chapter 13

Designing Organizational Structures

learning objectives

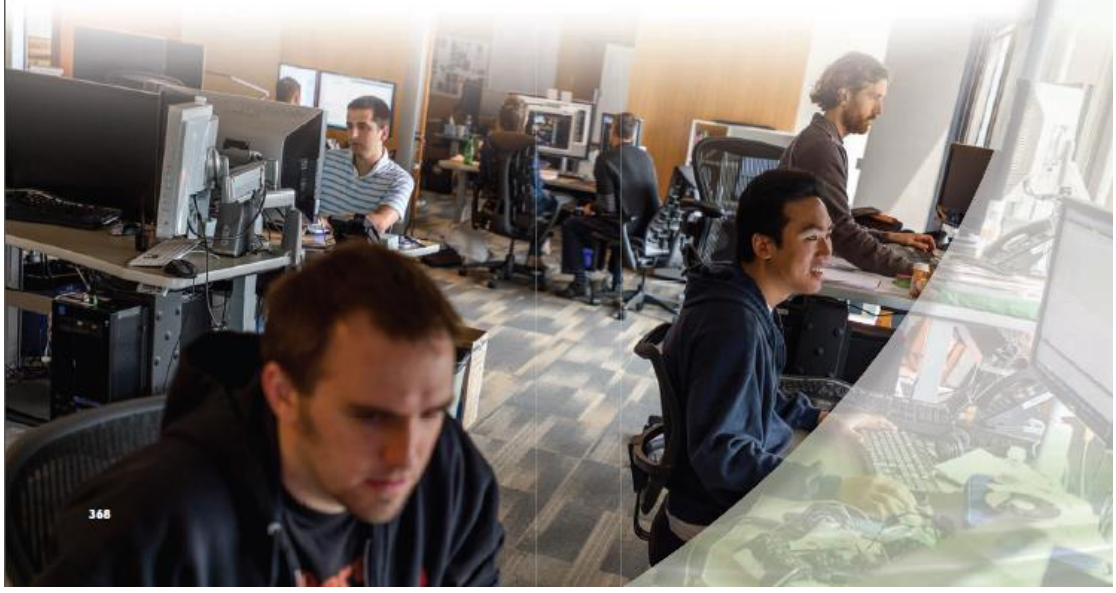
After reading this chapter, you should be able to:

13-1 Describe three types of coordination in organizational structures.

13-2 Discuss the role and effects of span of control, centralization, and formalization, and relate these elements to organic and mechanistic organizational structures.

13-3 Identify and evaluate six types of departmentalization.

13-4 Explain the relevance of the external environment, organizational size, technology, and strategy for designing an organizational structure.



Valve Corporation's organizational structure literally operates on wheels. Employees at the Bellevue, Washington, software and entertainment company have no bosses or departments to determine their job duties or location. Instead, they figure out where their talents are best needed in the company and move their desks (which have wheels) to that team. "Think of those wheels as a symbolic reminder that you should always be considering where you could move yourself to be more valuable," says Valve's quirky handbook. "There is no organizational structure keeping you from being in close proximity to the people who you'd help or be helped by most."

Valve's employees organize themselves into self-directed teams. "People commit to projects, and projects are self-organizing," explains Michael Abrash, a game programmer and technical writer who recently joined Valve. Each team agrees on its goals, deadlines, work rules, task assignments, and other issues. Each team has a lead member, who helps coordinate the team but is not a traditional manager. Project roles are determined through mutual agreement; pay is calculated from peer evaluations of each employee's contribution to Valve.

Another indication of Valve's flat organizational structure is that employees make corporate-level decisions through consensus. "Everyone is constantly making big decisions for the company, and deciding where we'll go and what products we should build and so forth," says Greg Coomer, one of Valve's earliest employees. Cofounder Gabe Newell is technically Valve's CEO, but he avoids being viewed as the top dog. "Of all the people at this company who aren't your boss, Gabe is the MOST not your boss, if you get what we're saying," employees are advised in the handbook.

Contrary to what you might think, Valve isn't a start-up with a handful of people. It's a multi-billion dollar company employing more than 300 engineers, artists, and other professionals. Yet for almost two decades, Valve's seemingly chaotic structure has suppressed bureaucracy and empowered employees to discover and produce innovative products. "Hierarchy is great for maintaining predictability and

Valve Corporation has a flat, organic organizational structure to leverage the creative and entrepreneurial potential of its 300 employees.

repeatability," says Valve's employee handbook. "But when you're an entertainment company that's spent the last decade going out of its way to recruit the most intelligent, innovative, talented people on Earth, telling them to sit at a desk and do what they're told obliterates 99 percent of their value."[1]

Valve Corporation's organizational structure is different from that of most companies, but this design seems to serve the game maker and entertainment firm's strategic objectives. **Organizational structure** refers to the division of labor and the patterns of coordination, communication, workflow, and formal power that direct organizational activities. It formally dictates what activities receive the most attention, as well as financial, power, and information resources. At Valve, for example, power and resources flow mainly to teams, which have almost complete autonomy over their work objectives and work processes.

Although the topic of organizational structure typically conjures up images of an organizational chart, this diagram is only part of the puzzle. Organizational structure includes these reporting relationships, but it also relates to job design, information flow, work standards and rules, team dynamics, and power relationships. As such, the organization's structure is an important instrument in an executive's toolkit for organizational change, because it establishes new communication patterns and aligns employee behavior with the corporate vision.[2]

This chapter begins by introducing the two fundamental processes in organizational structure: division of labor and coordination. This is followed by a detailed investigation of the four main elements of organizational structure: span of control, centralization, formalization, and departmentalization. The latter part of this chapter examines the contingencies of organizational design, including external environment, organizational size, technology, and strategy.

Division of Labor and Coordination

LO 13-1

All organizational structures include two fundamental requirements: the division of labor into distinct tasks and the coordination of that labor so that employees are able to accomplish common goals.[3] Organizations are groups of people who work interdependently toward some purpose. To efficiently accomplish their goals, these groups typically divide the work into manageable chunks, particularly when there are many different tasks to perform. They also introduce various coordinating mechanisms to ensure that everyone is working effectively toward the same objectives.

DIVISION OF LABOR

Division of labor refers to the subdivision of work into separate jobs assigned to different people. Subdivided work leads to job specialization, because each job now includes a narrow subset of the tasks necessary to complete the product or service. Although Valve Corporation's leaders don't do the organizing, employees self-organize into project teams, and members of each team agree to the tasks they should perform. Valve encourages its staff to become multiskilled, but most people gravitate toward one area of expertise or another. As companies get larger, this horizontal division of labor is usually accompanied by a vertical division of labor: Some people are assigned the task of supervising employees, others are responsible for managing those supervisors, and so on. Valve has been able to avoid (or limit) this vertical division of labor by relying on employees to manage themselves and each other. But even Valve has team leaders who coordinate the work, as well as marketing and strategy leaders who guide and support employees' decisions on these matters.

organizational structure
The division of labor and patterns of coordination, communication, workflow, and formal power that direct organizational activities.

Why do companies divide the work into several jobs? As we described in Chapter 6, job specialization increases work efficiency.[4] Job incumbents can master their tasks quickly because work cycles are shorter. Less time is wasted changing from one task to another. Training costs are reduced because employees require fewer physical and mental skills to

accomplish the assigned work. Finally, job specialization makes it easier to match people with specific aptitudes or skills to the jobs for which they are best suited. Although one person working alone might be able to design a new online game, doing so would take much longer than having the work divided among several people with the required diversity of skills. Some employees are talented at thinking up innovative storylines, whereas others are better at preparing online drawings or working through financial costs.

