



## Reporting Relationships

Once required work activities and departments are defined, the next question is how these activities and departments should fit together in the organizational hierarchy. Reporting relationships, often called the *chain of command*, are represented by vertical lines on an organization chart. The chain of command should be an unbroken line of authority that links all persons in an organization and shows who reports to whom. In a large organization such as General Electric, Bank of America, or Microsoft, 100 or more charts might be needed to identify reporting relationships among thousands of employees. The definition of departments and the drawing of reporting relationships define how employees are to be grouped into departments.

## Departmental Grouping Options

Options for departmental grouping, including functional grouping, divisional grouping, multifocused grouping, horizontal grouping, and virtual network grouping, are illustrated in Exhibit 2.6. **Departmental grouping** affects employees because they share a common supervisor and common resources, are jointly responsible for performance, and tend to identify and collaborate with one another.<sup>27</sup>

**Functional grouping** places together employees who perform similar functions or work processes or who bring similar knowledge and skills to bear. For example, all marketing people work together under the same supervisor, as do all manufacturing employees, all human resources people, and all engineers. For an Internet company, all the people associated with maintaining the website might be grouped together in one department. In a scientific research firm, all chemists may be grouped in a department different from biologists because they represent different disciplines.

**Divisional grouping** means people are organized according to what the organization produces. All people required to produce toothpaste—including personnel in marketing, manufacturing, and sales—are grouped together under one executive. In huge corporations, such as Time Warner Corporation, some product or service lines may represent independent businesses, such as Warner Brothers Entertainment (movies and videos), Time Inc. (publisher of magazines such as *Sports Illustrated*, *Time*, and *People*), and AOL (Internet services).

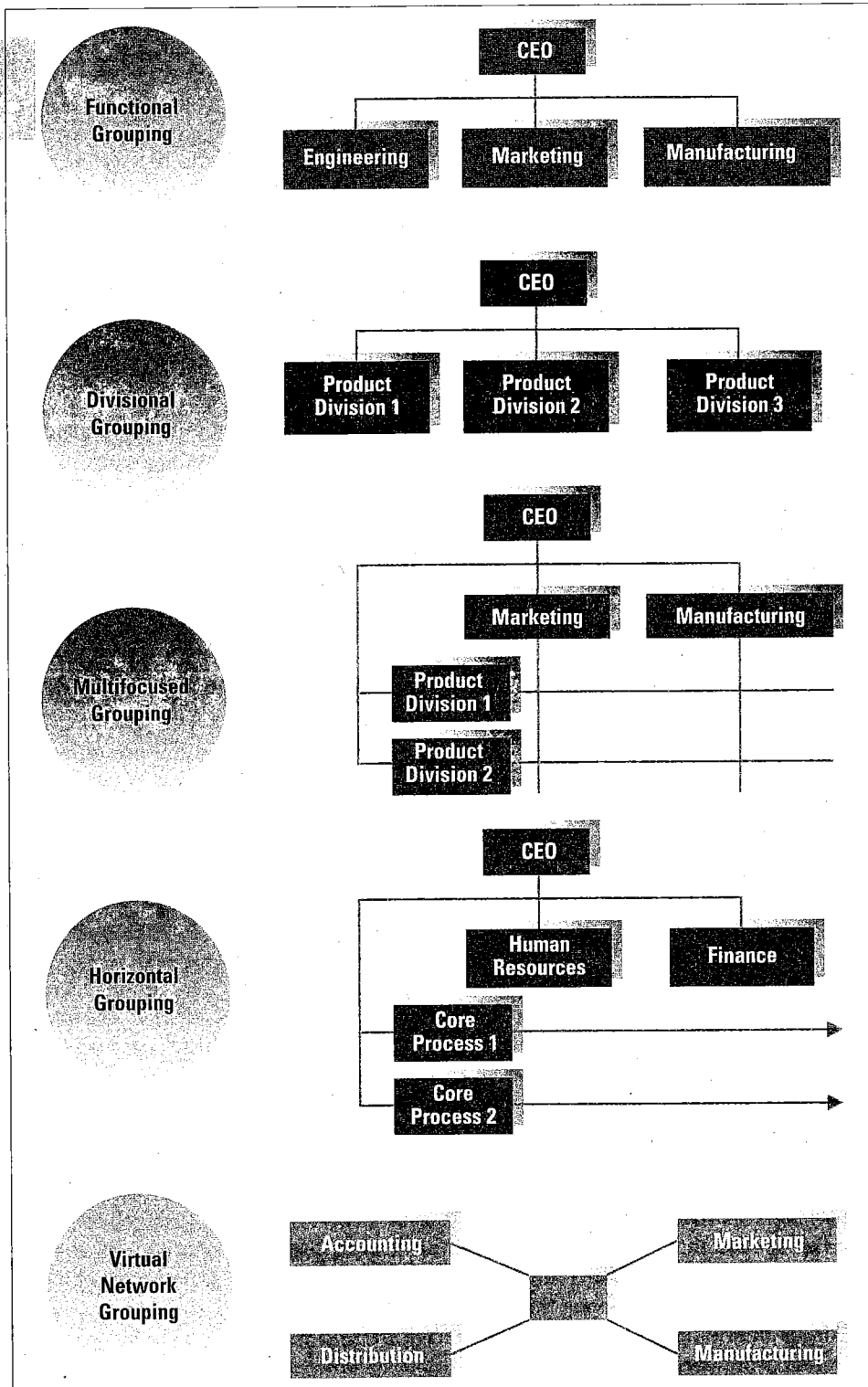
**Multifocused grouping** means an organization embraces two or more structural grouping alternatives simultaneously. These structural forms are often called *matrix* or *hybrid*. They will be discussed in more detail later in this chapter. An organization may need to group by function and product division simultaneously or might need to combine characteristics of several structural options.

**Horizontal grouping** means employees are organized around core work processes, the end-to-end work, information, and material flows that provide value directly to customers. All the people who work on a core process are brought together in a group rather than being separated into functional departments. For example, at field offices of the U.S. Occupational Safety and Health Administration, teams of workers representing various functions respond to complaints from American workers regarding health and safety issues, rather than having the work divided up among specialized employees.<sup>28</sup>

**Virtual network grouping** is the most recent approach to departmental grouping. With this grouping, the organization is a loosely connected cluster of separate components. In essence, departments are separate organizations that are electronically connected for the sharing of information and completion of tasks. Departments can be spread all over the world rather than located together in one geographic location.

**EXHIBIT 2.6**

Structural Design Options  
for Grouping Employees  
into Departments



Source: Adapted from David Nadler and Michael Tushman, *Strategic Organization Design* (Glenview, Ill.: Scott Foresman, 1988), 68.



The organizational forms described in Exhibit 2.6 provide the overall options within which the organization chart is drawn and the detailed structure is designed. Each structural design alternative has significant strengths and weaknesses, to which we now turn.

## FUNCTIONAL, DIVISIONAL, AND GEOGRAPHIC DESIGNS

Functional grouping and divisional grouping are the two most common approaches to structural design.

### Functional Structure

In a **functional structure**, activities are grouped together by common function from the bottom to the top of the organization. All engineers are located in the engineering department, and the vice president of engineering is responsible for all engineering activities. The same is true in marketing, R&D, and manufacturing. An example of the functional organization structure was shown in Exhibit 2.1 earlier in this chapter.

With a functional structure, all human knowledge and skills with respect to specific activities are consolidated, providing a valuable depth of knowledge for the organization. This structure is most effective when in-depth expertise is critical to meeting organizational goals, when the organization needs to be controlled and coordinated through the vertical hierarchy, and when efficiency is important. The structure can be quite effective if there is little need for horizontal coordination. Exhibit 2.7 summarizes the strengths and weaknesses of the functional structure.

One strength of the functional structure is that it promotes economy of scale within functions. Economy of scale results when all employees are located in the same place and can share facilities. Producing all products in a single plant, for example, enables the plant to acquire the latest machinery. Constructing only

**EXHIBIT 2.7**  
Strengths and  
Weaknesses of  
Functional Organization  
Structure

| Strengths  | Weaknesses   |
|--|--|
| 1. Allows economies of scale within functional departments | 1. Slow response time to environmental changes             |
| 2. Enables in-depth knowledge and skill development        | 2. May cause decisions to pile on top; hierarchy overload  |
| 3. Enables organization to accomplish functional goals     | 3. Leads to poor horizontal coordination among departments |
| 4. Is best with only one or a few products                 | 4. Results in less innovation                              |
|  | 5. Involves restricted view of organizational goals        |

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one facility instead of separate facilities for each product line reduces duplication and waste. The functional structure also promotes in-depth skill development of employees. Employees are exposed to a range of functional activities within their own department.<sup>29</sup>

The main weakness of the functional structure is a slow response to environmental changes that require coordination across departments. The vertical hierarchy becomes overloaded. Decisions pile up, and top managers do not respond fast enough. Other disadvantages of the functional structure are that innovation is slow because of poor coordination, and each employee has a restricted view of overall goals.

Some organizations perform very effectively with a functional structure. Consider the case of Blue Bell Creameries, Inc.



## IN PRACTICE

### Blue Bell Creameries, Inc.

It is the third best-selling brand of ice cream in the United States but many Americans have never heard of it. That's because Blue Bell Creameries, with headquarters in Brenham,

Texas, sells its ice cream in only seventeen, mostly southern, states. Keeping distribution limited "allows us to focus on making and selling ice cream," says CEO and president Paul Kruse, the fourth generation of Kruses to run Blue Bell. Or, as another family slogan puts it, "It's a cinch by the inch but it's hard by the yard."

