CHAPTER 16

Managing Employee Motivation and Performance

OPENING INCIDENT

For years Continental Airlines was a company going nowhere. The firm was wallowing in red ink and had perhaps the poorest reputation of any carrier in the airline industry. For example, the company lost $2.4 billion in 1990 alone, and many business travelers routinely refused to fly Continental. The airline also went through two bankruptcies and a succession of ineffective senior leaders. Continental's pilots and rank-and-file workers endured layoffs, wage cuts, poor benefits, and broken promises by management. Indeed, many were frequently embarrassed to tell people where they worked and few were motivated to work any harder than was necessary.

But in late 1994, the situation began to change. The key to what would eventually become one of the biggest turnarounds in the history of U.S. business was the appointment of a new CEO, Gordon Bethune. Bethune, a former fighter pilot in the Navy and chief engineer at Boeing, had a reputation for making tough but effective decisions. He was also known to be fair and open with employees. The board of directors told him to do whatever needed to be done to make Continental competitive again.

One area that needed immediate attention was operations. Bethune frantically cut unprofitable routes and added new and more profitable ones in their places. He also overhauled the firm's ticketing and baggage-handling operations, improved marketing, and updated the firm's fleet of aircraft. He also overhauled Continental's cash management system. But Bethune knew that operations alone were not the only problem areas—he also knew that employee motivation was at the root of many of the company's problems.

One of the biggest problems Bethune had to overcome was the legacy of his predecessors. Employees at Continental had endured ten CEOs in fifteen years. Many of these CEOs, in turn, had at least been perceived as being ineffective and as exhibiting little concern for the company's employees. As a result, many of those same employees had developed a deep-seated mistrust of top managers and few were motivated to follow their lead.

One thing Bethune noticed immediately was that the primary variable-pay component in how the firm paid its pilots was based on fuel-cost savings. As soon as he changed this system to pay instead for on-time performance, Continental moved quickly from last in the industry in on-time performance to the middle of the industry.

Bethune then calculated that this increase in performance was saving the firm millions of dollars, because when planes are late, an airline must often pay for passengers' meals and hotel rooms and for rebooking them

". . . I've never heard of a successful company that didn't have people who liked working there."

*—Gordon Bethune, CEO of Continental Airlines**

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Characterize the nature of motivation, including its importance and basic historical perspectives.
- Identify and describe the major content perspectives on motivation.
- Identify and describe the major process perspectives on motivation.
- Describe reinforcement perspectives on motivation.
- Identify and describe popular motivational strategies.
- Describe the role of organizational reward systems in motivation.

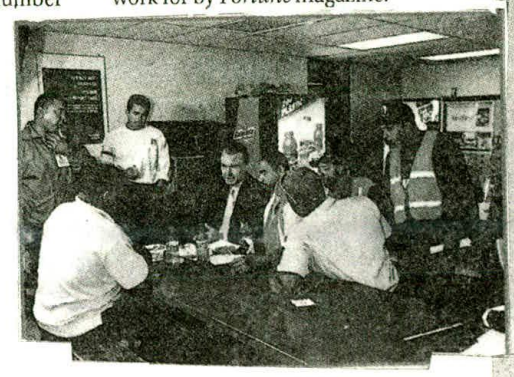
CHAPTER OUTLINE

- **The Nature of Motivation**
  - The Importance of Motivation in the Workplace
  - Historical Perspectives on Motivation
- **Content Perspectives on Motivation**
  - The Need Hierarchy Approach
  - The Two-Factor Theory
  - Individual Human Needs
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  - Kinds of Reinforcement in Organizations
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- **Popular Motivational Strategies**
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onto other airlines. He divided the total savings by the number of employees and sent each of them a check for that amount—$65 per employee. While not a big sum, this action served as an important demonstration that he was willing to share success with everyone. He also announced that, henceforth, each employee would receive a check for $65 every month that Continental was in the top five in on-time performance and a check for $100 when it was in the top three.

Bethune also wanted to improve communication throughout Continental. He set up a toll-free number for employees to call with complaints and problems. He created a committee to respond to every call within forty-eight hours. He also gave employees his own personal voice mail number, and he returns many of these calls himself. Today, he is careful to refer to Continental's employees as his "coworkers."