COORDINATING WORK ACTIVITIES

When people divide work among themselves, they require coordinating mechanisms to ensure that everyone works in concert. Coordination is so closely connected to the division of labor that the optimal level of specialization is limited by the feasibility of coordinating the work. In other words, an organization's ability to divide work among people depends on how well those people can coordinate with each other. Otherwise, individual effort is wasted due to misalignment, duplication, and mistiming of tasks. Coordination also tends to become more expensive and difficult as the division of labor increases. Therefore, companies specialize jobs only to the point at which it isn't too costly or challenging to coordinate the people in those jobs.[5]

Every organization—from the two-person corner convenience store to the largest corporate entity—uses one or more of the following coordinating mechanisms:[6] informal communication, formal hierarchy, and standardization (see Exhibit 13.1). These forms of coordination align the work of staff within the same department as well as across work units. These coordinating mechanisms are also critical when several organizations work together, such as in joint ventures and humanitarian aid programs.[7]

Coordination Through Informal Communication All organizations rely on informal communication as a coordinating mechanism. This process includes sharing information on mutual tasks and forming common mental models so that employees synchronize work activities using the same mental road map.[8] Informal communication is vital in nonroutine

EXHIBIT 13.1 Coordinating Mechanisms in Organizations

FORM OF COORDINATION	DESCRIPTION	SUBTYPES/STRATEGIES
Informal communication	Sharing information on mutual tasks; forming common mental models to synchronize work activities	• Direct communication • Liaison roles • Integrator roles • Temporary teams
Formal hierarchy	Assigning legitimate power to individuals, who then use this power to direct work processes and allocate resources	• Direct supervision • Formal communication channels
Standardization	Creating routine patterns of behavior or output	• Standardized skills • Standardized processes • Standardized output

Sources: Based on information in J. Galbraith, *Designing Complex Organizations* (Reading, MA: Addison-Wesley, 1973), pp. 8–19; H. Mintzberg, *The Structuring of Organizations* (Englewood Cliffs, NJ: Prentice Hall, 1979), Ch. 1; D. A. Nadler and M. L. Tushman, *Competing by Design: The Power of Organizational Architecture* (New York: Oxford University Press, 1997), Ch. 6.

and ambiguous situations, because employees need to exchange a large volume of information through face-to-face communication and other media-rich channels. Valve Corporation relies heavily on informal communication as a coordinating mechanism. Employees organize themselves into teams and physically move close to each other to communicate directly, often on projects that typically enter uncharted territory.

Although coordination through informal communication is easiest in small firms, information technologies have further enabled this coordinating mechanism in large organizations.[9] Companies employing thousands of people also support informal communication by keeping each production site small. Magna International, the global auto parts manufacturer, keeps its plants at a maximum size of around 200 employees. Magna's leaders believe that employees have difficulty remembering others' names in plants that are any larger, a situation that makes informal communication more difficult as a coordinating mechanism.[10]

Larger organizations also encourage coordination through informal communication by assigning *liaison roles* to employees, who are expected to communicate and share information with coworkers in other work units. When coordination is required among several work units, companies create *integrator roles*. These people are responsible for coordinating a work process by encouraging employees in each work unit to share information and informally coordinate work activities. Integrators do not have authority over the people involved in that process, so they must rely on persuasion and commitment. Brand managers for luxury perfumes have integrator roles because they ensure that the work of fragrance developers, bottle designers, advertising creatives, production, and other groups are aligned with the brand's image and meaning.[11]

Another way that larger organizations encourage coordination through informal communication is by organizing employees from several departments into temporary teams. Temporary cross-functional teams give employees more authority and opportunity to coordinate through informal communication. This process is now common in vehicle design. As the design engineer begins work on product specifications, team members from manufacturing, engineering, marketing, purchasing, and other departments are able to provide immediate feedback, as well as begin their contribution to the process. Without the informal coordination available through teams, the preliminary car design would pass from one department to the next—a much slower process.[12]

Coordination Through Micromanagement[14]

37% of 524 U.S. employees surveyed say they occasionally or frequently feel micromanaged by their boss.

31% of 97,000 employees surveyed in 30 countries describe their company's leadership as oppressive or authoritative.

25% of 500 U.S. employees surveyed say they work for a "micromanager."

17% of 150 senior executives surveyed from the 1,000 largest American companies identify micromanaging as having the most negative impact on employee morale (third highest factor, after lack of communication and recognition).

9% of 11,045 U.S. employees surveyed identify micromanagement as the most significant barrier to their productivity.

Coordination Through Formal Hierarchy Informal communication is the most flexible form of coordination, but it can become chaotic as the number of employees increases. Consequently, as organizations grow, they rely increasingly on a second coordinating mechanism: formal hierarchy.[13] Hierarchy assigns legitimate power to individuals, who then use this power to direct work processes and allocate resources. In other words, work is coordinated through direct supervision—the chain of command.

A century ago, management scholars applauded the formal hierarchy as the best coordinating mechanism for large organizations. They argued that organizations were most effective when managers exercised their authority and employees received orders from only one supervisor. The chain of command—in which

information flows across work units only by going through supervisors and managers—was viewed as the backbone of organizational strength.

Although still important, formal hierarchy is much less popular today. One problem, which Valve's cofounders have tried to avoid, is that hierarchical organizations are not as agile for coordination in complex and novel situations. Communicating through the chain of command is rarely as fast or accurate as direct communication between employees. Another concern with formal hierarchy is that managers are able to closely supervise only a limited number of employees. As the business grows, the number of supervisors and layers of management must increase, resulting in a costly bureaucracy. Finally, today's workforce demands more autonomy over work and more involvement in company decisions. Formal hierarchy coordination processes tend to conflict with employee autonomy and involvement.

Coordination Through Standardization Standardization, the third means of coordination, involves creating routine patterns of behavior or output. This coordinating mechanism takes three distinct forms:

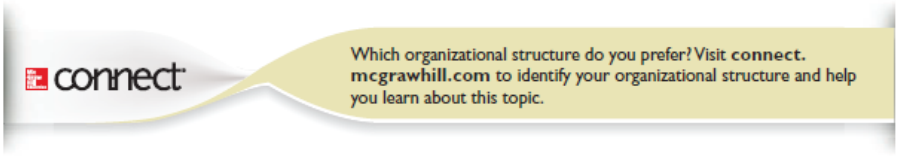
- *Standardized processes.* The quality and consistency of a product or service can often be improved by standardizing work activities through job descriptions and procedures.[15] For example, flow charts represent a standardized process coordinating mechanism. This coordinating mechanism works best when the task is routine (e.g., mass production) or simple (e.g., stocking shelves), but it is less effective in nonroutine and complex work such as product design (which Valve employees do).
- *Standardized outputs.* This form of standardization involves ensuring that individuals and work units have clearly defined goals and output measures (e.g., customer satisfaction, production efficiency). For instance, to coordinate the work of salespeople, companies assign sales targets rather than specific behaviors.
- *Standardized skills.* When work activities are too complex to standardize through processes or goals, companies often coordinate work effort by extensively training employees or hiring people who have learned precise role behaviors from educational programs. Valve Corporation relies on coordination through standardized skills. It carefully hires people for their skills in software engineering, animation, and related fields, so they can perform tasks without job descriptions or precise guidelines. Training is also a form of standardization through skills. Many companies have in-house training programs where employees learn how to perform tasks consistent with company expectations.

The division of labor and coordination of work represent the two fundamental ingredients of all organizations. But how work is divided, which coordinating mechanisms are emphasized, who makes decisions, and other issues are related to the four elements of organizational structure that we discuss over the next two sections of this chapter.

Elements of Organizational Structure

LO 13-2

Organizational structure has four elements that apply to every organization. This section introduces three of them: span of control, centralization, and formalization. The fourth element—departmentalization—is presented in the next section.



SPAN OF CONTROL

Chief executive officers are much busier today managing their direct reports than they were two or three decades ago. In the 1980s, an average of five people (typically vice-presidents) reported directly to the CEOs of *Fortune* 500 companies. By the end of the 1990s, this span of control increased an average of 6.5 direct reports. Today, CEOs of the largest U.S. firms have an average of 10 direct reports, double the number a few decades earlier. This increase reflects the fact that most *Fortune* 500 companies are far more complex today. They operate in many markets, have more variety of products, and employ people with a broader array of technical specialties. Each of these types of variation demand top-level attention, so there are more people reporting directly to the chief executive.[16]

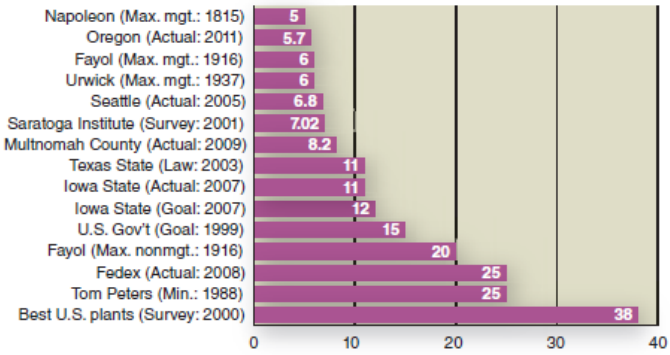
Span of control (also called *span of management*) refers to the number of people directly reporting to the next level in the hierarchy. A narrow span of control exists when very few people report directly to a manager, whereas a wide span exists when a manager has many direct reports.[17] A century ago, French engineer and management scholar Henri Fayol strongly recommended a relatively narrow span of control, typically no more than 20 employees per supervisor and six supervisors per manager. Fayol championed formal hierarchy as the primary coordinating mechanism, so he believed that supervisors should closely monitor and coach employees. His views were similar to those of Napoleon, who declared that senior military leaders should have no more than five officers directly reporting to them. These prescriptions were based on the belief that managers simply could not monitor and control any more subordinates closely enough.[18]

span of control
The number of people directly reporting to the next level in the hierarchy.