The "little creamery in Brenham," as the company markets itself, is obsessed with quality control and doesn't let anyone outside the company touch its product from the plant to the freezer case. "We make it all, we deliver it all in our own trucks, and we maintain all the stock in retailers' freezers," says chairman Ed Kruse. At one time, the company was even buying packages of Oreos at retail prices, cutting open each package by hand, and dumping the cookies into the mixers to make Blue Bell's Cookies 'n Cream flavor. Blue Bell sells more than \$400 million in ice cream a year and commands a huge percentage of the ice cream market in Texas, Louisiana, and Alabama. People outside the region often pay \$89 to have four half-gallons packed in dry ice and shipped to them. Despite the demand, management refuses to compromise quality by expanding into regions that cannot be satisfactorily serviced or by growing so fast that the company can't adequately train employees in the art of making ice cream.

Blue Bell's major departments are sales, quality control, production, maintenance, and distribution. There is also an accounting department and a small R&D group. Most employees have been with the company for years and have a wealth of experience in making quality ice cream. The environment is stable. The customer base is well established. The only change has been the increase in demand for Blue Bell Ice Cream.<sup>30</sup> ■

The functional structure is just right for Blue Bell Creameries. The organization has chosen to stay medium-sized and focus on making a single product—quality ice cream. However, as Blue Bell expands, it may have problems coordinating across departments, requiring stronger horizontal linkage mechanisms.

### Functional Structure with Horizontal Linkages

A recent survey found that organizing by functions is still the prevalent approach to organization design.<sup>31</sup> However, in today's fast-moving world, very few companies can be successful with a strictly functional structure. Organizations compensate for



the vertical functional hierarchy by installing horizontal linkages, as described earlier in this chapter. Managers improve horizontal coordination by using information systems, direct contact between departments, full-time integrators or project managers (illustrated in Exhibit 2.3), task forces, or teams (illustrated in Exhibit 2.4). One interesting use of horizontal linkages occurred at Karolinska Hospital in Stockholm, Sweden, which had forty-seven functional departments. Even after top executives cut that down to eleven, coordination was still inadequate. The top executive team set about reorganizing workflow at the hospital around patient care. Instead of bouncing a patient from department to department, Karolinska now envisions the illness to recovery period as a process with “pit stops” in admissions, X-ray, surgery, and so forth. The most interesting aspect of the approach is the new position of nurse coordinator. Nurse coordinators serve as full-time integrators, troubleshooting transitions within or between departments. The improved horizontal coordination dramatically improved productivity and patient care at Karolinska.<sup>32</sup> Karolinska is effectively using horizontal linkages to overcome some of the disadvantages of the functional structure.

## Divisional Structure

The term **divisional structure** is used here as the generic term for what is sometimes called a *product structure* or *strategic business units*. With this structure, divisions can be organized according to individual products, services, product groups, major projects or programs, divisions, businesses, or profit centers. The distinctive feature of a divisional structure is that grouping is based on organizational outputs. For example, United Technologies Corporation (UTC), which is among the 50 largest U.S. industrial firms, has numerous divisions, including Carrier (air conditioners and heating), Otis (elevators and escalators), Pratt & Whitney (aircraft engines), and Sikorsky (helicopters).<sup>33</sup>

The difference between a divisional structure and a functional structure is illustrated in Exhibit 2.8. The functional structure can be redesigned into separate product groups, and each group contains the functional departments of R&D, manufacturing, accounting, and marketing. Coordination across functional departments within each product group is maximized. The divisional structure promotes flexibility and change because each unit is smaller and can adapt to the needs of its environment. Moreover, the divisional structure *decentralizes* decision making, because the lines of authority converge at a lower level in the hierarchy. The functional structure, by contrast, is *centralized*, because it forces decisions all the way to the top before a problem affecting several functions can be resolved.

Strengths and weaknesses of the divisional structure are summarized in Exhibit 2.9. The divisional organization structure is excellent for achieving coordination across functional departments. It works well when organizations can no longer be adequately controlled through the traditional vertical hierarchy, and when goals are oriented toward adaptation and change. Giant, complex organizations such as General Electric, Nestlé, and Johnson & Johnson are subdivided into a series of smaller, self-contained organizations for better control and coordination. In these large companies, the units are sometimes called divisions, businesses, or strategic business units. The structure at Johnson & Johnson includes some 250 separate operating units, including McNeil Consumer Products, makers of Tylenol; Ortho Pharmaceuticals, which makes Retin-A and birth-control pills; and J & J Consumer Products, the company that brings us

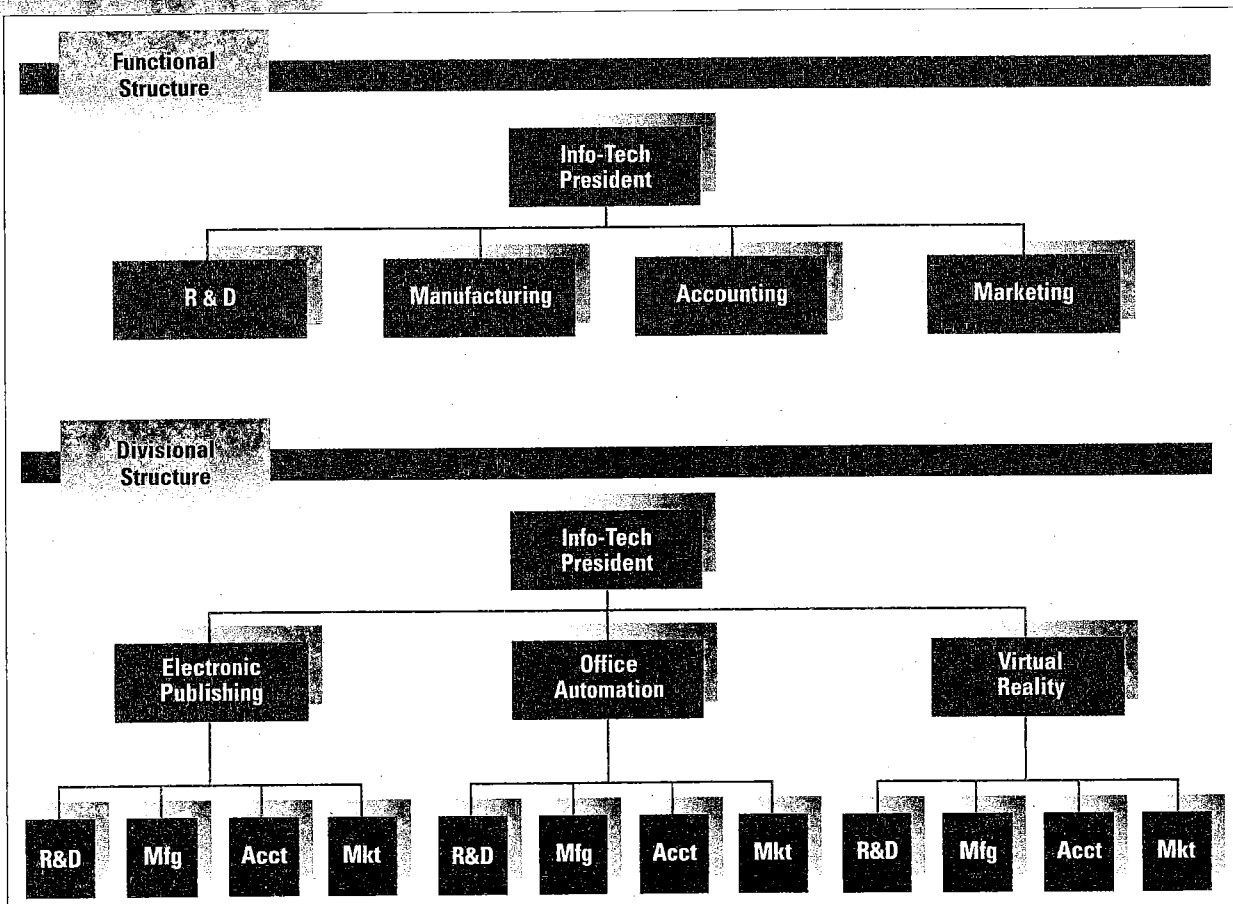
### Briefcase

**As an organization manager, keep these guidelines in mind:**

When designing overall organization structure, choose a functional structure when efficiency is important, when in-depth knowledge and expertise are critical to meeting organizational goals, and when the organization needs to be controlled and coordinated through the vertical hierarchy. Use a divisional structure in a large organization with multiple product lines and when you wish to give priority to product goals and coordination across functions.