Bethune also began to restore wages to employees that had been previously cut. And again, Continental's employees have responded in dramatic fashion. Once the joke of the airline industry, Continental is now among the most profitable carriers in the world, and its reputation among business travelers has soared near the top of the ratings. Indeed, the firm won the J. D. Powers customer satisfaction award as the best long-haul carrier in the United States several times in the last few years, and Continental was recently listed as one of the 100 best companies to work for by *Fortune* magazine.[1]



Several different factors have contributed to the remarkable turnaround at Continental. Enhanced employee motivation, moreover, is clearly one of the most significant. Almost any organization is capable of developing and maintaining a motivated workforce. The trick is figuring how to create a system in which employees can receive rewards that they genuinely want by performing in ways that fit the organization's goals and objectives.

In most settings, people can choose how hard they work and how much effort they expend. Thus, managers need to understand how and why employees make different choices regarding their own performance. The key ingredient behind this choice is motivation, the subject of this chapter. We first examine the nature of employee motivation and then explore the major perspectives on motivation. Newly emerging approaches are then discussed. We conclude with a description of rewards and their role in motivation.

The Nature of Motivation

motivation The set of forces that cause people to behave in certain ways

Motivation is the set of forces that cause people to behave in certain ways.[2] On any given day, an employee may choose to work as hard as possible at a job, to work just hard enough to avoid a reprimand, or to do as little as possible. The goal for the manager is to maximize the likelihood of the first behavior and to minimize the likelihood of the last. This goal becomes all the more important when we understand how critical motivation is in the workplace.

The Importance of Motivation in the Workplace

Individual performance is generally determined by three things: motivation (the desire to do the job), ability (the capability to do the job), and the work environment (the resources needed to do the job). If an employee lacks ability, the manager can provide training or replace the worker. If there is a resource problem, the manager can correct it. But if motivation is the problem, the task for the manager is more challenging. Individual behavior is a complex phenomenon, and the manager may be hard-pressed to figure out the precise nature of the problem and how to solve it. Thus, motivation is important because of its significance as a determinant of performance and because of its intangible character.[3]

The motivation framework in Figure 16.1 is a good starting point for understanding how motivated behavior occurs. The motivation process begins with a need deficiency. For example, when a worker feels that she is underpaid, she experiences a need for more income. In response, the worker searches for ways to satisfy the need, such as working harder to try to earn a raise or seeking a new job. Next, she chooses an option to pursue. After carrying out the chosen option—working harder and putting in more hours for a reasonable period of time, for example—she then evaluates her success. If her hard work resulted in a pay raise, she probably feels good about her situation and will continue to work hard. But if no raise has been provided, she is likely to try another option.

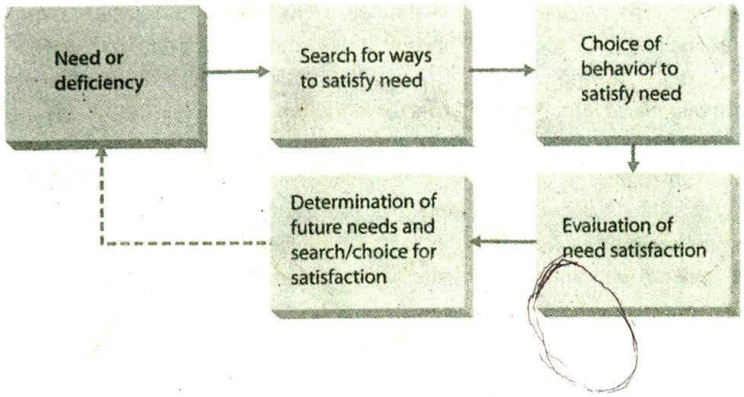


Figure 16.1

The Motivation Framework

The motivation process progresses through a series of discrete steps. Content, process, and reinforcement perspectives on motivation address different parts of this process.

Historical Perspectives on Motivation

To appreciate what we know about employee motivation, it is helpful to review earlier approaches. The traditional, human relations, and human resource approaches have each shed partial light on motivation.[4]

The Traditional Approach The traditional approach is represented best by the work of Frederick W. Taylor.[5] As noted in Chapter 2, Taylor advocated an incentive pay system. He believed that managers knew more about the jobs being performed than did workers, and he assumed that economic gain was the primary thing that motivated everyone. Other assumptions of the traditional approach are that work is inherently unpleasant for most people and that the money they earn is more important to employees than the nature of the job they are performing. Hence, people could be expected to perform any kind of job if they were paid enough. Although the role of money as a motivating factor cannot be dismissed, proponents of the traditional approach took too narrow a view of the role of monetary compensation and also failed to consider other motivational factors.