Today, we know better. The best-performing manufacturing plants currently have an average of 38 production employees per supervisor (see Exhibit 13.2).[19] What's the secret here? Did Fayol, Napoleon, and others miscalculate the optimal span of control? The answer is that those sympathetic to hierarchical control believed that employees should perform the physical tasks, whereas supervisors and other management personnel should make the decisions and monitor employees to make sure they performed their tasks. In contrast, the best-performing manufacturing operations today rely on self-directed teams, so direct supervision (formal hierarchy) is supplemented with other coordinating

EXHIBIT 13.2

Recommended, Actual, and Enforced Spans of Control[20]



Figures represent the average number of direct reports per manager. "Max." figures represent the maximum spans of control recommended by Napoleon Bonaparte, Henri Fayol, and Lindall Urwick. "Min." figure represents the minimum span of control recommended by Tom Peters. "Goal" figures represent span of control targets that the U.S. government and the State of Iowa have tried to achieve. The State of Texas figure represents the span of control mandated by law. The Saratoga Institute figure is the average span of control among U.S. companies surveyed. The Best U.S. Plants figure is the average span of control in American manufacturing facilities identified by *Industry Week* magazine as the most effective. "Actual" figures are spans of control in the city of Seattle, State of Oregon, Multnomah County (including Portland, Oregon), State of Iowa, and Fedex Corporation in the years indicated.

mechanisms. Self-directed teams coordinate mainly through informal communication and various forms of standardization (i.e., training and processes), so formal hierarchy plays more of a supporting role.

Many firms that employ doctors, lawyers, and other professionals also have a wider span of control because these staff members coordinate their work mainly through standardized skills. For example, more than two dozen people report directly to Cindy Zollinger, cofounder and president of the Boston-based litigation-consulting firm Cornerstone Research. Zollinger explains that this large number of direct reports is possible because she leads professional staff who don't require close supervision. "They largely run themselves," Zollinger explains. "I help them in dealing with obstacles they face, or in making the most of opportunities that they find."[21]

A second factor influencing the best span of control is whether employees perform routine tasks. A wider span of control is possible when employees perform routine jobs, because they require less direction or advice from supervisors. A narrow span of control is necessary when employees perform novel or complex tasks, because these employees tend to require more supervisory decisions and coaching. This principle is illustrated in a survey of property and casualty insurers. The average span of control in commercial-policy processing departments is around 15 employees per supervisor, whereas the span of control is 6.1 in claims service and 5.5 in commercial underwriting. Staff members in the latter two departments perform more technical work, so they have more novel and complex tasks, which requires more supervisor involvement. Commercial-policy processing, on the other hand, is like production work. Tasks are routine and have few exceptions, so managers have less coordinating to do with each employee.[22]

A third influence on span of control is the degree of interdependence among employees within the department or team.[23] Generally, a narrow span of control is necessary where employees perform highly interdependent work with others. More supervision is required for highly interdependent jobs because employees tend to experience more conflict with each other, which requires more of a manager's time to resolve. Also, employees are less clear on their personal work performance in highly interdependent tasks, so supervisors spend more time providing coaching and feedback.

Tall versus Flat Structures Span of control is interconnected with organizational size (number of employees) and the number of layers in the organizational hierarchy. Consider two companies with the same number of employees. If Company A has a wider span of control (more direct reports per manager) than Company B, then Company A necessarily has fewer layers of management (i.e., a flatter structure). The reason for this relationship is that a company with a wider span of control has more employees per supervisor, more supervisors for each middle manager, and so on. This larger number of direct reports, compared to a company with a narrower span of control, is possible only by removing layers of management.

The interconnection of span of control, organizational size (number of employees), and number of management layers has important implications for companies. Organizations employ more people as they grow, which means they must widen the span of control, build a taller hierarchy, or both. Most companies end up building taller structures, because they rely on direct supervision to some extent as a coordinating mechanism, and there are limits to how many people each manager can coordinate.

Unfortunately, building a taller hierarchy (more layers of management) creates problems. One concern is that executives in tall structures tend to receive lower-quality and less timely information. People tend to filter, distort, and simplify information before it is passed to higher levels in the hierarchy, because they are motivated to frame the information in a positive light or summarize it more efficiently. In contrast, information receives less manipulation in flat hierarchies and is often received much more quickly than in tall hierarchies. "Any new idea condemned to struggle upward through multiple levels of rigidly hierarchical, risk-averse management is an idea that won't see

KenGen, Kenya's leading electricity generation company, had more than 15 layers of hierarchy a few years ago. Today, the company's 1,500 employees are organized in a hierarchy with only 6 layers: the chief executive, executive directors, senior managers, chief officers, front line management, and nonmanagement staff. "This flatter structure has reduced bureaucracy, and it has also improved teamwork," explains KenGen executive Simon Ngure.[24]

debating point

SHOULD ORGANIZATIONS CUT BACK MIDDLE MANAGEMENT?

Business leaders face the ongoing challenge of preventing their organization from ballooning into a fat bureaucracy with too many layers of middle managers. Indeed, it has become a mantra for incoming CEOs to gallantly state they will "delayer" or "flatten" the corporate hierarchy, usually as part of a larger mandate to "empower" the workforce.

As we describe in this chapter, there are several valid arguments for minimizing the corporate hierarchy, particularly by cutting back middle management. As companies employ more managers, they increase overhead costs and have a lower percentage of people actually generating revenue by making products or providing services. A taller hierarchy also undermines effective communication between frontline staff—who receive valuable knowledge about the external environment—and the top executive team. Middle managers have a tendency to distort, simplify, and filter information as it passes from them to higher authorities in the company. A third reason for cutting back middle management is that they absorb organizational power. As companies add more layers, they remove more power that might have been assigned directly to frontline employees. In other words, tall hierarchies potentially undermine employee empowerment.

These concerns seem logical, but slashing the hierarchy can have several unexpected consequences that outweigh any benefits. In fact, a growing chorus of management experts warn about several negative long-term consequences of cutting out too much middle management.[29]

Critics of delayering point out that all companies need managers to translate corporate strategy into coherent daily operations. "Middle managers are the link between your mission and execution," advises a senior hospital executive. "They turn our strategy into action and get everyone on the same page."[30] Furthermore, managers are needed to make quick decisions, coach employees, and help resolve conflicts. These valuable functions are underserved when the span of control becomes too wide.

Delayering increases the number of direct reports per manager and thus significantly increases management workload and corresponding levels of stress. Managers partly reduce the workload by learning to give subordinates more autonomy rather than micromanaging them. However, this role adjustment itself is stressful (same responsibility, but less authority or control). Companies often increase the span of control beyond the point at which many managers are capable of coaching or leading their direct reports.

A third concern is that delayering results in fewer managerial jobs, so companies have less maneuverability to develop managerial skills. Promotions are also riskier, because they involve a larger jump in responsibility in flatter, compared with taller, hierarchies. Furthermore, having fewer promotion opportunities means that managers experience more career plateauing, which reduces their motivation and loyalty. Chopping back managerial career structures also sends a signal that managers are no longer valued. "Delayering has had an adverse effect on morale, productivity, and performance," argues a senior government executive. "Disenfranchising middle management creates negative perceptions and lower commitment to the organization with consequent reluctance to accept responsibility."[31]

daylight . . . until it's too late," warned Chrysler Corp. CEO Sergio Marchionne when he restructured the company.[25]

A second problem is that taller structures have higher overhead costs. With more managers per employee, tall hierarchies necessarily have more people administering the company, thereby reducing the percentage of staff who are actually making the product or providing the service. A third issue with tall hierarchies is that employees usually feel less empowered and engaged in their work. Hierarchies are power structures, so more levels of hierarchy tend to draw power away from people at the bottom of that hierarchy. The size of the hierarchy itself tends to focus power around managers rather than employees.[26]

These problems have prompted companies to remove one or more levels in the organizational hierarchy.[27] This "delayering" recently occurred at Sandvik, the Swedish manufacturer of tools and equipment for mining and other industries. "We had as much as 13 layers in the company between me as CEO and the most junior worker in the Company," says Sandvik CEO Olof Faxander. "We've flattened that [so we] only have up to seven layers in the Company."[28] At the same time, critics warn that cutting back middle management may do more harm than good.

