[39] McDonald's is also allowing franchisees to design a décor to suit their location: For instance, the McDonald's on Wall Street has a grand piano.[40] Also, McDonald's has opened many different types of restaurants, for example, Wal-Mart store and air conditioned play-house restaurants. In addition, McDonald's is experimenting with owning different kinds of restaurants—it bought a small pizza chain in 1999 and bought Chipotle, a Mexican restaurant, and Boston Market in the late 1990s, for example.[41]

All this flexibility placed a severe strain on McDonald's mechanistic structure. The organization was forced to develop a more organic structure to allow its 8,800 restaurants to fashion their own approaches to décor and bill of fare. Moreover, it decentralized authority to managers in the regions to make the important decisions that most affected them. In the new environment, the name of the game is flexibility and quick response to changes in customers' needs and competitors' moves. Nevertheless, McDonald's also needs to maintain the standards of quality and cleanliness that are among its claims to fame; thus it needs the centralized control that has always been the key to the operation of its structure. Managing a more complex environment requires a more complex structure. In 2002 McDonald's was still experiencing major problems in raising its performance, as its stock fell to a six-year low.

acteristic of a mechanistic structure worked better than the decentralized, team approach that is characteristic of an organic structure.

What is the reason for those results? When the environment is rapidly changing and on-the-spot decisions have to be made, lower level employees need to have the authority to make important decisions—in other words, they need to be empowered. Moreover, in complex environments, rapid communication and information sharing are often necessary to respond to customer needs and develop new products.[42] When the environment is stable, in contrast, there is no need for complex decision-making systems. Managing resource transactions is easy, and better performance can be obtained by keeping authority centralized in the top-management team and using top-down decision making. Burns and Stalker's conclusion was that organizations should design their structure to match the dynamism and uncertainty of their environment. Figure 4-10 summarizes the conclusions from Burns and Stalker's and Lawrence and Lorsch's contingency studies.

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ORGANIZATIONAL INSIGHT 4.6
Wal-Mart's Race to the Top

Phenomenal growth has made Wal-Mart the largest and most profitable retailer in the United States. While Sears and Kmart have been struggling and failing, Wal-Mart has been earning record profits and opening new kinds of stores at a rapid rate. Analysts attribute the company's success to the way the organization controls and coordinates activities. The efficiency of its store operations impacts very highly on Wal-Mart's effectiveness as a retailer. To control store operations, Wal-Mart has created a vertical operating structure based on a clear and precise definition of authority and responsibility. Each store is run by a manager, three assistant managers, 15 department heads, and the employees under each department head. Inside each store, decision making is highly centralized at the store-manager level. Moreover, store operations are highly standardized, and each store manager uses the same book of rules and procedures and the same accounting standards to operate each store. Thus the performance of all stores can be directly compared.

Each store manager reports to a district manager who is in charge of about a dozen stores. District managers, in turn, report to regional vice presidents, who oversee the work of three or four district managers. Regional vice presidents report to the vice president of operations, who is based in Bentonville, Arkansas. District and regional managers frequently visit Wal-Mart stores to learn what is happening at the store level. They take the information back to Bentonville, where top management sits down once a week, on Saturday, to plan a sales campaign for the whole organization. This system allows managers to monitor store operations closely and to intervene and take corrective action if necessary.

Wal-Mart is not just centralized and standardized, however. Mutual adjustment and decentralization of authority are also important parts of its design philosophy. Wal-Mart's approach is based on mutual adjustment as managers scour the country to find innovative products or ideas that they can share with stores to improve their performance. Similarly, although important decisions are made at the top of the organization, Wal-Mart encourages store managers to make quick decisions on their own to improve the success of their stores. Moreover, inside each store, the company encourages its associates to make suggestions, and it listens to what the associates have to say, incorporating their suggestions into its operating system. For example, in one year alone the "Yes we can, Sam" suggestion program led to the adoption of over 400 suggestions, which resulted in savings of $38 million.

As Wal-Mart has grown and become more differentiated, it has increased its use of integrating mechanisms. Managers frequently meet in task forces and teams to plan the company's future strategy. Wal-Mart also uses a sophisticated global satellite network to link and coordinate stores and to give the company quick feedback on store needs. Moreover, Wal-Mart has encouraged the development of organizational norms and values that encourage spontaneous behavior. Its employees participate in a stock option plan (some long-term associates have received stock worth over $400,000), sing a company song, and participate in other ways that build the Wal-Mart culture.