The Human Relations Approach The human relations approach was also summarized in Chapter 2.[6] The human relationists emphasized the role of social processes in the workplace. Their basic assumptions were that employees want to feel useful and important, that employees have strong social needs, and that these needs are more important than money in motivating employees. Advocates of the human relations approach advised managers to make workers feel important and allow them a modicum of self-direction and self-control in carrying out routine activities. The illusion of involvement and importance were expected to satisfy workers' basic social needs and result in higher motivation to perform. For example, a manager might allow a work group to participate in making a decision, even though he or she had already determined what the decision would be. The symbolic gesture of seeming to allow participation was expected to enhance motivation, even though no real participation took place.

The Human Resource Approach The human resource approach to motivation carries the concepts of needs and motivation one step farther. Whereas the human relationists believed that the illusion of contribution and participation would enhance motivation, the human resource view assumes that the contributions themselves are valuable to both individuals and organizations. It assumes that people want to contribute and are able to make genuine contributions. Management's tasks, then, are to encourage participation and to create a work environment that makes full use of the human resources available. This philosophy guides most contemporary thinking about employee motivation. At Ford, Westinghouse, Texas Instruments, and Hewlett-Packard, for example, work teams are being called on to solve a variety of problems and to make substantive contributions to the organization.

MANAGEMENT IMPLICATIONS Managers should understand the central role that motivation plays in determining employee job performance. They should also be familiar with traditional approaches to motivation.

■ Content Perspectives on Motivation

content perspectives Approaches to motivation that try to answer the question, "What factors in the workplace motivate people?"

Content perspectives on motivation deal with the first part of the motivation process—needs and need deficiencies. More specifically, **content perspectives** address the question, "What factors in the workplace motivate people?" Labor leaders often argue that workers can be motivated by more pay, shorter working hours, and improved working conditions. Meanwhile, some experts suggest that motivation can be enhanced more effectively by providing employees with more autonomy and greater responsibility.[7] Both of these views represent content views of motivation. The former asserts that motivation is a function of pay, working hours, and working conditions; the latter suggests that autonomy and responsibility are the causes of motivation. Two widely known content perspectives on motivation are the need hierarchy and the two-factor theory.

The Need Hierarchy Approach

The need hierarchy approach has been advanced by many theorists. Need hierarchies assume that people have different needs that can be arranged in a hierarchy of importance. The two best known are Maslow's hierarchy of needs and the ERG theory.

Maslow's hierarchy of needs Suggests that people must satisfy five groups of needs in the following order—physiological, security, belongingness, esteem, and self-actualization

Maslow's Hierarchy of Needs Abraham Maslow, a human relationist, argued that people are motivated to satisfy five need levels.[8] **Maslow's hierarchy of needs** is shown in Figure 16.2. At the bottom of the hierarchy are the *physiological needs*—things like food, sex, and air that represent basic issues of survival and biological function. In organizations, these needs are generally satisfied by adequate wages and the work environment itself, which provides restrooms, adequate lighting, comfortable temperatures, and ventilation.

Next are the *security needs* for a secure physical and emotional environment. Examples include the desire for housing and clothing and the need to be free from