Samsonite, the Swiss-based luggage company, recently abandoned its centralized organizational structure by delegating more power to country managers. The reason? "We've learned that all of our customers are more different than similar," explains Samsonite chief financial officer Kyle Gendreau. Rather than follow global marketing and distribution practices dictated by head office, country managers are now "empowered" to apply practices that best serve their local markets. "Letting people be entrepreneurial on the ground drives growth," says Gendreau. "It's really paying off for us."[33]

CENTRALIZATION AND DECENTRALIZATION

Centralization means that formal decision-making authority is held by a small group of people, typically those at the top of the organizational hierarchy. Most organizations begin with centralized structures, as the founder makes most of the decisions and tries to direct the business toward his or her vision. As organizations grow, however, they diversify, and their environments become more complex. Senior executives aren't able to process all the decisions that significantly influence the business. Consequently, larger organizations typically *decentralize;* that is, they disperse decision authority and power throughout the organization.

The optimal level of centralization or decentralization depends on several contingencies that we will examine later in this chapter. However, different degrees of decentralization can occur simultaneously in different parts of an organization. For instance, the sales, marketing, and operations units at Google are fairly centralized, whereas the engineering areas are much more decentralized so they can develop new products without top-down control. Likewise, 7-Eleven relies on both centralization and decentralization in different parts of the organization. It centralizes decisions about information technology and supplier purchasing to improve buying power, increase cost efficiencies, and minimize complexity across the organization. Yet it decentralizes local inventory decisions to store managers, because they have the best information about their customers and can respond quickly to local market needs. "We could never predict a busload of football players on a Friday night, but the store manager can," explains a 7-Eleven executive.[32]

centralization
The degree to which formal decision authority is held by a small group of people, typically those at the top of the organizational hierarchy.

formalization
The degree to which organizations standardize behavior through rules, procedures, formal training, and related mechanisms.

FORMALIZATION

Formalization is the degree to which organizations standardize behavior through rules, procedures, formal training, and related mechanisms.[34] In other words, companies become more formalized as they increasingly rely on various forms of standardization to coordinate work. McDonald's Restaurants and most other efficient fast-food chains typically have a high

degree of formalization because they rely on the standardization of work processes as a coordinating mechanism. Employees have precisely defined roles, right down to how much mustard should be dispensed, how many pickles should be applied, and how long each hamburger should be cooked.

Older companies tend to become more formalized because work activities become routinized, making them easier to document in standardized practices. Larger companies also tend to have more formalization because direct supervision and informal communication among employees do not operate as easily when large numbers of people are involved. External influences, such as government safety legislation and strict accounting rules, also encourage formalization.

Formalization may increase efficiency and compliance, but it can also create problems.[35] Rules and procedures reduce organizational flexibility, so employees follow prescribed behaviors even when the situation clearly calls for a customized response. High levels of formalization tend to undermine organizational learning and creativity. Some work rules become so convoluted that organizational efficiency would decline if they were actually followed as prescribed. Formalization is also a source of job dissatisfaction and work stress. Finally, rules and procedures have been known to take on a life of their own in some organizations. They become the focus of attention, rather than the organization's ultimate objectives of producing a product or service and serving dominant stakeholders.

MECHANISTIC VERSUS ORGANIC STRUCTURES

We discussed span of control, centralization, and formalization together because they cluster around two broader organizational forms: mechanistic and organic structures (see Exhibit 13.3).[36] A **mechanistic structure** is characterized by a narrow span of control and high degree of formalization and centralization. Mechanistic structures have many rules and procedures, limited decision making at lower levels, tall hierarchies of people in specialized roles, and vertical rather than horizontal communication flows. Tasks are rigidly defined and are altered only when sanctioned by higher authorities.

Companies with an **organic structure** have the opposite characteristics. They operate with a wide span of control, decentralized decision making, and little formalization. Tasks are fluid, adjusting to new situations and organizational needs. Valve Corporation, which was described at the beginning of this chapter, has a highly organic structure. With at most two layers (some claim it has one layer, and therefore no hierarchy), Valve's span of control is about as wide as a company can get. Decision making is decentralized down to teams and individuals. "Three people at the company can ship anything," says Greg Coomer, one of Valve's earliest employees. He explains that any employee alone can launch a product without permission, but the company encourages at least three people because "the work gets better if you just check with a couple of people before you decide to push a button."[37] Valve also has minimal formalization. The company doesn't have job descriptions and seems to have few lists of procedures for hiring, buying, or other activities.

mechanistic structure
An organizational structure with a narrow span of control and a high degree of formalization and centralization.

organic structure
An organizational structure with a wide span of control, little formalization, and decentralized decision making.

EXHIBIT 13.3

Contrasting Mechanistic and Organic Organizational Structures

MECHANISTIC STRUCTURE	ORGANIC STRUCTURE
	
Narrow span of control High centralization High formalization	Wide span of control High decentralization Low formalization

As a general rule, mechanistic structures operate better in stable environments because they rely on efficiency and routine behaviors. Organic structures work better in rapidly changing (i.e., dynamic) environments because they are more flexible and responsive to the changes. Organic structures are also more compatible with organizational learning and high-performance workplaces because they emphasize information sharing and an empowered workforce rather than hierarchy and status.[38] However, the effectiveness of organic structures depends on how well employees have developed their roles and expertise.[39] Without these conditions, employees are unable to coordinate effectively, resulting in errors and gross inefficiencies.

connect

Visit **connect.mcgrawhill.com** for activities and test questions to help you learn about the different forms of departmentalization.

Forms of Departmentalization

LO 13-3

Span of control, centralization, and formalization are important elements of organizational structure, but most people think about organizational charts when the discussion of organizational structure arises. The organizational chart represents the fourth element in the structuring of organizations, called *departmentalization*. Departmentalization specifies how employees and their activities are grouped together. It is a fundamental strategy for coordinating organizational activities because it influences organizational behavior in the following ways:[40]

- Departmentalization establishes the chain of command—the system of common supervision among positions and units within the organization. It frames the membership of formal work teams and typically determines which positions and units must share resources. Thus, departmentalization establishes interdependencies among employees and subunits.
- Departmentalization focuses people around common mental models or ways of thinking, such as serving clients, developing products, or supporting a particular skill set. This focus is typically anchored around the common budgets and measures of performance assigned to employees within each departmental unit.
- Departmentalization encourages specific people and work units to coordinate through informal communication. With common supervision and resources, members within each configuration typically work near each other, so they can use frequent and informal interaction to get the work done.

There are almost as many organizational charts as there are businesses, but the six most common pure types of departmentalization are simple, functional, divisional, team-based, matrix, and network.

SIMPLE STRUCTURE

Most companies begin with a *simple structure*.[41] They employ only a few people and typically offer only one distinct product or service. There is minimal hierarchy—usually just employees reporting to the owners. Employees perform broadly defined roles because there are insufficient economies of scale to assign them to specialized jobs. The simple structure is highly flexible and minimizes the walls that form between employees in other structures. However, the simple structure usually depends on the owner's direct supervision to coordinate work activities, so it is very difficult to operate as the company grows and becomes more complex.

FUNCTIONAL STRUCTURE

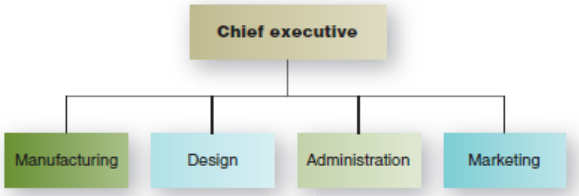
As organizations grow, they typically shift from a simple structure to a functional structure. Even after they adopt more complex organizational structures (which we discuss later), they will have a functional structure at some level of the hierarchy. A **functional structure** organizes employees around specific knowledge or other resources (see Exhibit 13.4). Employees with marketing expertise are grouped into a marketing unit, those with production skills are located in manufacturing, engineers are found in product development, and so on. Organizations with functional structures are typically centralized to coordinate their activities effectively.

Evaluating the Functional Structure The functional structure creates specialized pools of talent that typically serve everyone in the organization. This provides more economies of scale than are possible if functional specialists are spread over different parts of the organization. It increases employee identity with the specialization or profession. Direct supervision is easier in functional structures, because managers oversee people with common issues and expertise.[42]

The functional structure also has limitations.[43] Grouping employees around their skills tends to focus attention on those skills and related professional needs, rather than on the company's product, service, or client needs. Unless people are transferred from one function to the next, they might not develop a broader understanding of the business. Compared with other structures, the functional structure usually produces higher dysfunctional conflict and poorer coordination in serving clients or developing products. These problems occur because employees need to work with coworkers in other departments to complete organizational tasks, yet they have different subgoals and mental models of ideal work. Together, these problems require substantial formal controls and coordination when people are organized around functions.

functional structure
An organizational structure in which employees are organized around specific knowledge or other resources.