**EXHIBIT 2.8**

Reorganization from  
Functional Structure to  
Divisional Structure at  
Info-Tech



Johnson's Baby Shampoo and Band-Aids. Each unit is a separately chartered, autonomous company operating under the guidance of Johnson & Johnson's corporate headquarters.<sup>34</sup> Some U.S. government organizations also use a divisional structure to better serve the public. One example is the Internal Revenue Service, which wanted to be more customer oriented. The agency shifted its focus to informing, educating, and serving the public through four separate divisions serving distinct taxpayer groups—individual taxpayers, small businesses, large businesses, and tax-exempt organizations. Each division has its own budget, personnel, policies, and planning staffs that are focused on what is best for each particular taxpayer segment.<sup>35</sup>

The divisional structure has several strengths.<sup>36</sup> This structure is suited to fast change in an unstable environment and provides high product or service visibility. Since each product line has its own separate division, customers are able to contact the correct division and achieve satisfaction. Coordination across functions is excellent. Each product can adapt to requirements of individual customers or regions. The divisional structure typically works best in organizations that have



### EXHIBIT 2.9

Strengths and Weaknesses of Divisional Organization Structure

| Strengths  | Weaknesses  |
|--|---|
| <ol style="list-style-type: none"> <li>1. Suited to fast change in unstable environment</li> <li>2. Leads to customer satisfaction because product responsibility and contact points are clear</li> <li>3. Involves high coordination across functions</li> <li>4. Allows units to adapt to differences in products, regions, customers</li> <li>5. Best in large organizations with several products</li> <li>6. Decentralizes decision making</li> </ol> | <ol style="list-style-type: none"> <li>1. Eliminates economies of scale in functional departments</li> <li>2. Leads to poor coordination across product lines</li> <li>3. Eliminates in-depth competence and technical specialization</li> <li>4. Makes integration and standardization across product lines difficult</li> </ol> |

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multiple products or services and enough personnel to staff separate functional units. Decision making is pushed down to the divisions. Each division is small enough to be quick on its feet, responding rapidly to changes in the market.

One disadvantage of using divisional structuring is that the organization loses economies of scale. Instead of fifty research engineers sharing a common facility in a functional structure, ten engineers may be assigned to each of five product divisions. The critical mass required for in-depth research is lost, and physical facilities have to be duplicated for each product line. Another problem is that product lines become separate from each other, and coordination across product lines can be difficult. As one Johnson & Johnson executive said, "We have to keep reminding ourselves that we work for the same corporation."<sup>37</sup>

Some companies that have a large number of divisions have had real problems with cross-unit coordination. Sony lost the digital media products business to Apple partly because of poor coordination. With the introduction of the iPod, Apple quickly captured 60 percent of the U.S. market versus 10 percent for Sony. The digital music business depends on seamless coordination. Sony's Walkman didn't even recognize some of the music sets that could be made with the company's SonicStage software and thus didn't mesh well with the division selling music downloads.<sup>38</sup> Unless effective horizontal mechanisms are in place, a divisional structure can hurt overall performance. One division may produce products or programs that are incompatible with products sold by another division, as at Sony. Customers can become frustrated when a sales representative from one division is unaware of developments in other divisions. Task forces and other horizontal linkage devices are needed to coordinate across divisions. A lack of technical specialization is also a problem in a divisional structure. Employees identify with the product line rather than with a functional specialty. R&D personnel, for example, tend to do applied research to benefit the product line rather than basic research to benefit the entire organization.

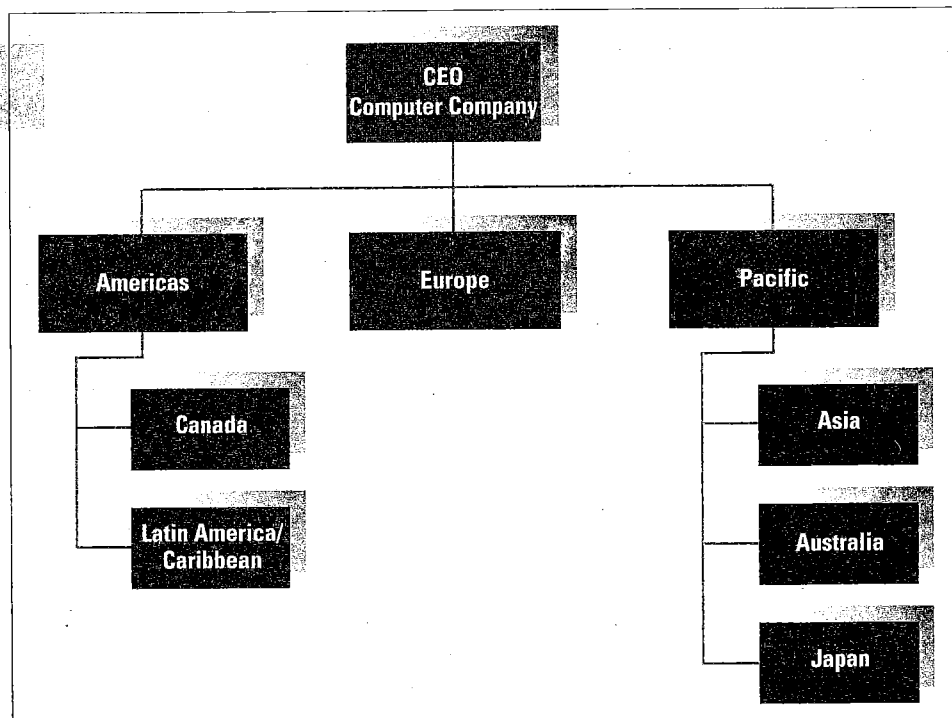
## Geographic Structure

Another basis for structural grouping is the organization's users or customers. The most common structure in this category is geography. Each region of the country may have distinct tastes and needs. Each geographic unit includes all functions required to produce and market products or services in that region. Large nonprofit organizations such as the Girl Scouts of the USA, Habitat for Humanity, Make-A-Wish Foundation, and the United Way of America frequently use a type of geographic structure, with a central headquarters and semi-autonomous local units. The national organization provides brand recognition, coordinates fund-raising services, and handles some shared administrative functions, while day-to-day control and decision making is decentralized to local or regional units.<sup>39</sup>

For multinational corporations, self-contained units are created for different countries and parts of the world. Exhibit 2.10 shows a potential geographic structure for a computer company. This structure focuses managers and employees on specific geographic regions and sales targets.<sup>40</sup> Top executives at Citigroup are considering reorganizing to a geographic structure to improve efficiency and give the giant global corporation a more unified face to local customers. The reorganization would put one top manager in charge of all the various banking operations throughout a specific region such as Asia, Europe, or North America.<sup>41</sup>

The strengths and weaknesses of a geographic divisional structure are similar to the divisional organization characteristics listed in Exhibit 2.9. The organization can adapt to the specific needs of its own region, and employees identify with regional goals rather than with national goals. Horizontal coordination within a region is emphasized rather than linkages across regions or to the national office.

**EXHIBIT 2.10**  
Geographic Structure for  
Computer Company







## MATRIX STRUCTURE

Sometimes, an organization's structure needs to be multifocused in that both product and function or product and geography are emphasized at the same time. One way to achieve this is through the **matrix structure**. The matrix can be used when both technical expertise and product innovation and change are important for meeting organizational goals. The matrix structure often is the answer when organizations find that the functional, divisional, and geographic structures combined with horizontal linkage mechanisms will not work.

The matrix is a strong form of horizontal linkage. The unique characteristic of the matrix organization is that both product divisions and functional structures (horizontal and vertical) are implemented simultaneously, as shown in Exhibit 2.11. The product managers and functional managers have equal authority within the organization, and employees report to both of them. The matrix structure is similar to the use of full-time integrators or product managers described earlier in this chapter (Exhibit 2.3), except that in the matrix structure the product managers (horizontal) are given formal authority equal to that of the functional managers (vertical).

### Conditions for the Matrix

A dual hierarchy may seem an unusual way to design an organization, but the matrix is the correct structure when the following conditions are present:<sup>42</sup>

- **Condition 1.** Pressure exists to share scarce resources across product lines. The organization is typically medium sized and has a moderate number of product lines. It feels pressure for the shared and flexible use of people and equipment across those products. For example, the organization is not large enough to assign engineers full-time to each product line, so engineers are assigned part-time to several products or projects.
- **Condition 2.** Environmental pressure exists for two or more critical outputs, such as for in-depth technical knowledge (functional structure) and frequent new products (divisional structure). This dual pressure means a balance of power is needed between the functional and product sides of the organization, and a dual-authority structure is needed to maintain that balance.
- **Condition 3.** The environmental domain of the organization is both complex and uncertain. Frequent external changes and high interdependence between departments require a large amount of coordination and information processing in both vertical and horizontal directions.