The continuing emphasis is on creating an organizational structure that not only allows Wal-Mart to control and monitor its operations so that it can reduce costs, but allows it to change and adapt itself to meet changing conditions in the highly competitive global retailing industry.[43] Wal-Mart's core competences in operating its organization have given the company a competitive advantage over rivals like Sears and Kmart. Although competitors have been copying many aspects of Wal-Mart's organizational design, so far they have not been able to achieve the results that make Wal-Mart stakeholders so happy.[44]

McDonald's offers an interesting insight into the way a change in an organization's environment can bring about a change in its structure. (See Organizational Insight 4.5.)

Later chapters examine in detail how to choose the appropriate organizational structure to meet different strategic and technological contingencies. For now, it is important to realize that mechanistic and organic structures are ideals: They are use-

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ful for examining how organizational structure affects behavior, but they probably do not exist in a pure form in any real-life organization. Most organizations are a mixture of the two types. Indeed, according to one increasingly influential view of organizational design, the most successful organizations are those that have achieved a balance between the two, so that they are simultaneously mechanistic and organic. An organization may tend more in one direction than in the other, but it needs to be able to act in both ways to be effective. The army, for example, is well known for having a mechanistic structure in which hierarchical reporting relationships are clearly specified. However, in wartime, this mechanistic command structure allows the army to become organic and flexible as it responds to the uncertainties of the quickly changing battlefield. Similarly, an organization may design its structure so that some functions (such as manufacturing and accounting) act in a mechanistic way and others (marketing or R&D) develop a more organic approach to their tasks. To achieve the difficult balancing act of being simultaneously mechanistic and organic, organizations need to make appropriate choices (see Figure 4-6). Wal-Mart's managers have been better able than McDonald's to achieve this balance, as the following Organizational Insight suggests.

As this example suggests, Wal-Mart has achieved the difficult balancing act of being mechanistic and organic simultaneously. It is now trying to achieve this same success at a global level. In the next three chapters we look in more detail at the issues involved in designing organizational structure and culture to improve organizational effectiveness.

SUMMARY

This chapter has analyzed how managers' responses to several organizational design challenges affect the way employees behave and interact and how they respond to the organization. We have analyzed how differentiation occurs and examined three other challenges that managers confront as they try to structure their organization to achieve organizational goals. Chapter 4 has made the following main points:

1. Differentiation is the process by which organizations evolve into complex systems as they allocate people and resources to organizational tasks and assign people different levels of authority.
2. Organizations develop five functions to accomplish their goals and objectives: support, production, maintenance, adaptive, and managerial.
3. An organizational role is a set of task-related behaviors required of an employee. An organization is composed of interlocking roles that are differentiated by task responsibilities and task authority.
4. Differentiation has a vertical and a horizontal dimension. Vertical differentiation refers to the way an organization designs its hierarchy of authority. Horizontal differentiation refers to the way an organization groups roles into subunits (functions and divisions).
5. Managers confront five design challenges as they coordinate organizational activities. The choices they make are interrelated and collectively determine how effectively an organization operates.
6. The first challenge is to choose the right extent of vertical and horizontal differentiation.
7. The second challenge is to strike an appropriate balance between differentiation and integration and use appropriate integrating mechanisms.
8. The third challenge is to strike an appropriate balance between the centralization and decentralization of decision-making authority.
9. The fourth challenge is to strike an appropriate balance between standardization and mutual adjustment by using the right amounts of formalization and socialization.
10. Different organizational structures cause individuals to behave in different ways. Mechanistic structures are designed to cause people to

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behave in predictable ways. Organic structures promote flexibility and quick responses to changing conditions. Successful organizations strike an appropriate balance between mechanistic and organic structures.

11. Contingency theory argues that in order to manage its environment effectively, an organization should design its structure and control systems to fit with the environment in which the organization operates.

DISCUSSION QUESTIONS

1. Why does differentiation occur in an organization? Distinguish between vertical and horizontal differentiation.
2. Draw an organizational chart of the business school or college that you attend. Outline its major roles and functions. How differentiated is it? Do you think the distribution of authority and division of labor are appropriate?
3. When does an organization need to use complex integrating mechanisms? Why?
4. What factors determine the balance between centralization and decentralization, and between standardization and mutual adjustment?
5. Under what conditions is an organization likely to prefer (a) a mechanistic structure, (b) an organic structure, or (c) elements of both?

ORGANIZATIONAL THEORY IN ACTION

PRACTICING ORGANIZATIONAL THEORY: GROWING PAINS

Form groups of three to five people and discuss the following scenario:

You are the founding entrepreneurs of Zylon Corporation, a fast-growing Internet software company that specializes in electronic banking. Customer demand to license your software has boomed so much that in just two years you have added over 50 new software programmers to help develop a new range of software products. The growth of your company has been so swift that you still operate informally with a loose and flexible arrangement of roles, and programmers are encouraged to find solutions to problems as they go along. Although this structure has worked well, there are signs that problems are arising.