EXHIBIT 13.4
A Functional Organizational Structure



global connections 13.1

Toyota Shifts Gears from a Functional to Regional Structure[44]

Over the past few years, Toyota Motor Company has received scathing criticism for its ineffective handling of cars that suddenly accelerated. Some drivers reported that the company-designed floor mats pressed on the gas pedal, causing their car to suddenly speed up. Others argued that the electronic systems in the pedal were faulty. Toyota allegedly ignored the early complaints or attributed them mainly to driver error when the problem could not be replicated by its engineers.

The National Highway Traffic Safety Administration (NHTSA) grew increasingly frustrated with Toyota's public denials, but even more so with its slow response to the problems. It fined Toyota four times in recent years (some were the maximum fine allowed) for failing to report problems to the government regulator or for being too slow to recall faulty vehicles. Tensions became particularly strained after the NHTSA told Toyota to recall vehicles with faulty floor mats. The company issued the recall, but also announced that the NHTSA had concluded that "no defect exists" in the recalled vehicles. The next day, the NHTSA issued its own statement, saying that Toyota's announcement was "inaccurate and misleading."

How could one of the largest and most respected automakers in the world get into this situation? Whether through its own reflection or external pressure, Toyota commissioned a special panel of independent experts to find the answer. The panel offered recommendations regarding mechanical and electrical engineering, supplier product quality, and processes to address issues of quality and safety. But the panel's main conclusion was that Toyota's slow and inappropriate responses were mostly due to its organizational structure.

In particular, the review panel reported that Toyota was mainly organized around functional units (sales, engineering, manufacturing) and that the heads of these units in each region reported directly to headquarters in Japan. Toyota did not

have structural integration around regions, so its centralized functional structure resulted in silos of knowledge and slower decision making. The panel concluded: "Toyota's tightly-controlled global structure: (1) hindered information sharing and contributed to miscommunication; and (2) delayed response time to quality and safety issues, fueling criticism that Toyota was being unresponsive to regulators and customers."

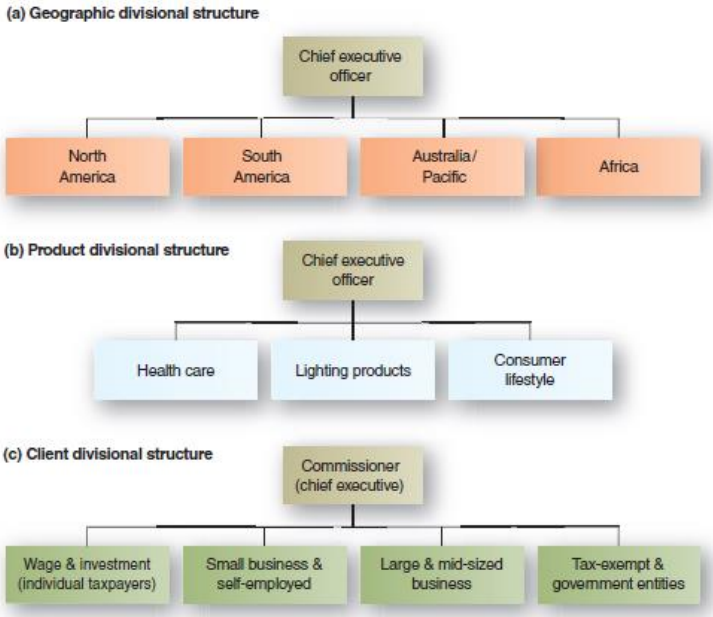
Toyota CEO Akio Toyoda agreed that Toyota's functional structure should be replaced with a geographic divisionalized structure. "Dealing with our overseas operations on a regional basis, rather than a functional basis, will enable us to conduct decision making on a more-comprehensive basis." Two years after the panel's report, Toyota introduced a new organizational structure that refocused power from functions to geographic regions. "Integrating Toyota's North America affiliates under a more unified and streamlined management structure will significantly enhance local responsibility over operations, clarify decision-making and strengthen our customer-first focus," says James Lentz, who has become president of Toyota's North American business.

DIVISIONAL STRUCTURE

divisional structure
An organizational structure in which employees are organized around geographic areas, outputs (products or services), or clients.

The **divisional structure** (sometimes called the *multidivisional* or *M-form* structure) groups employees around geographic areas, outputs (products or services), or clients. Exhibit 13.5 illustrates these three variations of divisional structure.[45] The *geographic divisional structure* organizes employees around distinct regions of the country or world. Exhibit 13.5(*a*) illustrates a geographic divisional structure adopted by Barrick Gold Corporation, the world's largest gold-mining company. The *product/service divisional structure* organizes employees around distinct outputs. Exhibit 13.5(*b*) illustrates a simplified version of this type of structure at Philips. The Dutch electronics company divides its workforce mainly into three divisions: health care products, lighting products, and consumer products. (Philips also has a fourth organizational group consisting of the research and design functions.) The *client divisional structure* organizes employees around specific customer groups. Exhibit 13.5(*c*) illustrates a customer-focused divisional structure similar to one adopted by the U.S. Internal Revenue Service.[46]

EXHIBIT 13.5 Three Types of Divisional Structure



Note: Diagram (a) shows a global geographic divisional structure similar to Barrick Gold Corp.; diagram (b) is similar to the product divisions at Philips; diagram (c) is similar to the customer-focused structure at the U.S. Internal Revenue Service.

Which form of divisional structure should large organizations adopt? The answer depends mainly on the primary source of environmental diversity or uncertainty.[47] Suppose an organization has one type of product sold to people across the country. If customers have different needs across regions, or if state governments impose different regulations on the product, then a geographic structure would be best to be more vigilant of this diversity. On the other hand, if the company sells several types of products across the country and customer preferences and government regulations are similar everywhere, then a product structure would likely work best.

Coca-Cola, Nestlé, and many other food and beverage companies are organized mainly around geographic regions because consumer tastes and preferred marketing strategies vary considerably around the world. Even though McDonald's makes the same Big Mac throughout the world, the company has more fish products in Hong Kong and more vegetarian products in India, in line with traditional diets in those countries. Philips, on the other hand, is organized around products because consumer preferences around the world are similar within each product group. Hospitals from Geneva, Switzerland, to Santiago, Chile, buy similar medical equipment from Philips, whereas the manufacturing and marketing of these products are quite different from Philips's consumer electronics business.

Many companies are moving away from structures that organize people around geographic clusters.[48] One reason is that clients can purchase products online and communicate with businesses from almost anywhere in the world, so local representation is becoming less critical. Reduced geographic variation is another reason for the shift away from geographic structures; freer trade has reduced government intervention, and consumer preferences for many products and services are becoming more similar (converging) around the world. The third reason is that large companies increasingly have global business customers who demand one global point of purchase, not one in every country or region.

Globally Integrated Enterprise The shift away from geographic and toward product or client-based divisional structures reflects the trend toward the **globally integrated enterprise (GIE).**[49] As the label implies, a globally integrated enterprise connects work processes around the world, rather than replicating them within each country or region. This type of organization typically organizes people around product or client divisions. Even functional units—production, marketing, design, human resources, and so on—serve the company worldwide rather than within specific geographic clusters. These functions are sensitive to cultural and market differences and have local representation to support that sensitivity. However, local representatives are associates of a global function rather than a local subsidiary copied across several regions. Indeed, a GIE is marked by a dramatic increase in virtual teamwork, because employees are assigned global projects and ongoing responsibilities for work units that transcend geographic boundaries.

At the core of the GIE model is the notion that companies should move their operations where the people with the best skill set and cost efficiencies are located. IBM senior executive Michael Cannon-Brookes describes the GIE structure using IBM's business in Japan as an example: "Under our GIE model, we now have the HR for IBM Japan done in Manila, accounts receivable done in Shanghai, the accounting done in Kuala Lumpur, procurement in Shenzhen, and the customer service help desk is in Brisbane. That is true global integration, and it is also optimal for our Japan business."[50]

Evaluating the Divisional Structure The divisional organizational structure is a building-block structure; it accommodates growth relatively easily and focuses employee attention on products or customers rather than tasks. Different products, services, or clients can be accommodated by sprouting new divisions. This structure also directs employee attention to customers and products, rather than to their own specialized knowledge.[51] These advantages are offset by a number of limitations. First, the divisional structure tends to duplicate resources, such as production equipment and engineering or information technology expertise. Also, unless the division is quite large, resources are not used as efficiently as they are in functional structures where resources are pooled across the entire organization. The divisional structure also creates silos of knowledge. Expertise is spread across several autonomous business units, which reduces the ability and perhaps motivation of the people in one division to share their knowledge with counterparts in other divisions. In contrast, a functional structure groups experts together, thereby supporting knowledge sharing.

