INTERNATIONAL EDITION

Managing Engineering and Technology

SIXTH EDITION

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ALWAYS LEARNING

PEARSON

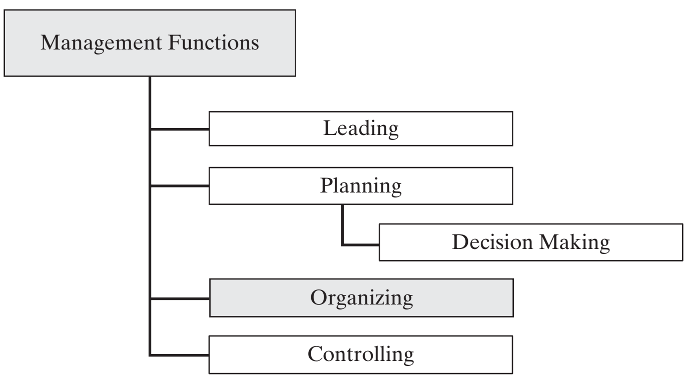
6

Organizing

PREVIEW

After the management functions of leading and planning, the next to be presented is organizing. This chapter begins by distinguishing between the legal forms of organization: proprietorship, partnership, and corporation. Next discussed is the organizing process and the various logics of subdivision, or *departmentation*. The effective spans of control are discussed as well as the nature of line, staff, and service relationships. The effect of technology on organization structure is described, and finally, the more modern organizational forms and teams are introduced.

Teams are an important part of the workforce today, and they are created either within the planning function or the organizing function, or with other management functions discussed in later chapters. Often, there are impromptu teams that are formed by employees spontaneously. Today many teams are virtual, or e-teams, and they work across space, time, and organizational boundaries with links strengthened by webs of communication technologies.



LEARNING OBJECTIVES

When you have finished studying this chapter, you should be able to do the following:

- Analyze the different forms of an organization.
- Explain different organizational structures.
- Describe the differences in line and staff relationships.
- Describe the use and value of teams.

NATURE OF ORGANIZING

Legal Forms of Organization

An organization is a group of individuals who work together toward a common goal. Here we will compare the types of legal entities into which businesses can be organized. These include the sole proprietorship, the partnership, the corporation, and the cooperative. We will then examine other aspects of organizations.

The **sole proprietorship** is a business owned and operated by one person. It is simple to organize and to shut down, has few legal restrictions, and the owner is free to make all decisions. Profit from it is taxed only once—on the Schedule C (Profit or Loss from Business or Profession) attachment to the owner's individual income tax form. However, the owner faces unlimited liability for the debts of the business, he or she may find it difficult to raise capital to fund growth of the business, and the duration of the business is limited to the life of the proprietor.

The **partnership** is an "association of two or more partners to carry on as co-owners of a business for profit" (Uniform Partnership Act). The partnership is almost as easy to organize as a proprietorship and has relatively few legal restrictions. Partnerships permit pooling the managerial skills and judgments and the financial strengths of several people who have a direct financial interest in the enterprise, but suffer the disadvantages of divided decision-making authority and potential damage to the business when partners disagree. Although a partnership files a tax return to allocate partnership profit (or loss), it does not pay taxes—the partners do so on their individual tax forms, whether they actually receive the profit or leave it in the enterprise to grow further. Normally, partners have unlimited liability for partnership debts. In a *limited partnership*, there must be at least one *general partner* with unlimited liability, but the rest may be *limited partners*, who are financially liable only to the extent of their investment in the venture.

A **limited liability company (LLC)** is a relatively new business structure allowed by state statute. Owners, called members, have limited personal liability for the debts and actions of the LLC. There is no maximum number of members and most states permit single member LLCs. LLCs are similar to a partnership, providing management flexibility and the benefit of pass-through taxation. Income is only taxed once.