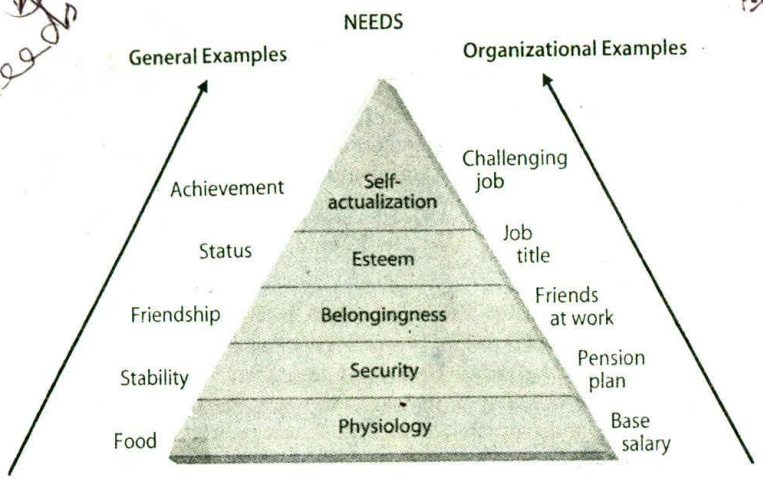


Figure 16.2

Maslow's Hierarchy of Needs

Maslow's hierarchy suggests that human needs can be classified into five categories and that these categories can be arranged in a hierarchy of importance. A manager should understand that an employee may not be satisfied with only a salary and benefits; he or she may also need challenging job opportunities to experience self-growth and satisfaction.

Source: Adapted from Abraham H. Maslow, "*A Theory of Human Motivation*," *Psychology Review*, 1943, Vol. 50, pp. 370–396.

worry about money and job security. These needs can be satisfied in the workplace by job continuity (no layoffs), a grievance system (to protect against arbitrary supervisory actions), and an adequate insurance and retirement benefits package (for security against illness and for the provision of income in later life). Even today, however, depressed industries and economic decline can put people out of work and restore the primacy of security needs.

Belongingness needs relate to social processes. They include the need for love and affection and the need to be accepted by one's peers. These needs are satisfied for most people by family and community relationships outside work and friendships on the job. A manager can help satisfy these needs by allowing social interaction and by making employees feel like part of a team or work group.

Esteem needs actually comprise two different sets of needs: the need for a positive self-image and self-respect and the need for recognition and respect from others. A manager can help address these needs by providing a variety of extrinsic symbols of accomplishment such as job titles, comfortable offices, and similar rewards as appropriate. At a more intrinsic level, the manager can provide challenging job assignments and opportunities for the employee to feel a sense of accomplishment.

At the top of the hierarchy are the *self-actualization* needs. These needs involve realizing one's potential for continued growth and individual development. The self-actualization needs are perhaps the most difficult for a manager to address. In fact, it can be argued that these needs must be met entirely from within the individual. But a manager can help by promoting a culture wherein self-actualization is possible. For instance, a manager could give employees a chance to participate in making decisions about their work and the opportunity to learn and use new information, skills, and capabilities.

Maslow suggests that the five need categories constitute a hierarchy. An individual is motivated first and foremost to satisfy physiological needs. As long as they remain unsatisfied, the individual is motivated only to fulfill them. When satisfaction of physiological needs is achieved, they cease to act as primary motivational factors

and the individual moves "up" the hierarchy and becomes concerned with security needs. This process continues until the individual reaches the self-actualization level. Maslow's concept of the need hierarchy has a certain intuitive logic and has been accepted by many managers. But research has revealed certain shortcomings and defects in the theory. Some research has found that the five levels of need are not always present and that the order of the levels is not always the same as postulated by Maslow.[9] In addition, people from different cultures are likely to have different need categories and hierarchies.

ERG theory of motivation Suggests that people's needs are grouped into three possibly overlapping categories—existence, relatedness, and growth

The ERG Theory In response to these and similar criticisms, an alternative hierarchy of needs called the **ERG theory of motivation** was developed.[10] This theory collapses the need hierarchy developed by Maslow into three levels. *Existence needs* correspond to the physiological and security needs. *Relatedness needs* focus on how people relate to their social environment. In Maslow's hierarchy, they would encompass both the need to belong and the need to earn the esteem of others. *Growth needs*, the highest level in the ERG schema, include the needs for self-esteem and self-actualization.

Although the ERG theory assumes that motivated behavior follows a hierarchy in somewhat the same fashion as suggested by Maslow, there are two important differences. First, the ERG theory suggests that more than one level of need can cause motivation at the same time. For example, it suggests that people can be motivated by a desire for money (existence), friendship (relatedness), and the opportunity to learn new skills (growth) all at once. Second, the ERG theory has what has been called a *frustration-regression* element. Thus, if needs remain unsatisfied, the individual will become frustrated, regress to a lower level, and begin to pursue



Both Maslow's hierarchy of needs and the ERG theory of motivation suggest that people will be motivated by opportunities for personal growth and development. Take Darien Dash, for example, the first African American to take a dot-com public. Throughout his life he has been motivated to learn new skills, develop new competencies, and explore new opportunities. And now that he has achieved success, he is working just as hard to help others succeed by providing computers, computer training, and Internet access to urban youth who otherwise might not be able to afford them.

those needs again. For example, a worker previously motivated by money (existence needs) may have just been awarded a pay raise sufficient to satisfy those needs. Suppose that he then attempts to establish more friendships to satisfy relatedness needs. If, for some reason, he finds that it is impossible to become better friends with others in the workplace, he eventually gets frustrated and regresses to being motivated to earn even more money.