Finally, the preferred divisional structure depends on the company's primary source of environmental diversity or uncertainty. This principle seems to be applied easily enough at Coca-Cola, McDonald's, and Philips, but many global organizations experience diversity and uncertainty in terms of geography, product, *and* clients. Consequently, some organizations revise their structures back and forth or create complex structures that attempt to give all three dimensions equal status. This waffling generates further complications, because organizational structure decisions shift power and status among executives. If the company switches from a geographic to a product structure, people who lead the geographic fiefdoms suddenly get demoted under the product chiefs. In short, leaders of global organizations struggle to find the best divisional structure, often resulting in the departure of some executives and frustration among those who remain.

globally integrated enterprise An organizational structure in which work processes and executive functions are distributed around the world through global centers, rather than developed in a home country and replicated in satellite countries or regions.

W. L. Gore & Associates employs 9,500 people but no managers. That's because the Newark, Delaware–based manufacturer of fabrics (Gore-Tex®), electronics, industrial, and medical products has adopted an organizational structure where most employees (called "associates") are organized around self-directed teams. Day-to-day decisions are decentralized to these teams, which are formed around idea champions and plenty of shared leadership. "Your team is your boss, because you don't want to let them down," says Diane Davidson, who works in Gore's fashion products group. "Everyone's your boss, and no one's your boss."[52]

TEAM-BASED STRUCTURE

We began this chapter describing Valve Corporation, the Bellevue, Washington, games software and entertainment company with an unusual organizational structure. Valve's structure is decidedly flat (minimal hierarchy), but it is perhaps best described as a completely team-based organizational structure. A **team-based organizational structure** is built around self-directed teams that complete an entire piece of work, such as manufacturing a product or developing an electronic game. This type of structure is usually organic. There is a wide span of control because teams operate with minimal supervision. In extreme situations such as at Valve, there is no formal leader, just someone selected by other team members to help coordinate the work and liaise with top management.

Team structures are highly decentralized because almost all day-to-day decisions are made by team members rather than someone further up the organizational hierarchy. Many team-based structures also have low formalization, because teams are given relatively few rules about how to organize their work. Instead, executives assign quality and quantity output targets, and often productivity improvement goals, to each team. Teams are then encouraged to use available resources and their own initiative to achieve those objectives.

Team-based structures are usually found within the manufacturing or service operations of larger divisional structures. Several GE Aircraft Engines plants are organized as team-based structures, but these plants operate within GE's larger divisional structure. However, a small number of firms apply the team-based structure from top to bottom, including W. L. Gore & Associates, Semco SA, and Valve Corporation, where almost all associates work in teams.

Evaluating the Team-Based Structure The team-based structure has gained popularity because it tends to be flexible and responsive in turbulent environments.[53] It can reduce costs, because teams have less reliance on formal hierarchy (direct supervision). A cross-functional team structure improves communication and cooperation across traditional boundaries. With greater autonomy, this structure also allows quicker and more informed decision making.[54] For this reason, some hospitals have shifted from functional departments to cross-functional teams. Teams composed of nurses, radiologists, anesthetists, a pharmacology representative, possibly social workers, a rehabilitation therapist, and other specialists communicate and coordinate more efficiently, thereby reducing delays and errors.[55]

team-based organizational structure
An organizational structure built around self-directed teams that complete an entire piece of work.

Contrasted with these benefits, the team-based structure can be costly to maintain, due to the need for ongoing interpersonal skills training. Teamwork potentially takes more time to coordinate than formal hierarchy during the early stages of team development. Employees may experience more stress due to increased ambiguity in their roles. Team leaders also experience more stress due to increased conflict, loss of functional power, and unclear career progression ladders. In addition, team structures suffer from duplication of resources and potential competition (and lack of resource sharing) across teams.[56]

MATRIX STRUCTURE

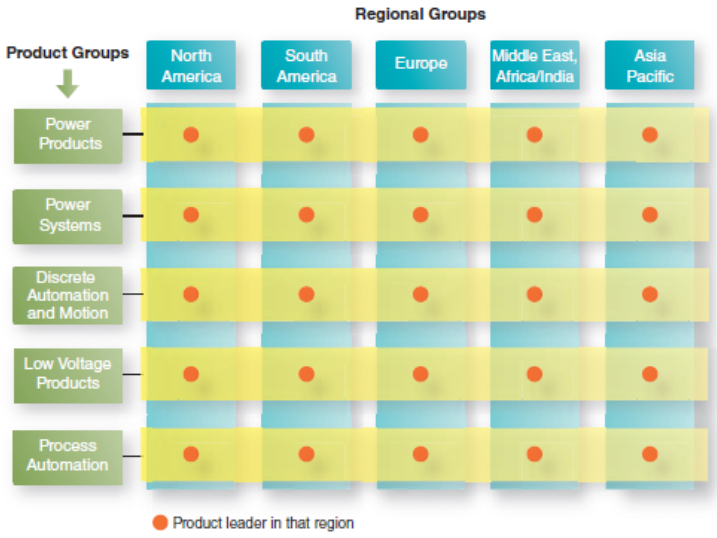
ABB Group, one of the world's largest power and automation technology engineering firms, has five product divisions, such as power products and process automation. It employs more than 140,000 people across 100 countries, so the global giant also has eight regional groups (North America, IMEA, and so forth). What organizational structure would work best for ABB? For example, should the head of power products in North America report to the worldwide head of power products in Zurich, Switzerland, or to the head of North American operations?

For ABB, the answer is to have the regional product leaders report to both the regional chiefs and the product chiefs back at global headquarters. In other words, ABB has a **matrix structure,** which overlays two structures (such as a geographic divisional and product structure) to leverage the benefits of both.[57] Exhibit 13.6 shows a geographic–product matrix structure, which is a simplified version of ABB's structure. The dots represent the individuals who have two bosses. For example, the head of power products in North America reports to both the worldwide head of the product group and to the head of North American operations.

matrix structure
An organizational structure that overlays two structures (such as a geographic divisional and a product structure) to leverage the benefits of both.

A common mistaken belief is that everyone in this type of matrix organizational structure reports to two bosses. In reality, only managers at one level in the organization (typically country-specific product managers) report to two bosses. For example, though the manager responsible for power products in North America reports to both the worldwide head of the product group and to the head of North American operations, employees below that country product leader report to only a manager in North America.

EXHIBIT 13.6 Matrix Organizational Structure Similar to ABB Group



Note: This diagram is for illustrative purposes only. ABB's structure has eight regional groups rather than the five shown here. It also has four non-matrixed functional groups reporting directly to the CEO. Also, this diagram assumes ABB has a pure matrix structure, where both product and regional chiefs have equal power, whereas either the regional or product groups might have more direct line authority.

The geographic-product matrix structure is likely the most common matrix design among global companies. For instance, Nestlé, Procter & Gamble, and Shell have variations of this matrix structure, because these firms recognize that regional groups and products/services groups are equally important. Other variations of matrix structures also exist in global businesses, however. Macquarie Group overlays client groups (e.g., securities, investment funds, and currencies/commodities) with four functional groups (risk management, legal/governance, financial management, and corporate operations).[58]

Global organizations tend to have complex designs that combine different types of structures, so a "pure" matrix design is relatively uncommon. A pure matrix gives equal power to leaders of both groups (regions and products, for example), but some companies give more power to one set of groups while the other set of groups has "dotted line" or advisory authority. So, although ABB's head of power products has two bosses, one of them might have more final say or line authority than the other. Some companies also deviate from the pure matrix structure by applying it only to some regions. One such example is Cummins Inc., which is mainly organized around product divisions but has a matrix structure in China, India, and Russia. These markets are large, with high potential, and are potentially less visible to headquarters, so the country leaders are given as much authority as the product leaders within those regions. "I think in China there's still enough lack of transparency, there's still enough uniqueness to the market that having some kind of coordination across business units gets the greatest synergies," explains Michael Barbalas, China president of Goodrich Corporation.[59]

So far, we have described matrix structures for global or otherwise large and complex organizations. Another type of matrix structure overlays functional units with project teams and exists in small or large companies.[60] Bioware adopted this project-functional matrix structure soon after the Canadian electronic games company was born a decade ago. Most Bioware employees have two managers. One manager leads the specific project where employees are assigned, such as *Star Wars*, *Baldur's Gate*, and *Dragon Age*; the other manager is head of the employee's functional specialization, such as art, programming, audio, quality assurance, and design.[61] Employees are assigned permanently to their functional unit but physically work with the temporary project team. When the project nears completion, the functional boss reassigns employees in his or her functional specialization to another project.