Corporations are legal entities owned by shareholders, who in general have no liability beyond loss of the value of their stock. Corporations have perpetual life (as long as they submit an annual report to the state in which they are chartered), and they find it easier to raise money, transfer ownership, and change management. It is more difficult and expensive to organize a corporation, but the main disadvantage is that corporate income is taxed twice: once as corporation income tax the year the profit is made, and again as personal income tax when the after-tax profit is distributed as dividends. Also, corporations are subject to many state and federal controls not affecting other forms of business. (Under certain conditions, corporations with no more than 35 shareholders, all U.S. residents, may elect to be treated as "Subchapter S" corporations and avoid double taxation.)

Cooperatives are a special type of organization owned by users or customers, to whom earnings are usually distributed tax-free in proportion to patronage. For example, about 1,000 rural electric cooperatives distribute electricity over much of America's nonmetropolitan land area; each customer of this service buys a share initially for a few dollars, and he or she can cast one vote to elect the board members who manage the cooperative.

While sole proprietorships are the most common form of business organization in sheer numbers, most large organizations are corporations.

Organizing Defined

Weihrich and Koontz believe that people "will work together most effectively if they know the parts they are to play in any team operation and how their roles relate to one another.... Designing and maintaining these systems of roles is basically the managerial function of organizing." They continue:

> For an *organizational role* to exist and be meaningful to people, it must incorporate (1) verifiable objectives, which... are a major part of planning; (2) a clear idea of the major duties or activities involved; and (3) an understood area of discretion or authority, so that the person filling the role knows what he or she can do to accomplish goals. In addition, to make a role work out effectively, provision should be made for supplying needed information and other tools necessary for performance in that role.
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> It is in this sense that we think of *organizing* as (1) the identification and classification of required activities, (2) the grouping of activities necessary to attain objectives, (3) the assignment of each grouping to a manager with the authority (delegation) necessary to supervise it, and (4) the provision for coordination horizontally (on the same or similar organizational level) and vertically (for example, corporate headquarters, division, and department) in the organization structure.

Organizing by Key Activities

Effective organizing must first consider the basic mission and long-range objectives established for the organization and the strategy conceived to accomplish them. Peter Drucker recommends first identifying the *key activities*, which he terms the "load-bearing parts of the structure." He poses three questions to help identify the key activities:

1. In what area is excellence required to obtain the company's objectives?
2. In what areas would lack of performance endanger the results, if not the survival, of the enterprise?
3. What are the *values* that are truly important to us in this company?

Once the key activities have been established, Drucker suggests “two additional pieces of work: an analysis of decisions and an analysis of relations.” In *decision analysis* one must first identify what decisions are needed to attain effectiveness in key activities. Then the nature of these decisions is established in terms of their *futurity* (the period in the future to which they commit the company), the *impact* they have on other functions, their *frequency* (recurrent decisions can be made at lower levels once policies for them have been established), and the extent to which they involve ethical, social, and political considerations. *Relations analysis*, on the other hand, asks with whom the person in charge of an activity will have to work, and it seeks to assure “that the crucial relations, that is, the relationship on which depend its success and the effectiveness of its contribution, should be easy, accessible, and central to the unit.”

In the 1990s, more and more organizations were restructured into teams that include the specialists needed to carry through a project or solve a problem, and that are delegated the authority (*empowered*) to make the necessary decisions; and that continues in the twenty-first century. In the modern concept of *concurrent engineering* (discussed in Chapter 10), teams of design engineers, marketing people, and production specialists work together to launch new products earlier that better meet customer needs.

TRADITIONAL ORGANIZATION THEORY

Patterns of Departmentation

Organizations are divided into smaller units by using a number of different approaches. A **hierarchical organization** is an organizational structure where every entity in the organization, except one, is subordinate to a single other entity. This arrangement is a form of a hierarchy. This is the dominant mode of organization among large organizations; most corporations, governments, and organized religions are **hierarchical** organizations. This arrangement of individuals within a corporation may be according to power, status, and job function. Figure 6-1 illustrates two of the more