The Two-Factor Theory

Another popular content perspective is the **two-factor theory of motivation**.[11] Frederick Herzberg developed his theory by interviewing 200 accountants and engineers. He asked them to recall occasions when they had been satisfied and motivated and occasions when they had been dissatisfied and unmotivated. Surprisingly, he found that different sets of factors were associated with satisfaction and with dissatisfaction—that is, a person might identify "low pay" as causing dissatisfaction but would not necessarily mention "high pay" as a cause of satisfaction. Instead, different factors—such as recognition or accomplishment—were cited as causing satisfaction and motivation.

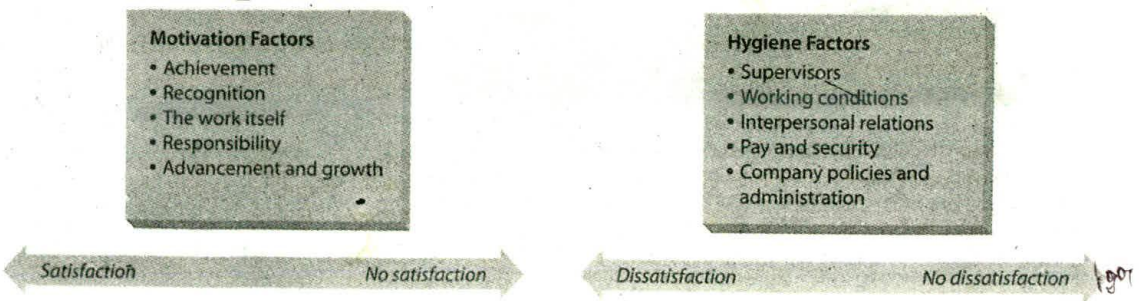
two-factor theory of motivation Suggests that people's satisfaction and dissatisfaction are influenced by two independent sets of factors—motivation factors and hygiene factors

This finding led Herzberg to conclude that the traditional view of job satisfaction was incomplete. That view assumed that satisfaction and dissatisfaction are at opposite ends of a single continuum. People might be satisfied, dissatisfied, or somewhere in between. But Herzberg's interviews had identified two different dimensions altogether: one ranging from satisfaction to no satisfaction and the other ranging from dissatisfaction to no dissatisfaction. This perspective, along with several examples of factors that affect each continuum, is shown in Figure 16.3. Note that the factors influencing the satisfaction continuum—called motivation factors—are related specifically to the work content. The factors presumed to cause dissatisfaction—called hygiene factors—are related to the work environment.

Figure 16.3

The Two-Factor Theory of Motivation

The two-factor theory suggests that job satisfaction has two dimensions. A manager who tries to motivate an employee using only hygiene factors such as pay and good working conditions will likely not succeed. To motivate employees and produce a high level of satisfaction, managers must also offer factors such as responsibility and the opportunity for advancement (motivation factors).



Based on these findings, Herzberg argues that there are two stages in the process of motivating employees. First, managers must ensure that the hygiene factors are not deficient. Pay and security must be appropriate, working conditions must be safe, technical supervision must be acceptable, and so on. By providing hygiene factors at an appropriate level, managers do not stimulate motivation but merely ensure that employees are "not dissatisfied." Employees whom managers attempt to "satisfy" through hygiene factors alone will usually do just enough to get by. Thus, managers should proceed to stage two—giving employees the opportunity to experience motivation factors such as achievement and recognition. The result is predicted to be a high level of satisfaction and motivation. Herzberg also goes a step farther than most theorists and describes exactly how to use the two-factor theory in the workplace. Specifically, he recommends job enrichment, as discussed in Chapter 11. He argues that jobs should be redesigned to provide higher levels of the motivation factors.