Evaluating the Matrix Structure The functional–project matrix structure usually makes very good use of resources and expertise, making it ideal for project-based organizations with fluctuating workloads. When properly managed, it improves communication efficiency, project flexibility, and innovation, compared with purely functional or divisional designs. It focuses employees on serving clients or creating products yet keeps people organized around their specialization, so knowledge sharing improves and resources are used more efficiently. Matrix structures for global organizations (e.g., geographic–product structure) are also a logical choice when, as in the case of ABB Group, two different dimensions (regions and products) are equally important. Structures determine executive power and what should receive priority; the matrix structure works best when the business environment is complex and two different dimensions deserve equal attention and integration. Executives who have worked in a global matrix also say they have more freedom, likely because their two bosses are more advisory and less command and control focused.[62]

In spite of these advantages, the matrix structure has several well-known problems.[63] One concern is that it increases conflict among managers who equally share power. Employees working at the matrix level have two bosses and, consequently, two sets of priorities that aren't always aligned. Project leaders might squabble with functional leaders regarding the assignment of specific employees to projects as well as regarding the employee's technical competence. However, successful companies manage this conflict by developing and promoting leaders who can work effectively in matrix structures. "Of course there's potential for

Hana Financial Group reorganized around a matrix structure that overlaps its client businesses (retail banking, brokerage, insurance) with product groups (money management, investments, bonds). The Korean bank says the new structure has noticeably improved collaboration across businesses and produced better financial results. However, Korea's financial supervisory service (FSS) claims Hana's matrix structure is also partly responsible for widespread embezzlement of gift certificates for tourists at about 60 bank branches. "In a matrix structure, marketing, performance reviews, and the power to make decisions on personnel lies with the head of the business unit, while internal control and risk management are the responsibility of the affiliated company's CEO," explains a high-ranking FSS official. "This can lead to a blind spot in management."[65]

friction," says Chandrasekhar Sripada, human resources head at IBM India. "In fact, one of the prerequisites to attaining a leadership position at IBM is the ability to function in a matrix structure."[64]

Ambiguous accountability is another challenge with matrix structures. In a functional or divisional structure, one manager is responsible for everything, even the most unexpected issues. But in a matrix structure, the unusual problems don't get resolved because neither manager takes ownership of them.[66] Due to this ambiguous accountability, matrix structures have been blamed for corporate ethical misconduct, such as embezzlement at Hana Financial Group in Korea and massive bribes at Siemens AG in Germany. Oracle president Mark Hurd warned of this problem a few years ago when he was CEO of Hewlett-Packard: "The more accountable I can make you, the easier it is for you to show you're a great performer," says Hurd. "The more I use a matrix, the easier I make it to blame someone else."[67] The combination of dysfunctional conflict and ambiguous accountability in matrix structures also explains why some employees experience more stress and some managers are less satisfied with their work arrangements.

NETWORK STRUCTURE

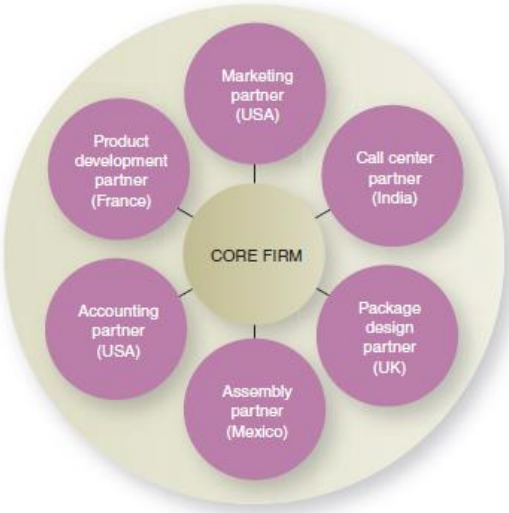
BMW AG and Daimler AG aren't eager to let you know this, but some of their vehicles, designed and constructed with Germanic precision, are neither designed nor constructed by them or in Germany. Much of BMW's X3, for example, was designed by Magna Steyr in Austria. Magna also manufactured the vehicle in Austria, until BMW transferred this work to its manufacturing plant in the United States. The contract manufacturer also builds Daimler's off-road G-class Mercedes. Both BMW and Daimler Benz are hub organizations that own and market their respective brands, whereas Magna and other suppliers are spokes around the hub that provide production, engineering, and other services that get the auto firms' luxury products to customers.[68]

network structure
An alliance of several organizations for the purpose of creating a product or serving a client.

BMW, Daimler, and many other organizations are moving toward a **network structure** as they design and build a product or serve a client through an alliance of several organizations.[69] As Exhibit 13.7 illustrates, this collaborative structure typically consists of several satellite organizations bee-hived around a hub or core firm. The core firm orchestrates the network process and provides one or two other core competencies, such as marketing or

EXHIBIT 13.7

A Network Organizational Structure



product development. In our example, BMW or Mercedes is the hub that provides marketing and management, whereas other firms perform many other functions. The core firm might be the main contact with customers, but most of the product or service delivery and support activities are farmed out to satellite organizations located anywhere in the world. Extranets (web-based networks with partners) and other technologies ensure that information flows easily and openly between the core firm and its array of satellites.[70]

One of the main forces pushing toward a network structure is the recognition that an organization has only a few *core competencies*. A core competency is a knowledge base that resides throughout the organization and provides a strategic advantage. As companies discover their core competency, they outsource noncritical tasks to other organizations that have a core competency at performing those tasks. For instance, BMW decided long ago that facilities management is not one of its core competencies, so it outsourced this function from its British engine plant to Dalkia, which specializes in facility maintenance and energy management.[71]

Companies are also more likely to form network structures when technology is changing quickly and production processes are complex or varied.[72] Many firms cannot keep up with the hyperfast changes in information technology, so they have outsourced their entire information system departments to IBM, HP Enterprise Business, and other firms that specialize in information system services. Similarly, many high-technology firms form networks with Flextronics, Celestica, and other electronic equipment manufacturers that have expertise in diverse production processes.

Evaluating the Network Structure Organizational behavior theorists have long argued that organizational leaders must develop a metaphor of organizations as plasma-like organisms rather than rigid machines.[73] Network structures come close to the organism metaphor because they offer the flexibility to realign their structure with changing environmental requirements. If customers demand a new product or service, the core firm forms new alliances with other firms offering the appropriate resources. For example, by working with Magna International, BMW was probably able to develop and launch the X3 vehicle

much sooner than would have been the case if it had performed these tasks on its own. When BMW needs a different type of manufacturing, it isn't saddled with nonessential facilities and resources. Network structures also offer efficiencies because the core firm becomes globally competitive as it shops worldwide for subcontractors with the best people and the best technology at the best price. Indeed, the pressures of global competition have made network structures more vital, and computer-based information technology has made them possible.[74]

A potential disadvantage of network structures is that they expose the core firm to market forces. Other companies may bid up the price for subcontractors, whereas the short-term cost would be lower if the company hired its own employees to perform the same function. Another problem is that although information technology makes worldwide communication much easier, it will never replace the degree of control organizations have when manufacturing, marketing, and other functions are in-house. The core firm can use arm's-length incentives and contract provisions to maintain the subcontractor's quality, but these actions are relatively crude compared with maintaining the quality of work performed by in-house employees.

Contingencies of Organizational Design

LO 13-4

Most organizational behavior theories and concepts have contingencies: Ideas that work well in one situation might not work as well in another situation. This contingency approach is certainly relevant when choosing the most appropriate organizational structure.[75] In this section, we introduce four contingencies of organizational design: external environment, size, technology, and strategy.

EXTERNAL ENVIRONMENT

The best structure for an organization depends on its external environment. The external environment includes anything outside the organization, including most stakeholders (e.g., clients, suppliers, government), resources (e.g., raw materials, human resources, information, finances), and competitors. Four characteristics of external environments influence the type of organizational structure best suited to a particular situation: dynamism, complexity, diversity, and hostility.[76]

Dynamic versus Stable Environments Dynamic environments have a high rate of change, leading to novel situations and a lack of identifiable patterns. Organic structures in which employees are experienced and coordinate well in teams are better suited to dynamic environments, so the organization can adapt more quickly to changes.[77] In contrast, stable environments are characterized by regular cycles of activity and steady changes in supply and demand for inputs and outputs. Events are more predictable, enabling the firm to apply rules and procedures. Mechanistic structures are more efficient when the environment is predictable, so they tend to be more profitable than organic structures in these conditions.

Complex versus Simple Environments Complex environments have many elements, whereas simple environments have few things to monitor. As an example, a major university library operates in a more complex environment than a small-town public library.

The university library's clients require several types of services—book borrowing, online full-text databases, research centers, course reserve collections, and so on. A small-town public library has fewer of these demands placed on it. The more complex the environment, the more decentralized the organization should become. Decentralization is a logical choice for complex environments, because decisions are pushed down to people and subunits with the necessary information to make informed choices.