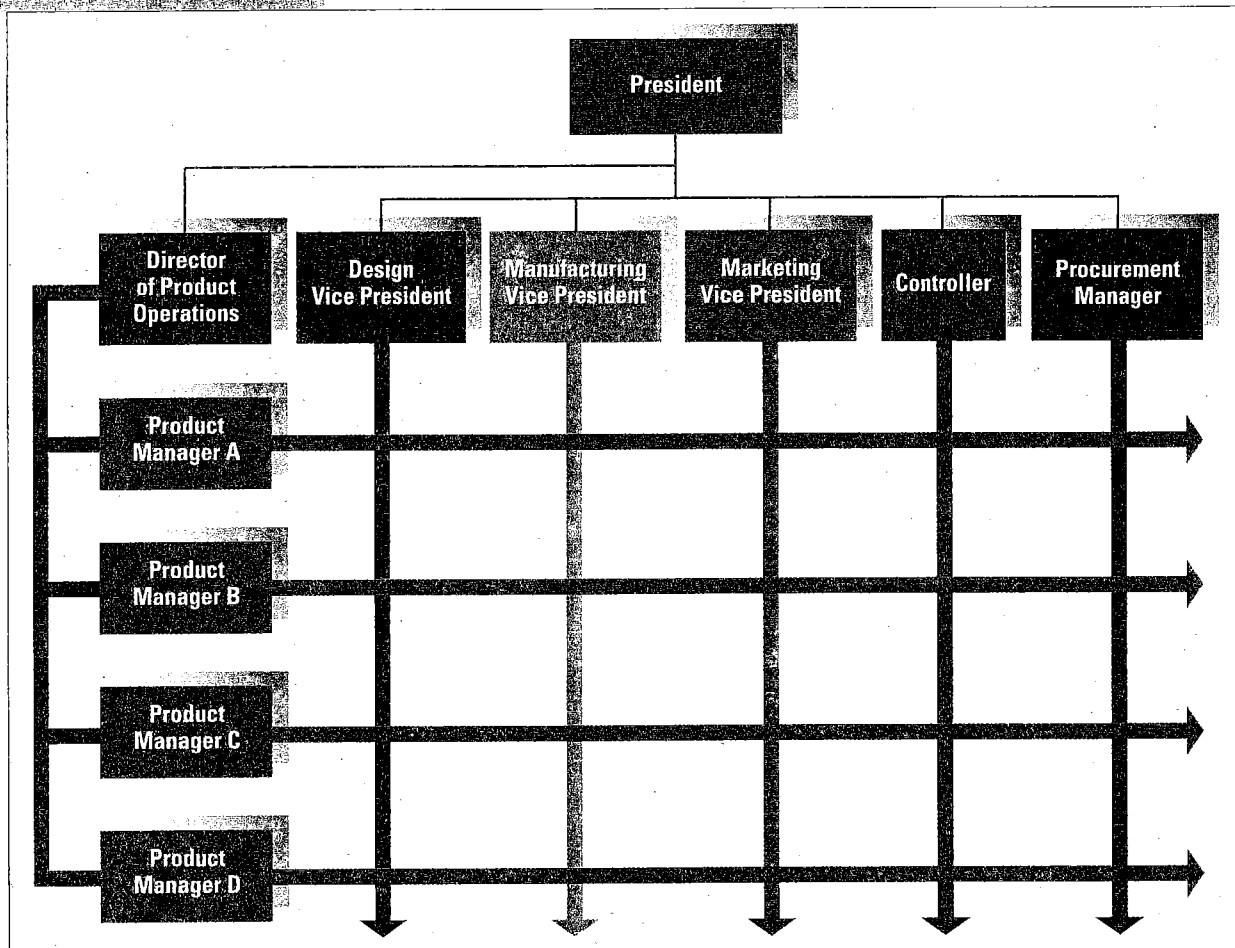
Under these three conditions, the vertical and horizontal lines of authority must be given equal recognition. A dual-authority structure is thereby created so the balance of power between them is equal.

Referring again to Exhibit 2.11, assume the matrix structure is for a clothing manufacturer. Product A is footwear, product B is outerwear, product C is sleepwear, and so on. Each product line serves a different market and customers. As a medium-size organization, the company must effectively use people from manufacturing, design, and marketing to work on each product line. There are not enough designers to warrant a separate design department for each product line, so the

### Briefcase

As an organization manager, keep these guidelines in mind:

Consider a matrix structure when the organization needs to give equal priority to both products and functions because of dual pressures from customers in the environment. Use either a functional matrix or a product matrix if the balanced matrix with dual lines of authority is not appropriate for your organization.

**EXHIBIT 2.11**Dual Authority Structure  
in a Matrix Organization

designers are shared across product lines. Moreover, by keeping the manufacturing, design, and marketing functions intact, employees can develop the in-depth expertise to serve all product lines efficiently.

The matrix formalizes horizontal teams along with the traditional vertical hierarchy and tries to give equal balance to both. However, the matrix may shift one way or the other. Many companies have found a balanced matrix hard to implement and maintain because one side of the authority structure often dominates. As a consequence, two variations of matrix structure have evolved—the **functional matrix** and the **product matrix**. In a functional matrix, the functional bosses have primary authority and the project or product managers simply coordinate product activities. In a product matrix, by contrast, the project or product managers have primary authority and functional managers simply assign technical personnel to projects and provide advisory expertise as needed. For many organizations, one of these approaches works better than the balanced matrix with dual lines of authority.<sup>43</sup>

All kinds of organizations have experimented with the matrix, including hospitals, consulting firms, banks, insurance companies, government agencies, and many types of industrial firms.<sup>44</sup> This structure has been used successfully by large, global



organizations such as Procter & Gamble, Unilever, and Dow Chemical, which fine-tuned the matrix to suit their own particular goals and culture.

## Strengths and Weaknesses

The matrix structure is best when environmental change is high and when goals reflect a dual requirement, such as for both product and functional goals. The dual-authority structure facilitates communication and coordination to cope with rapid environmental change and enables an equal balance between product and functional bosses. The matrix facilitates discussion and adaptation to unexpected problems. It tends to work best in organizations of moderate size with a few product lines. The matrix is not needed for only a single product line, and too many product lines make it difficult to coordinate both directions at once. Exhibit 2.12 summarizes the strengths and weaknesses of the matrix structure based on what we know of organizations that use it.<sup>45</sup>

The strength of the matrix is that it enables an organization to meet dual demands from customers in the environment. Resources (people, equipment) can be flexibly allocated across different products, and the organization can adapt to changing external requirements.<sup>46</sup> This structure also provides an opportunity for employees to acquire either functional or general management skills, depending on their interests.

One disadvantage of the matrix is that some employees experience dual authority, reporting to two bosses and sometimes juggling conflicting demands. This can be frustrating and confusing, especially if roles and responsibilities are not clearly defined by top managers.<sup>47</sup> Employees working in a matrix need excellent interpersonal and conflict-resolution skills, which may require special training in human

**EXHIBIT 2.12**  
Strengths and  
Weaknesses of Matrix  
Organization Structure

| Strengths   | Weaknesses   |
|---|--|
| 1. Achieves coordination necessary to meet dual demands from customers      | 1. Causes participants to experience dual authority, which can be frustrating and confusing                    |
| 2. Flexible sharing of human resources across products                      | 2. Means participants need good interpersonal skills and extensive training                                    |
| 3. Suited to complex decisions and frequent changes in unstable environment | 3. Is time consuming; involves frequent meetings and conflict resolution sessions                              |
| 4. Provides opportunity for both functional and product skill development   | 4. Will not work unless participants understand it and adopt collegial rather than vertical type relationships |
| 5. Best in medium-sized organizations with multiple products                | 5. Requires great effort to maintain power balance   |

Source: Adapted from Robert Duncan, "What Is the Right Organization Structure? Decision Tree Analysis Provides the Answer," *Organizational Dynamics* (Winter 1979), 429.

relations. The matrix also forces managers to spend a great deal of time in meetings.<sup>48</sup> If managers do not adapt to the information and power sharing required by the matrix, the system will not work. Managers must collaborate with one another rather than rely on vertical authority in decision making. The successful implementation of one matrix structure occurred at a steel company in Great Britain.



## IN PRACTICE

### Englander Steel

As far back as anyone could remember, the steel industry in England was stable and certain. Then in the 1980s and 1990s, excess European steel capacity, an economic downturn, the emergence of the mini mill electric arc furnace, and competition from

steelmakers in Germany and Japan forever changed the steel industry. By the turn of the century, traditional steel mills in the United States, such as Bethlehem Steel and LTV Corporation, were facing bankruptcy. Mittal Steel in Asia and Europe's leading steelmaker, Arcelor, started acquiring steel companies to become world steel titans. The survival hope of small traditional steel manufacturers was to sell specialized products. A small company could market specialty products aggressively and quickly adapt to customer needs. Complex process settings and operating conditions had to be rapidly changed for each customer's order—a difficult feat for the titans.