There have been increasing complaints from employees that good performance is not being recognized in the organization and that they do not feel equitably treated. Moreover, there have been complaints about getting managers to listen to their new ideas and to act on them. A bad atmosphere seems to be developing in the company, and recently several talented employees left. You are meeting to discuss these problems.

1. Examine your organizational structure to see what might be causing these problems.
2. What kinds of design choices do you need to make to solve them?

MAKING THE CONNECTION #4

Find an example of a company that has been facing one of the design challenges discussed in this chapter. What problem has the company been experiencing? How has it attempted to deal with the problem?

THE ETHICAL DIMENSION #4

The way an organizational structure is designed affects the way its members behave. Rules can be applied so strictly and punitively that they harm employees by, for example, increasing the stress of the job. Inappropriate norms can develop that might reduce employee incentive to work or cause employees to abuse their peers. Similarly, in some organizations, superiors use their authority to abuse and harangue employees. Think about the ethical implications of the design challenges discussed in this chapter.

1. Using the design challenges, design an organization that you think would result in highly ethical decision making; then design one that would lead to the opposite. Why the difference?
2. Do you think ethical behavior is more likely in a mechanistic or an organic structure?

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ANALYZING THE ORGANIZATION: DESIGN MODULE #4

This module attempts to get at some of the basic operating principles that your organization uses to perform its tasks. From the information you have been able to obtain, describe the aspects of your organization's structure in the assignment follows.

Assignment

1. How differentiated is your organization? Is it simple or complex? List the major roles, functions, or departments in your organization. Does your organization have many divisions? If your organization engages in many businesses, list the major divisions in the company.
2. What core competences make your organization unique or different from other organizations? What are the sources of the core competences? How difficult do you think it would be for other organizations to imitate these distinctive competences?
3. How has your organization responded to the design challenges? (a) Is it centralized or decentralized? How do you know? (b) Is it highly differentiated? Can you identify any integrating mechanisms used by your organization? What is the match between the complexity of differentiation and the complexity of the integrating mechanisms that are used? (c) Is behavior in the organization very standardized, or does mutual adjustment play an important role in coordinating people and activities? What can you tell about the level of formalization by looking at the number and kinds of rules the organization uses? How important is socialization in your organization?
4. Does your analysis in item 3 lead you to think that your organization conforms more to the organic or to the mechanistic model of organizational structure? Briefly explain why you think it is organic or mechanistic.
5. From your analysis so far, what do you think could be done to improve the way your organization operates?

Case for Analysis

Where Should Decisions be Made?

In 1995, Procter & Gamble's top managers took a long, hard look at the giant company's global operations and decided that they could make much better use of organizational resources if they changed the level at which decisions were made in their organization. Until 1995, managers in each of Procter & Gamble's divisions, in each country in the world in which it operated, were more or less free to make their own decisions, and decision making was decentralized. Thus managers in charge of the British soap and detergent division operated quite independently from managers in French and German divisions. Moreover, even within Britain, the soap and detergent division operated quite independently from other Procter & Gamble divisions such as its healthcare and beauty products divisions. Top managers believed that this highly decentralized global decision making resulted in the loss of possible gains to be obtained from cooperation both among managers of the same kind of division in the different countries (soap and detergent divisions throughout Europe) and among managers in the different kinds of divisions operating in the same country or world regions.

Therefore, Procter & Gamble's top-management team pioneered a new kind of organizational structure. First, they divided P&G's global operations into four main areas—North America, Europe, the Middle East and Africa, and Asia—and in each area they created the new role of global

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executive vice president, responsible for overseeing the operation of all the different kinds of divisions inside that world region. This approach was something Procter & Gamble had never attempted before.[45] It is the global vice president's responsibility to get the different kinds of divisions inside each area to cooperate and to share information and knowledge so that authority is centralized at the world area level. Each of these new top managers then reports directly to the president of Procter & Gamble, further centralizing authority.

In another change to further centralize authority, P&G's managers grouped divisions operating in the same area and put them under the control of one manager. For example, the manager of the U.K. soap and detergent division took control over soap and detergent operations in the United Kingdom, Ireland, Spain, and Portugal and became responsible for getting them to cooperate so the company could reduce costs and innovate more quickly across Europe.

Procter & Gamble has been delighted with its new balance between centralized and decentralized authority because its top managers feel they are making much better use of organizational resources to meet customers' needs. They believe Procter & Gamble is poised to become the dominant consumer goods company in the world, not merely in the United States, and in 1996 the company earned record operating profits on record global sales.

DISCUSSION QUESTIONS

1. Why did Procter & Gamble move to centralize control?
2. When might managers realize that they have gone too far and "centralized" control too much?

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