Diverse versus Integrated Environments Organizations located in diverse environments have a greater variety of products or services, clients, and regions. In contrast, an integrated environment has only one client, product, and geographic area. The more diversified the environment, the more the firm needs to use a divisional structure aligned with that diversity. If it sells a single product around the world, a geographic divisional structure would align best with the firm's geographic diversity, for example.

Hostile versus Munificent Environments Firms located in a hostile environment face resource scarcity and more competition in the marketplace. Hostile environments are typically dynamic, because they reduce the predictability of access to resources and demand for outputs. Organic structures tend to be best in hostile environments. However, when the environment is extremely hostile—such as a severe shortage of supplies or lower market share—organizations tend to temporarily centralize so that decisions can be made more quickly and executives feel more comfortable being in control.[78] Ironically, centralization may result in lower-quality decisions during organizational crises, because top management has less information, particularly when the environment is complex.

ORGANIZATIONAL SIZE

Larger organizations adopt different structures than do smaller organizations, for good reason.[79] As the number of employees increases, job specialization increases, due to the greater division of labor. The greater division of labor requires more elaborate coordinating mechanisms. Thus, larger firms make greater use of standardization (particularly work processes and outcomes) to coordinate work activities. These coordinating mechanisms create an administrative hierarchy and greater formalization. Historically, larger organizations make less use of informal communication as a coordinating mechanism. However, emerging information technologies and an increased emphasis on empowerment have caused informal communication to regain its importance in large firms.[80]

Larger organizations also tend to be more decentralized. Executives have neither sufficient time nor expertise to process all the decisions that significantly influence the business as it grows. Therefore, decision-making authority is pushed down to lower levels, where employees can make decisions about issues within their narrower range of responsibility.

For more than four decades, Nucor Corporation proudly maintained a lean, flat organizational structure with only four management layers: supervisors, functional managers, plant managers, and CEO. The CEO could directly manage more than two dozen plant managers because they operated as independent businesses. Today, Nucor is America's largest steelmaker, employing 20,000 people at more than four dozen facilities worldwide. Managing so many direct reports would overwhelm most executives, so Nucor then-CEO (now chairman) Dan DiMicco reluctantly added five executive vice presidents, creating another layer of management. "I needed to be free to make decisions on trade battles," says DiMicco apologetically.[81]

TECHNOLOGY

Technology is another factor to consider when designing the best organizational structure for the situation.[82] *Technology* refers to the mechanisms or processes an organization relies on to make its products or services. In other words, technology isn't just the equipment used to make something; it also includes how the production process is physically arranged and how the production work is divided among employees. One technological contingency is *variability*—the number of exceptions to standard procedure that tend to occur. In work processes with low variability, jobs are routine and follow standard operating procedures. Another contingency is *analyzability*—the predictability or difficulty of the required work. The less analyzable the work, the more it requires experts with sufficient discretion to address the work challenges (see Chapter 6).

An organic, rather than a mechanistic, structure should be introduced when employees perform tasks with high variability and low analyzability, such as in a research setting. Employees in these settings face unique situations with little opportunity for repetition. In contrast, a mechanistic structure is preferred where the technology has low variability and high analyzability, such as an assembly line. The work is routine and highly predictable, an ideal situation for a mechanistic structure to operate efficiently.

ORGANIZATIONAL STRATEGY

Organizational strategy refers to the way the organization positions itself in its setting in relation to its stakeholders, given the organization's resources, capabilities, and mission.[83] In other words, strategy represents the decisions and actions applied to achieve the organization's goals. Although size, technology, and environment influence the optimal organizational structure, these contingencies do not necessarily determine structure. Instead, corporate leaders formulate and implement strategies that shape both the characteristics of these contingencies and the organization's resulting structure.

This concept is summed up with the simple phrase, "structure follows strategy."[84] Organizational leaders decide how large to grow and which technologies to use. They take steps to define and manipulate their environments, rather than let the organization's fate be entirely determined by external influences. Furthermore, organizational structures don't evolve as a natural response to environmental conditions; they result from conscious human decisions. Thus, organizational strategy influences both the contingencies of structure and the structure itself.

organizational strategy
The way the organization positions itself in its setting in relation to its stakeholders, given the organization's resources, capabilities, and mission.

If a company's strategy is to compete through innovation, a more organic structure would be preferred, because it is easier for employees to share knowledge and be creative. If a company chooses a low-cost strategy, a mechanistic structure is preferred, because it maximizes production and service efficiency.[85] Overall, it is now apparent that organizational structure is influenced by size, technology, and environment, but the organization's strategy may reshape these elements and loosen their connection to organizational structure.

chapter summary

13-1 Describe three types of coordination in organizational structures.

Organizational structure is the division of labor, as well as the patterns of coordination, communication, workflow, and formal power, that direct organizational activities. All organizational structures divide labor into distinct tasks and coordinate that labor to accomplish common goals. The primary means of coordination are informal communication, formal hierarchy, and standardization.

13-2 Discuss the role and effects of span of control, centralization, and formalization, and relate these elements to organic and mechanistic organizational structures.

The four basic elements of organizational structure are span of control, centralization, formalization, and departmentalization. The optimal span of control—the number of people directly reporting to the next level in the hierarchy—depends on what coordinating mechanisms are present other than formal hierarchy, whether employees perform routine tasks, and how

much interdependence there is among employees within the department.

Centralization occurs when formal decision authority is held by a small group of people, typically senior executives. Many companies decentralize as they become larger and more complex, but some sections of the company may remain centralized while other sections decentralize. Formalization is the degree to which organizations standardize behavior through rules, procedures, formal training, and related mechanisms. Companies become more formalized as they get older and larger. Formalization tends to reduce organizational flexibility, organizational learning, creativity, and job satisfaction.

Span of control, centralization, and formalization cluster into mechanistic and organic structures. Mechanistic structures are characterized by a narrow span of control and a high degree of formalization and centralization. Companies with an organic structure have the opposite characteristics.

13-3 Identify and evaluate six types of departmentalization.

Departmentalization specifies how employees and their activities are grouped together. It establishes the chain of command, focuses people around common mental models, and encourages coordination through informal communication among people and subunits. A simple structure employs few people, has minimal hierarchy, and typically offers one distinct product or service. A functional structure organizes employees around specific knowledge or other resources. This structure fosters greater specialization and improves direct supervision, but it weakens the focus on serving clients or developing products.

A divisional structure groups employees around geographic areas, clients, or outputs. This structure accommodates growth and focuses employee attention on products or customers rather than tasks. However, this structure also duplicates resources and creates silos of knowledge. Team-based structures are very flat, with low formalization, and organize self-directed teams around work processes rather than functional specialties. The matrix structure combines two structures to leverage the benefits of both types. However, this approach requires more coordination than functional or pure divisional structures, may dilute accountability, and increases conflict. A network structure is an alliance of several organizations for the purpose of creating a product or serving a client.

13-4 Explain the relevance of the external environment, organizational size, technology, and strategy for designing an organizational structure.

The best organizational structure depends on whether the environment is dynamic or stable, complex or simple, diverse or integrated, and hostile or munificent. Another contingency is the organization's size. Larger organizations need to become more decentralized and more formalized. The work unit's technology—including variability of work and analyzability of problems—influences whether it should adopt an organic or mechanistic structure. These contingencies influence but do not necessarily determine structure. Instead, corporate leaders formulate and implement strategies that shape both the characteristics of these contingencies and the organization's resulting structure.

key terms

centralization, p. 377
divisional structure, p. 381
formalization, p. 377
functional structure, p. 380
globally integrated enterprise, p. 383
matrix structure, p. 385
mechanistic structure, p. 378
network structure, p. 387
organic structure, p. 378
organizational strategy, p. 391
organizational structure, p. 370
span of control, p. 374
team-based organizational structure, p. 384

critical thinking questions

1. Valve Corporation's organizational structure was described at the beginning of this chapter. What coordinating mechanism is likely most common in this organization? Describe the extent and form in which the other two types of coordination might be apparent at Valve.
2. Think about the business school or other organizational unit whose classes you are currently attending. What is the dominant coordinating mechanism used to guide or control the instructor? Why is this coordinating mechanism used the most here?
3. Administrative theorists concluded many decades ago that the most effective organizations have a narrow span of control. Yet today's top-performing manufacturing firms have a wide span of control. Why is this possible? Under what circumstances, if any, should manufacturing firms have a narrow span of control?
4. Leaders of large organizations struggle to identify the best level and types of centralization and decentralization. What should companies consider when determining the degree of decentralization?
5. Diversified Technologies, Inc. (DTI), makes four types of products, each type to be sold to different types of clients. For example, one product is sold exclusively to automobile repair shops, whereas another is used mainly in hospitals. Expectations within each client group are surprisingly similar throughout the world. The company has separate marketing, product design, and manufacturing facilities in Asia, North America, Europe, and South America because, until