Although widely accepted by many managers, Herzberg's two-factor theory is not without its critics. One criticism is that the findings in Herzberg's initial interviews are subject to different explanations. Another charge is that his sample was not representative of the general population and that subsequent research often failed to uphold the theory.[12] At the present time, Herzberg's theory is not held in high esteem by researchers in the field. The theory has had a major impact on managers, however, and has played a key role in increasing their awareness of motivation and its importance in the workplace.



People have a variety of individual needs, including the needs for achievement and for affiliation. This group of women, for example, clearly reflects both needs. The women are successful venture capitalists in California's Silicon Valley. Their individual needs for achievement have no doubt played a significant role in their climb to success. But while each has attained a high degree of personal success, they still feel a need to spend time with others. As a result, they have started a weekly poker match just to get together and have fun.

Individual Human Needs

In addition to these theories, research has also focused on specific individual human needs that are important in organizations. *Managing in an e-Business World* summarizes how some dot.com businesses are finding Los Angeles to be an especially attractive location for helping employees meet diverse needs. The three most important individual needs are achievement, affiliation, and power.[13]

The **need for achievement**, the best known of the three, is the desire to accomplish a goal or task more effectively than in the past. People with a high need for achievement have a desire to assume personal responsibility, a tendency to set moderately difficult goals, a desire for specific and immediate feedback, and a preoccupation with their task. David C. McClelland,

MANAGING IN AN *e*-BUSINESS WORLD

Los Angeles Culture Motivates Dot-Com Start-Ups

Although California's Silicon Valley has built a global reputation as an e-business epicenter, Los Angeles is fast becoming a hot location for dot-coms interested in attracting and motivating top industry talent. Why Los Angeles? E-business entrepreneurs and employees clearly want more than a good pay package, stock options, and a pleasant workspace; many are motivated by higher-order needs such as belongingness, esteem, and self-actualization. Los Angeles offers more opportunities to feel part of a vibrant entertainment culture, rub shoulders with Hollywood people, and party or surf with tech types from some of the best-known start-ups on the Web.

A growing number of e-businesses have sprung up in and around Los Angeles, including eToys, Stamps.com, and idealab! Stuart Levy, founder of Mixx Entertainment, chose Los Angeles because of the stimulation provided by its unique blend of multimedia and high-tech activities. And when Los Angeles–based film and television executives get the urge to run an e-business, they stay in the area to benefit from the creativity of its entertainment culture. For example, Chuck Davis quit Walt Disney to take the helm at BizRate.com, while Bill Keenan left e! Entertainment to head up Swap.com (now Spun.com)—both are located in Los Angeles, where they can tap the content talents of local writers and designers and stay in touch with their studio buddies.

Personal contact is high on the list of priorities for e-commerce entrepreneurs as well as employees who spend hour after hour in front of their keyboards. Los Angeles boasts numerous grassroots networking groups where web-savvy employees can mingle, share stories, and troll for new projects and job opportunities. Would-be Internet moguls gather at events such as Venice Interactive.com to hear advice from knowledgeable speakers and to trade business cards. For these e-business participants, Los Angeles is definitely the place to be.

For me, content and entertainment are so much a part of what I'm about, and there's no other city, perhaps with the exception of New York, where you can get this combination of multimedio and the Internet.

—Stuart Levy, founder of Mixx Entertainment*

Reference: Peter Gumbel and Rick Wartzman, "E-covery: Los Angeles Gets Back Its Groove As the Web Discovers Hollywood," *Wall Street Journal*, January 5, 2000, pp. A1, A12 (*quote on p. A1).

the psychologist who first identified this need, argues that only about 10 percent of the U.S. population has a high need for achievement. In contrast, almost 25 percent of the workers in Japan have a high need for achievement.

need for achievement The desire to accomplish a goal or task more effectively than in the past

The **need for affiliation** is less well understood. Like Maslow's belongingness need, the need for affiliation is a desire for human companionship and acceptance. People with a strong need for affiliation are likely to prefer (and perform better in) a job that entails a lot of social interaction and offers opportunities to make friends. The need for power has also received considerable attention as an important ingredient in managerial success.

need for affiliation The desire for human companionship and acceptance

The **need for power** is the desire to be influential in a group and to control one's environment. Research has shown that people with a strong need for power are likely to be superior performers, have good attendance records, and occupy supervisory positions. One study found that managers as a group tend to have a stronger power motive than the general population and that successful managers tend to have stronger power motives than less successful managers.[14]

need for power The desire to be influential in a group and to control one's environment

MANAGEMENT IMPLICATIONS Managers should remember that Maslow's need hierarchy; the ERG theory; the two-factor theory; and the needs for achievement, affiliation, and power all provide useful insights into factors that cause motivation. What they do not do is shed much light on the process of motivation. They do not explain why people might be motivated by one factor rather than by another at a given level or how people might go about trying to satisfy the different needs. These questions involve behaviors or actions, goals, and feelings of satisfaction—concepts that are addressed by various process perspectives on motivation.