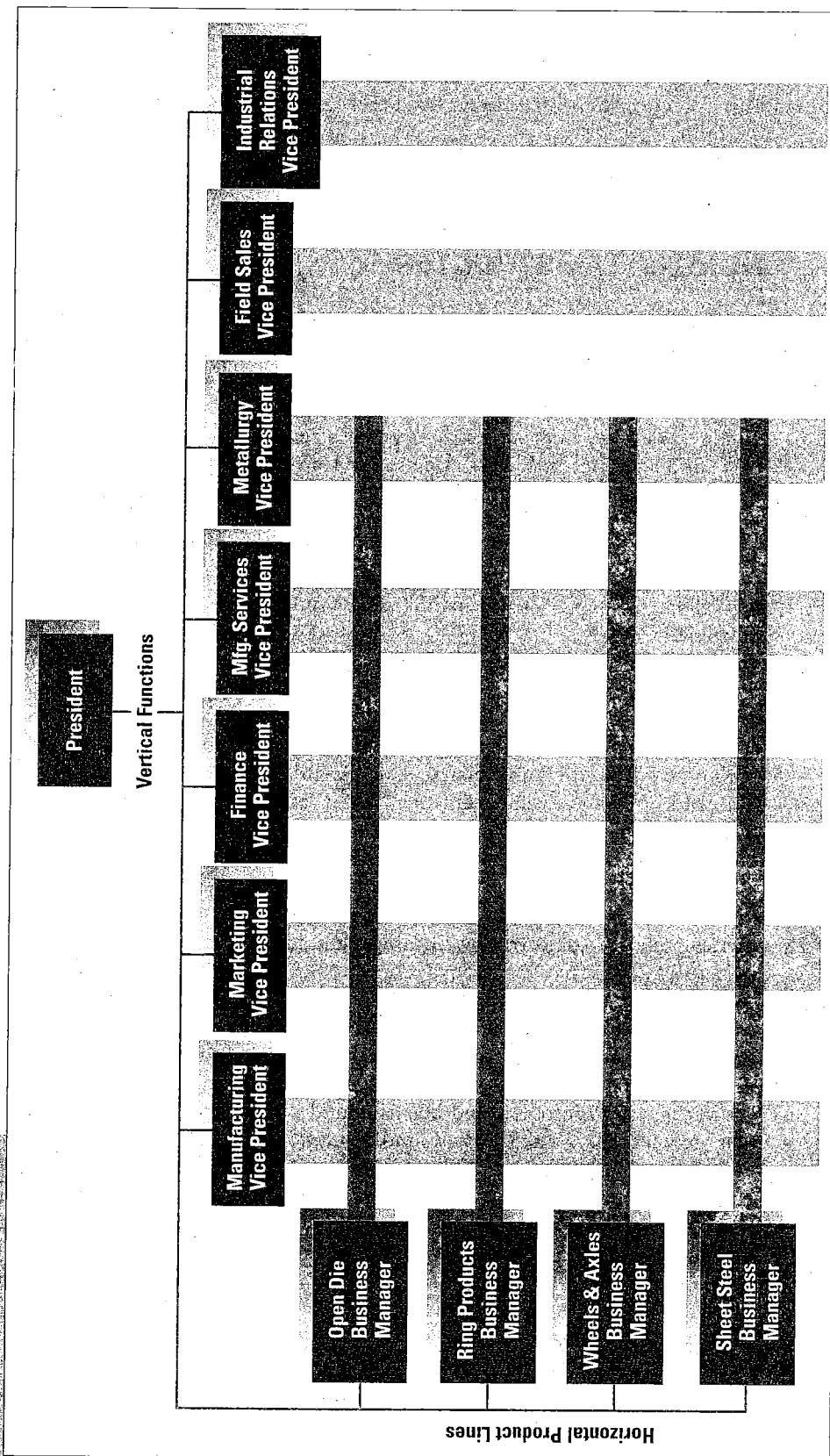
Englander Steel employed 2,900 people, made 400,000 tons of steel a year (about 1 percent of Arcelor's output), and was 180 years old. For 160 of those years, a functional structure worked fine. As the environment became more turbulent and competitive, however, Englander Steel managers realized they were not keeping up. Fifty percent of Englander's orders were behind schedule. Profits were eroded by labor, material, and energy cost increases. Market share declined.

In consultation with outside experts, the president of Englander Steel saw that the company had to walk a tightrope. It had to specialize in a few high-value-added products tailored for separate markets, while maintaining economies of scale and sophisticated technology within functional departments. The dual pressure led to an unusual solution for a steel company: a matrix structure.

Englander Steel had four product lines: open-die forgings, ring-mill products, wheels and axles, and sheet steel. A business manager was given responsibility for and authority over each line, which included preparing a business plan and developing targets for production costs, product inventory, shipping dates, and gross profit. The managers were given authority to meet those targets and to make their lines profitable. Functional vice presidents were responsible for technical decisions. Functional managers were expected to stay abreast of the latest techniques in their areas and to keep personnel trained in new technologies that could apply to product lines. With 20,000 recipes for specialty steels and several hundred new recipes ordered each month, functional personnel had to stay current. Two functional departments—field sales and industrial relations—were not included in the matrix because they worked independently. The final design was a hybrid matrix structure with both matrix and functional relationships, as illustrated in Exhibit 2.13.

Implementation of the matrix was slow. Middle managers were confused. Meetings to coordinate orders across functional departments seemed to be held every day. After about a year of training by external consultants, Englander Steel was on track. Ninety percent of the orders were now delivered on time and market share recovered. Both productivity and profitability increased steadily. The managers thrived on matrix involvement. Meetings to coordinate product and functional decisions provided a growth experience. Middle managers began including younger managers in the matrix discussions as training for future management responsibility.<sup>49</sup> ■

**EXHIBIT 2.13**  
Matrix Structure for  
Englander Steel



This example illustrates the correct use of a matrix structure. The dual pressure to maintain economies of scale and to market four product lines gave equal emphasis to the functional and product hierarchies. Through continuous meetings for coordination, Englander Steel achieved both economies of scale and flexibility.

## HORIZONTAL STRUCTURE

A recent approach to organizing is the **horizontal structure**, which organizes employees around core processes. Organizations typically shift toward a horizontal structure during a procedure called reengineering. **Reengineering**, or *business process reengineering*, basically means the redesign of a vertical organization along its horizontal workflows and processes. A **process** refers to an organized group of related tasks and activities that work together to transform inputs into outputs that create value for customers.<sup>50</sup> Examples of processes include order fulfillment, new product development, and customer service. Reengineering changes the way managers think about how work is done. Rather than focusing on narrow jobs structured into distinct functional departments, they emphasize core processes that cut horizontally across the organization and involve teams of employees working together to serve customers.

A good illustration of process is provided by claims handling at Progressive Casualty Insurance Company. In the past, a customer would report an accident to an agent, who would pass the information to a customer service representative, who, in turn, would pass it to a claims manager. The claims manager would batch the claim with others from the same territory and assign it to an adjuster, who would schedule a time to inspect the vehicle damage. Today, adjusters are organized into teams that handle the entire claims process from beginning to end. One member handles claimant calls to the office while others are stationed in the field. When an adjuster takes a call, he or she does whatever is possible over the phone. If an inspection is needed, the adjuster contacts a team member in the field and schedules an appointment immediately. Progressive now measures the time from call to inspection in hours rather than the seven to ten days it once took.<sup>51</sup>

When a company is reengineered to a horizontal structure, all employees throughout the organization who work on a particular process (such as claims handling or order fulfillment) have easy access to one another so they can communicate and coordinate their efforts. The horizontal structure virtually eliminates both the vertical hierarchy and old departmental boundaries. This structural approach is largely a response to the profound changes that have occurred in the workplace and the business environment over the past fifteen to twenty years. Technological progress emphasizes computer- and Internet-based integration and coordination. Customers expect faster and better service, and employees want opportunities to use their minds, learn new skills, and assume greater responsibility. Organizations mired in a vertical mindset have a hard time meeting these challenges. Thus, numerous organizations have experimented with horizontal mechanisms such as cross-functional teams to achieve coordination across departments or task forces to accomplish temporary projects. Increasingly, organizations are shifting away from hierarchical, function-based structures to structures based on horizontal processes.

### Briefcase

As an organization manager, keep these guidelines in mind:

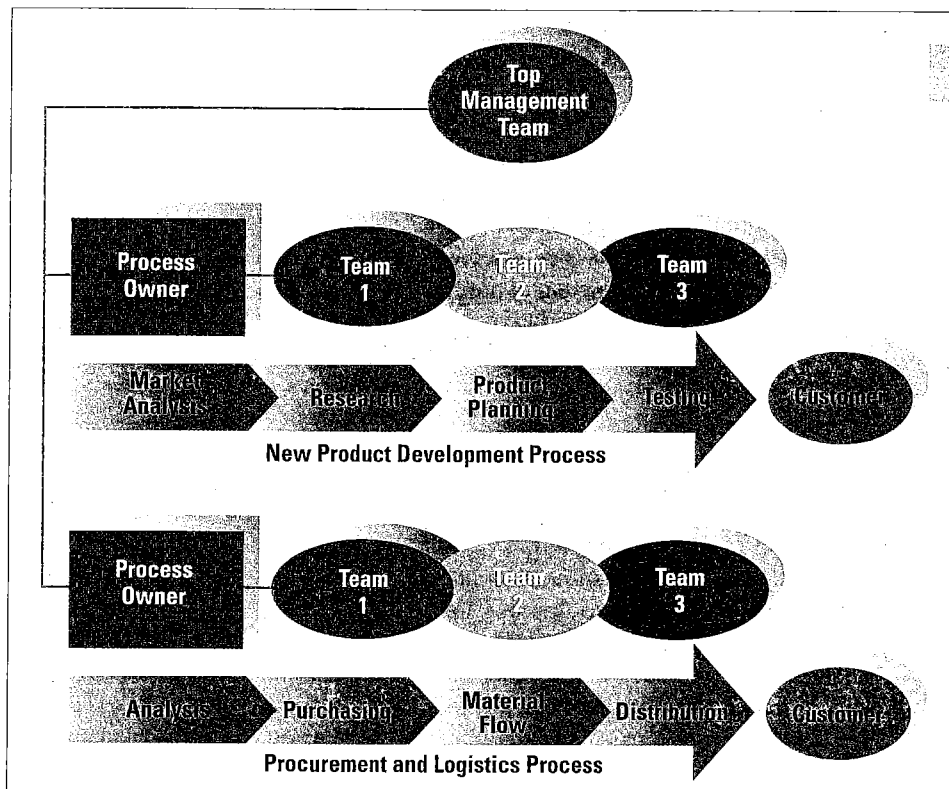
Consider a horizontal structure when customer needs and demands change rapidly and when learning and innovation are critical to organizational success. Carefully determine core processes and train managers and employees to work within the horizontal structure.