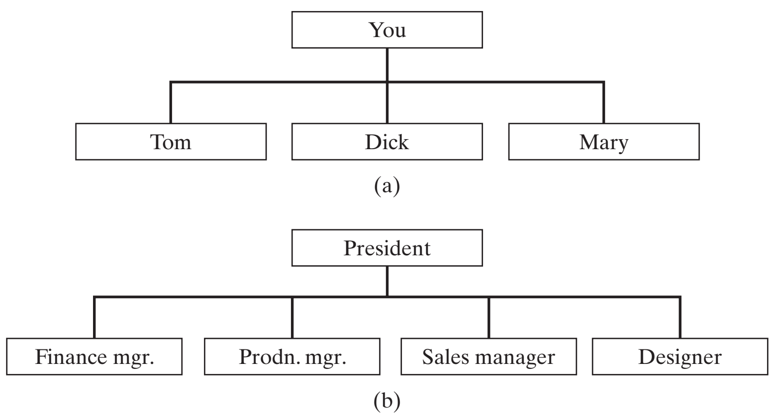

Figure 6-1 Methods of departmentation: (a) Basic organization. (b) Functional departmentation.

common methods and will be used to help us "grow" a company in the container business. Let us assume that you have a large collection of compact disks (CDs) and that you also enjoy woodworking. You begin to make some attractive wooden cabinets for your CDs in your basement or garage. They are admired by your friends and neighbors, who buy some, and then you find several local stores who want to carry them. You now are an *entrepreneur* and have a business. As demand increases, you need some help in the shop, and you hire several local people (Tom, Dick, and Mary) who will, naturally, take direction from you (Figure 6-1a).

As you grow, you find yourself away from the plant (now moved to a local industrial park) for extended periods, selling your product and arranging financing. You appoint the most experienced worker as foreman, and later as production manager. You hire salespeople to help sell your product and, as they increase in number, appoint one as sales manager. A local certified public accountant agrees to work half-time as your finance manager, and an engineering student moonlights as your designer. You have now established a pattern of **functional departmentation**, which is the first logic of subdivision for most new organizations, and which is present at some level in almost any organization. Functional subdivision need not be confined to a single level (as in Figure 6-1b). Marketing is often divided into sales, advertising, and market research. Production may be broken into component production, assembly, and finishing.

As your business grows, you may also become interested in producing clear plastic storage boxes for computer diskettes. You soon discover that production methods for plastic boxes are very different from those for wooden cabinets, and you organize separate production shops under separate supervisors to produce the two products. Next, you discover that your diskette boxes appeal to a different market, and you need a different group of salespeople. Then you find that the sales force dealing with diskette boxes needs much closer contact with your plastic box production foreman than they do with salespeople selling CD cabinets to the consumer, but that the chain of command through the general sales manager, then you, and finally the overall production manager makes decision making slow and difficult. You may now be ready to reorganize by *product* as in Figure 6-2a.

The separate CD cabinet and diskette box divisions will begin with their own manufacturing and marketing functions, and later you may add accounting and personnel functions to each division. Because obtaining bank loans, selling stock, and other financial activities are best handled centrally, you will need consistent personnel policies in both divisions, and you need some top-level advice on new markets and new technical advances; thus, you will need to organize a *staff* at the corporate level in addition to your product divisions.

In the days of the pony express, long-distance communication was slow and unreliable. If an enterprise on the American east coast wished to set up a west coast division, they would have to give the regional manager broad authority, perhaps even creating **geographic** or **territorial** divisions, as in Figure 6-2b. Today, however, managers communicate by telephone, e-mail and fax machine across the world almost as easily as with the next building, and they can jet anywhere in the continent in a day for more protracted personal meetings. As a result, communication per se is no longer the most important logic for top-level organization. However, you may find that accommodating regional differences is the key to effective management, and you may then create regional (geographic) divisions. A company that builds housing developments may find, for example, that regional differences in housing styles, construction codes, marketing media, and methods of mortgage financing are very important, and you may set up separate geographic divisions, each responsible for construction and marketing in its own region. Geographic subdivision is