## Characteristics

An illustration of a company reengineered into a horizontal structure appears in Exhibit 2.14. Such an organization has the following characteristics:<sup>52</sup>

- Structure is created around cross-functional core processes rather than tasks, functions, or geography. Thus, boundaries between departments are obliterated. Ford Motor Company's Customer Service Division, for example, has core process groups for business development, parts supply and logistics, vehicle service and programs, and technical support.
- Self-directed teams, not individuals, are the basis of organizational design and performance. Schwa, a restaurant in Chicago that serves elaborate multicourse meals, is run by a team. Members rotate jobs so that everyone is sometimes a chef, sometimes a dishwasher, sometimes a waiter, or sometimes the person who answers the phone, takes reservations, or greets customers at the door.<sup>53</sup>
- Process owners have responsibility for each core process in its entirety. For Ford's parts supply and logistics process, for example, a number of teams may work on jobs such as parts analysis, purchasing, material flow, and distribution, but a process owner is responsible for coordinating the entire process.
- People on the team are given the skills, tools, motivation, and authority to make decisions central to the team's performance. Team members are cross-trained to perform one another's jobs, and the combined skills are sufficient to complete a major organizational task.



**EXHIBIT 2.14**  
A Horizontal Structure

Source: Based on Frank Ostroff, *The Horizontal Organization* (New York: Oxford University Press, 1999); John A. Byrne, "The Horizontal Corporation," *BusinessWeek* (December 20, 1993), 76-81; and Thomas A. Stewart, "The Search for the Organization of Tomorrow," *Fortune* (May 18, 1992), 92-98.

- Teams have the freedom to think creatively and respond flexibly to new challenges that arise.
- Customers drive the horizontal corporation. Effectiveness is measured by end-of-process performance objectives (based on the goal of bringing value to the customer), as well as customer satisfaction, employee satisfaction, and financial contribution.
- The culture is one of openness, trust, and collaboration, focused on continuous improvement. The culture values employee empowerment, responsibility, and well-being.

General Electric's Salisbury, North Carolina, plant shifted to a horizontal structure to improve flexibility and customer service.

## IN PRACTICE

### GE Salisbury

General Electric's plant in Salisbury, North Carolina, which manufactures electrical lighting panel boards for industrial and commercial purposes, used to be organized

functionally and vertically. Because no two GE customers have identical needs, each panel board has to be configured and built to order, which frequently created bottlenecks in the standard production process. In the mid-1980s, faced with high product-line costs, inconsistent customer service, and a declining market share, managers began exploring new ways of organizing that would emphasize teamwork, responsibility, continuous improvement, empowerment, and commitment to the customer.

By the early 1990s, GE Salisbury had made the transition to a horizontal structure that links sets of multiskilled teams who are responsible for the entire build-to-order process. The new structure is based on the goal of producing lighting panel boards "of the highest possible quality, in the shortest possible cycle time, at a competitive price, with the best possible service." The process consists of four linked teams, each made up of ten to fifteen members representing a range of skills and functions. A production-control team serves as process owner (as illustrated earlier in Exhibit 2.14) and is responsible for order receipt, planning, coordination of production, purchasing, working with suppliers and customers, tracking inventory, and keeping all the teams focused on meeting objectives. The fabrication team cuts, builds, welds, and paints the various parts that make up the steel box that will house the electrical components panel, which is assembled and tested by the electrical components team. The electrical components team also handles shipping. A maintenance team takes care of heavy equipment maintenance that cannot be performed as part of the regular production process. Managers have become *associate advisors* who serve as guides and coaches and bring their expertise to the teams as needed.

The key to success of the horizontal structure is that all the operating teams work in concert with each other and have access to the information they need to meet team and process goals. Teams are given information about sales, backlogs, inventory, staffing needs, productivity, costs, quality, and other data, and each team regularly shares information about its part of the build-to-order process with the other teams. Joint production meetings, job rotation, and cross-training of employees are some of the mechanisms that help ensure smooth integration. The linked teams assume responsibility for setting their own production targets, determining production schedules, assigning duties, and identifying and solving problems.





Productivity and performance have dramatically improved with the horizontal structure. Bottlenecks in the workflow, which once wreaked havoc with production schedules, have been virtually eliminated. A six-week lead time has been cut to two-and-a-half days. More subtle but just as important are the increases in employee and customer satisfaction that GE Salisbury has realized since implementing its new structure.<sup>54</sup> ■

## Strengths and Weaknesses

As with all structures, the horizontal structure has both strengths and weaknesses, as listed in Exhibit 2.15.

The most significant strength of the horizontal structure is enhanced coordination, which can dramatically increase the company's flexibility and response to changes in customer needs. The structure directs everyone's attention toward the customer, which leads to greater customer satisfaction as well as improvements in productivity, speed, and efficiency. In addition, because there are no boundaries between functional departments, employees take a broader view of organizational goals rather than being focused on the goals of a single department. The horizontal structure promotes an emphasis on teamwork and cooperation, so that team members share a commitment to meeting common objectives. Finally, the horizontal structure can improve the quality of life for employees by giving them opportunities to share responsibility, make decisions, and contribute significantly to the organization.

A weakness of the horizontal structure is that it can harm rather than help organizational performance unless managers carefully determine which core processes are critical for bringing value to customers. Simply defining the processes around

**EXHIBIT 2.15**  
Strengths and  
Weaknesses of  
Horizontal Structure

| Strengths  | Weaknesses  |
|--|---|
| <ol style="list-style-type: none"> <li>1. Promotes flexibility and rapid response to changes in customer needs</li> <li>2. Directs the attention of everyone toward the production and delivery of value to the customer</li> <li>3. Each employee has a broader view of organizational goals</li> <li>4. Promotes a focus on teamwork and collaboration</li> <li>5. Improves quality of life for employees by offering them the opportunity to share responsibility, make decisions, and be accountable for outcomes</li> </ol> | <ol style="list-style-type: none"> <li>1. Determining core processes is difficult and time consuming</li> <li>2. Requires changes in culture, job design, management philosophy, and information and reward systems</li> <li>3. Traditional managers may balk when they have to give up power and authority</li> <li>4. Requires significant training of employees to work effectively in a horizontal team environment</li> <li>5. Can limit in-depth skill development</li> </ol> |

Sources: Based on Frank Ostroff, *The Horizontal Organization: What the Organization of the Future Looks Like and How It Delivers Value to Customers* (New York: Oxford University Press, 1999); and Richard L. Daft, *Organization Theory and Design*, 6th ed. (Cincinnati, Ohio: South-Western, 1998), 253.

which to organize can be difficult. In addition, shifting to a horizontal structure is complicated and time consuming because it requires significant changes in culture, job design, management philosophy, and information and reward systems. Traditional managers may balk when they have to give up power and authority to serve instead as coaches and facilitators of teams. Employees have to be trained to work effectively in a team environment. Finally, because of the cross-functional nature of work, a horizontal structure can limit in-depth knowledge and skill development unless measures are taken to give employees opportunities to maintain and build technical expertise.

## VIRTUAL NETWORKS AND OUTSOURCING

Recent developments in organization design extend the concept of horizontal coordination and collaboration beyond the boundaries of the traditional organization. The most widespread design trend in recent years has been the outsourcing of various parts of the organization to outside partners.<sup>55</sup> **Outsourcing** means to contract out certain tasks or functions, such as manufacturing, human resources, or credit processing, to other companies.

Companies in almost every industry are jumping on the outsourcing bandwagon. For example, more than 1,000 law enforcement agencies across the United States have turned to PropertyRoom.com to manage the time-consuming business of cataloging and auctioning off unclaimed stolen goods such as cars, computers, jewelry, or paintings.<sup>56</sup> And consider the U.S. military, which increasingly uses private military company contractors to handle just about everything except the core activity of fighting battles and securing defensive positions. Kellogg Brown & Root, a subsidiary of the Halliburton Corporation, for instance, builds and maintains military bases and provides catering and cleaning services. In the business world, Wachovia Corporation transferred administration of its human resources programs to Hewitt Associates, and British food retailer J. Sainsbury's lets Accenture handle its entire information technology department. About 20 percent of drug manufacturer Eli Lilly & Company's chemistry work is done in China by start-up labs such as Chem-Explorer; and companies such as India's Wipro, France's S.R. Teleperformance, and the U.S.-based Convergys manage call center and technical support operations for big computer and cell phone companies around the world. Fiat Auto is involved in multiple complex outsourcing relationships with other companies handling logistics, maintenance, and the manufacturing of some parts.<sup>57</sup>

Once, a company's units of operation "were either within the organization and 'densely connected' or they were outside the organization and not connected at all," as one observer phrased it.<sup>58</sup> Today, the lines are so blurred that it can be difficult to tell what is part of the organization and what is not. IBM handles back-office operations for many large companies, but it also outsources some of its own activities to other firms, which in turn may farm out some of their functions to still other organizations.<sup>59</sup>

A few organizations carry outsourcing to the extreme to create a virtual network structure. With a **virtual network structure**, sometimes called a *modular structure*, the firm subcontracts most of its major functions or processes to separate companies and coordinates their activities from a small headquarters organization.<sup>60</sup>

### Briefcase

As an organization manager, keep these guidelines in mind:

Use a virtual network structure for extreme flexibility and rapid response to changing market conditions. Focus on key activities that give the organization its competitive advantage and outsource other activities to carefully selected partners.



## How the Structure Works

The virtual network organization may be viewed as a central hub surrounded by a network of outside specialists. Rather than being housed under one roof or located within one organization, services such as accounting, design, manufacturing, marketing, and distribution are outsourced to separate companies that are connected electronically to a central office. Organizational partners located in different parts of the world may use networked computers or the Internet to exchange data and information so rapidly and smoothly that a loosely connected network of suppliers, manufacturers, and distributors can look and act like one seamless company. The virtual network form incorporates a free-market style to replace the traditional vertical hierarchy. Subcontractors may flow into and out of the system as needed to meet changing needs.

With a network structure, the hub maintains control over processes in which it has world-class or difficult-to-imitate capabilities and then transfers other activities—along with the decision making and control over them—to other organizations. These partner organizations organize and accomplish their work using their own ideas, assets, and tools.<sup>61</sup> The idea is that a firm can concentrate on what it does best and contract out everything else to companies with distinctive competence in those specific areas, enabling the organization to do more with less.<sup>62</sup> The network structure is often advantageous for start-up companies, such as TiVo Inc., the company that introduced the digital video recorder.

The market for digital video recorders is hot, and major electronics, cable, and satellite companies are getting in on the action. The company that started it all was TiVo, a small organization based in the San Francisco Bay area.

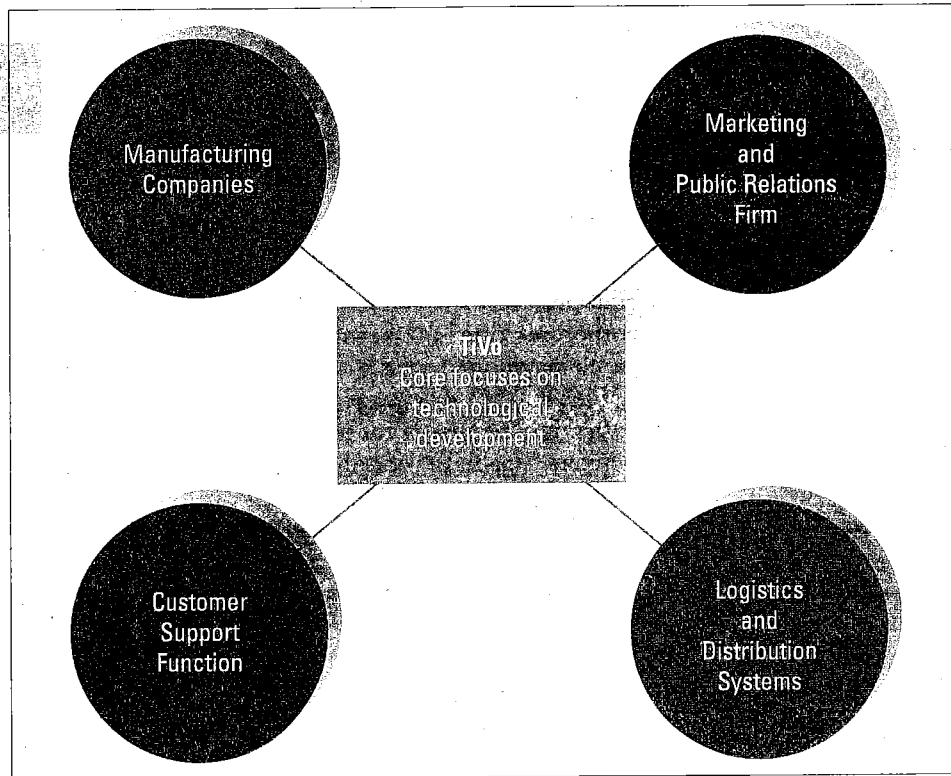
TiVo's founders developed a technology to allow users to record up to 80 hours of television and replay it at their convenience, without commercial interruption and minus the hassles of digital storage media or videotapes. They knew speed was of the essence if they were to take this new market by storm. The only way to do it was by outsourcing practically everything. TiVo first developed major manufacturing and marketing partnerships with large companies such as Sony, Hughes Electronics, and Royal Philips Electronics. In addition, the company outsourced distribution, public relations, advertising, and customer support. TiVo managers considered the customer support function particularly critical. Because TiVo was a new concept, ordinary call-center approaches wouldn't work. Leaders worked closely with outsourcing partner ClientLogic to develop processes and training materials that would help customer-service agents "think like a TiVo customer."

Using the virtual network structure enabled a small company like TiVo to get the advanced capabilities it needed without having to spend time and limited financial resources building an organization from scratch. TiVo leaders concentrated on technological innovation and developing and managing relationships with outsourcing firms. Today, TiVo has partnership agreements with numerous organizations, including a recent one with YouTube that will allow TiVo subscribers to watch user-generated videos from the website on their televisions, and one with Comcast, the nation's number one cable operator, that will help TiVo reach a larger customer base. The deal with Comcast is critical. Without a cable partner, TiVo would find it difficult to remain a major player in the growing market for digital video recorders.<sup>63</sup> ■

## IN PRACTICE

TiVo Inc.

**EXHIBIT 2.16**  
Partial Virtual Network  
Structure at TiVo



TiVo faces stiff competition, but using the virtual network structure enabled it to get established and survive in the growing industry. TiVo is marketing itself as a premium DVR service to compete with the fast-growing and less expensive options offered by satellite and cable providers. Exhibit 2.16 illustrates a simplified network structure for TiVo, showing some of the functions that are outsourced to other companies.

### Strengths and Weaknesses

Exhibit 2.17 summarizes the strengths and weaknesses of the virtual network structure.<sup>64</sup> One of the major strengths is that the organization, no matter how small, can be truly global, drawing on resources worldwide to achieve the best quality and price and then selling products or services worldwide just as easily through subcontractors. The network structure also enables a new or small company to develop products or services and get them to market rapidly without huge investments in factories, equipment, warehouses, or distribution facilities. The ability to arrange and rearrange resources to meet changing needs and best serve customers gives the network structure extreme flexibility and rapid response. New technologies can be developed quickly by tapping into a worldwide network of experts. The organization can continually redefine itself to meet changing product or market opportunities. A final strength is reduced administrative overhead. Large teams of staff specialists and administrators are not needed. Managerial and technical talent can be focused on key activities that provide competitive advantage while other activities are outsourced.



**EXHIBIT 2.17**  
Strengths and  
Weaknesses of Virtual  
Network Structure

| Strengths   | Weaknesses   |
|---|--|
| <ol style="list-style-type: none"> <li>1. Enables even small organizations to obtain talent and resources worldwide</li> <li>2. Gives a company immediate scale and reach without huge investments in factories, equipment, or distribution facilities</li> <li>3. Enables the organization to be highly flexible and responsive to changing needs</li> <li>4. Reduces administrative overhead costs</li> </ol> | <ol style="list-style-type: none"> <li>1. Managers do not have hands-on control over many activities and employees</li> <li>2. Requires a great deal of time to manage relationships and potential conflicts with contract partners</li> <li>3. There is a risk of organizational failure if a partner fails to deliver or goes out of business</li> <li>4. Employee loyalty and corporate culture might be weak because employees feel they can be replaced by contract services</li> </ol> |

Sources: Based on Linda S. Ackerman, "Transition Management: An In-Depth Look at Managing Complex Change," *Organizational Dynamics* (Summer 1982), 46–66; and Frank Ostroff, *The Horizontal Organization* (New York: Oxford University Press, 1999), Fig 2.1, 34.

The virtual network structure also has a number of weaknesses. The primary weakness is a lack of control. The network structure takes decentralization to the extreme. Managers do not have all operations under their jurisdiction and must rely on contracts, coordination, and negotiation to hold things together. This also means increased time spent managing relationships with partners and resolving conflicts.

A problem of equal importance is the risk of failure if one organizational partner fails to deliver, has a plant burn down, or goes out of business. Managers in the headquarters organization have to act quickly to spot problems and find new arrangements. Finally, from a human resource perspective, employee loyalty can be weak in a network organization because of concerns over job security. Employees may feel that they can be replaced by contract services. In addition, it is more difficult to develop a cohesive corporate culture. Turnover may be higher because emotional commitment between the organization and employees is low. With changing products, markets, and partners, the organization may need to reshuffle employees at any time to get the correct mix of skills and capabilities.

## HYBRID STRUCTURE

As a practical matter, many structures in the real world do not exist in the pure forms we have outlined in this chapter. Most large organizations, in particular, often use a **hybrid structure** that combines characteristics of various approaches tailored to specific strategic needs. Most companies combine characteristics of functional, divisional, geographic, horizontal, or network structures to take advantage of the strengths of various structures and avoid some of the weaknesses. Hybrid structures tend to be used in rapidly changing environments because they offer the organization greater flexibility.

## Briefcase

As an organization manager, keep these guidelines in mind:

Implement hybrid structures when needed to combine characteristics of functional, divisional, and horizontal structures. Use a hybrid structure in complex environments to take advantage of the strengths of various structural characteristics and avoid some of the weaknesses.

One type of hybrid that is often used is to combine characteristics of the functional and divisional structures. When a corporation grows large and has several products or markets, it typically is organized into self-contained divisions of some type. Functions that are important to each product or market are decentralized to the self-contained units. However, some functions that are relatively stable and require economies of scale and in-depth specialization are also centralized at headquarters. Sun Petroleum Products Corporation (SPPC) reorganized to a hybrid structure to be more responsive to changing markets. The hybrid organization structure adopted by SPPC is illustrated in part 1 of Exhibit 2.18. Three major product divisions—fuels, lubricants, and chemicals—were created, each serving a different market and requiring a different strategy and management style. Each product-line vice president is now in charge of all functions for that product, such as marketing, planning, supply and distribution, and manufacturing. However, activities such as human resources, legal, technology, and finance were centralized as functional departments at headquarters in order to achieve economies of scale. Each of these departments provides services for the entire organization.<sup>65</sup>

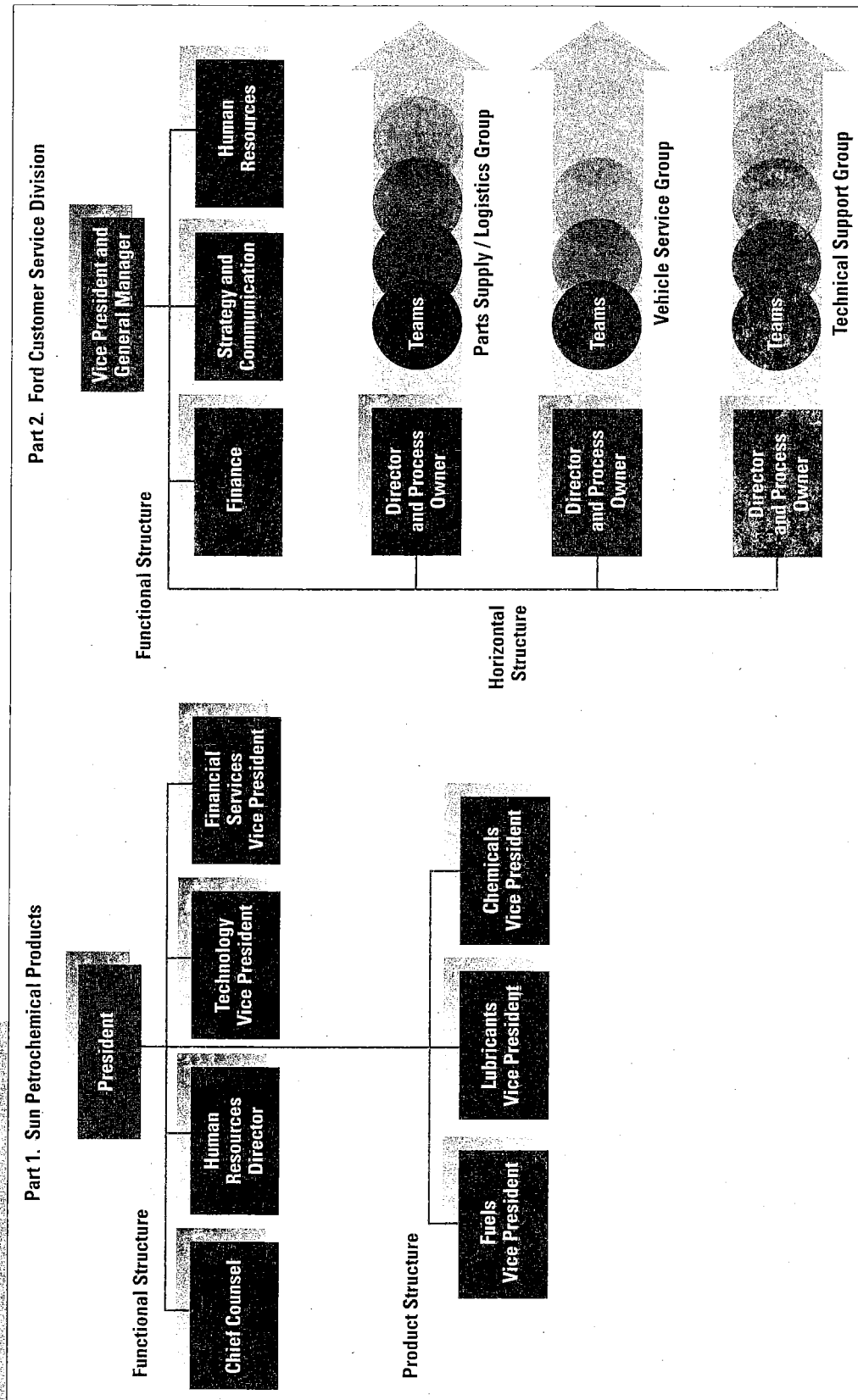
A second hybrid approach that is increasingly used today is to combine characteristics of functional, divisional, and horizontal structures. Ford Motor Company's Customer Service Division, a global operation made up of 12,000 employees serving nearly 15,000 dealers, provides an example of this type of hybrid. Beginning in 1995, when Ford launched its "Ford 2000" initiative aimed at becoming the world's leading automotive firm in the twenty-first century, top executives grew increasingly concerned about complaints regarding customer service. They decided that the horizontal model offered the best chance to gain a faster, more efficient, integrated approach to customer service. Part 2 of Exhibit 2.18 illustrates a portion of the Customer Service Division's hybrid structure. Several horizontally aligned groups, made up of multiskilled teams, focus on core processes such as parts supply and logistics (acquiring parts and getting them to dealers quickly and efficiently), vehicle service and programs (collecting and disseminating information about repair problems), and technical support (ensuring that every service department receives updated technical information). Each group has a process owner who is responsible for seeing that the teams meet overall objectives. Ford's Customer Service Division retained a functional structure for its finance, strategy and communications, and human resources departments. Each of these departments provides services for the entire division.<sup>66</sup>

In a huge organization such as Ford, managers may use a variety of structural characteristics to meet the needs of the total organization. Like many large organizations, for example, Ford also outsources some of its activities to other firms. A hybrid structure is often preferred over the pure functional, divisional, horizontal, or virtual network structure because it can provide some of the advantages of each and overcome some of the disadvantages.

## APPLICATIONS OF STRUCTURAL DESIGN

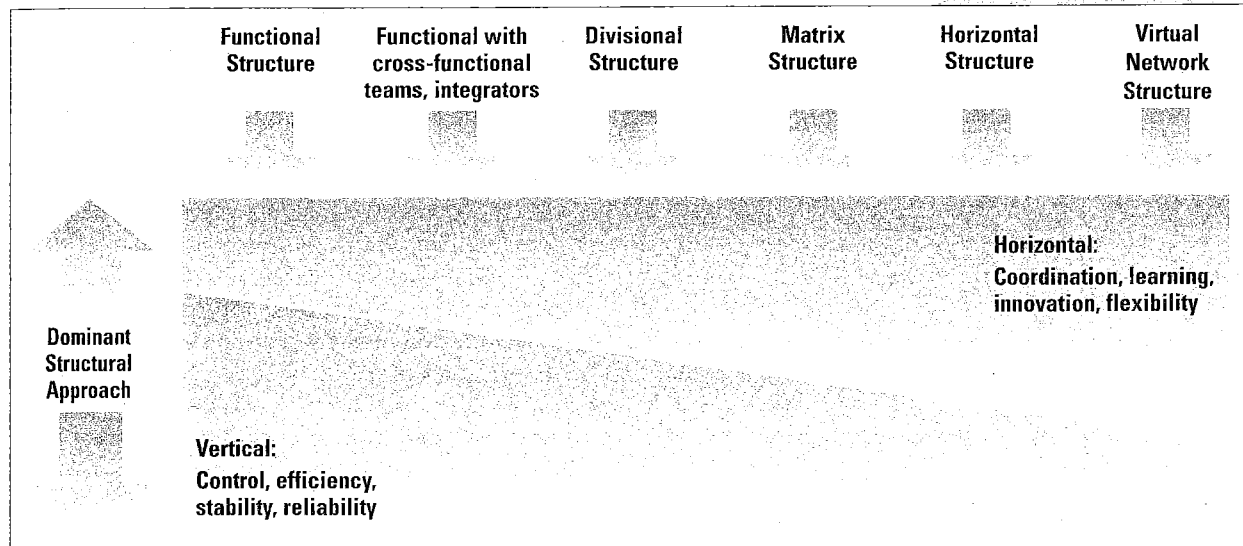
Each type of structure is applied in different situations and meets different needs. In describing the various structures, we touched briefly on conditions such as environmental stability or change and organizational size that are related to structure. Each form of structure—functional, divisional, matrix, horizontal, network, hybrid—represents a tool that can help managers make an organization more effective, depending on the demands of its situation.

**EXHIBIT 2.18**  
Two Hybrid Structures





**EXHIBIT 2.19**  
Relationship of Structure  
to Organization's Need  
for Efficiency versus  
Learning



with organization needs, one or more of the following **symptoms of structural deficiency** appear.<sup>67</sup>

- *Decision making is delayed or lacking in quality.* Decision makers may be overloaded because the hierarchy funnels too many problems and decisions to them. Delegation to lower levels may be insufficient. Another cause of poor-quality decisions is that information may not reach the correct people. Information linkages in either the vertical or horizontal direction may be inadequate to ensure decision quality.
- *The organization does not respond innovatively to a changing environment.* One reason for lack of innovation is that departments are not coordinated horizontally. The identification of customer needs by the marketing department and the identification of technological developments in the research department must be coordinated. Organization structure also has to specify departmental responsibilities that include environmental scanning and innovation.
- *Employee performance declines and goals are not being met.* Employee performance may decline because the structure doesn't provide clear goals, responsibilities, and mechanisms for coordination. The structure should reflect the complexity of the market environment yet be straightforward enough for employees to effectively work within.
- *Too much conflict is evident.* Organization structure should allow conflicting departmental goals to combine into a single set of goals for the entire organization. When departments act at cross-purposes or are under pressure to achieve departmental goals at the expense of organizational goals, the structure is often at fault. Horizontal linkage mechanisms are not adequate.