■ Proces Perspectives of Motivation

process perspectives Approaches to motivation that focus on why people choose certain behavioral options to satisfy their needs and how they evaluate their satisfaction after they have attained these goals

Process perspectives are concerned with how motivation occurs. Rather than attempting to identify motivational stimuli, **process perspectives** focus on why people choose certain behavioral options to satisfy their needs and how they evaluate their satisfaction after they have attained these goals. Three useful process perspectives on motivation are the expectancy, equity, and goal-setting theories.

Expectancy Theory

expectancy theory Suggests that motivation depends on two things—how much we want something and how likely we think we are to get it

Expectancy theory suggests that motivation depends on two things—how much we want something and how likely we think we are to get it.[15] Assume that you are approaching graduation and looking for a job. You see in the want ads that General Motors is seeking a new vice president with a starting salary of $500,000 per year. Even though you might want the job, you will not apply because you realize that you have little chance of getting it. The next ad you see is for someone to scrape bubble gum from underneath theater seats for a starting salary of $6 an hour. Even though you could probably get this job, you do not apply because you do not want it. Then you see an ad for a management trainee at a big company with a starting salary of $35,000. You will probably apply for this job because you want it and because you think you have a reasonable chance of getting it.

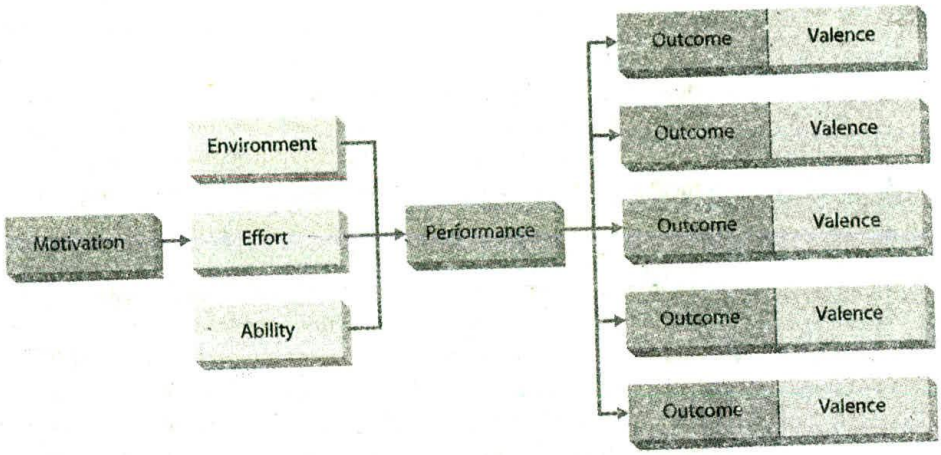
Expectancy theory rests on four basic assumptions. First, it assumes that behavior is determined by a combination of forces in the individual and in the environment; second, that people make decisions about their own behavior in organizations; third, that different people have different types of needs, desires, and goals; and fourth, that people make choices from among alternative plans of behavior based on their perceptions of the extent to which a given behavior will lead to desired outcomes.

Figure 16.4 summarizes the basic expectancy model. The model suggests that motivation leads to effort and that effort, combined with employee ability and environmental factors, results in performance. Performance, in turn, leads to various outcomes, each of which has an associated value called its valence. The most important parts of the expectancy model cannot be shown in the figure, however. These important parts are the individual's expectation that effort will lead to high

Figure 16.4

The Expectancy Model of Motivation

The expectancy model of motivation is a complex but relatively accurate portrayal of how motivation occurs. According to this model, a manager must understand what employees want (such as pay, promotions, or status) to begin to motivate them.



performance, that performance will lead to outcomes, and that each outcome will have some kind of value.

Effort-to-Performance Expectancy The **effort-to-performance expectancy** is the individual's perception of the probability that his or her effort will lead to high performance. When the individual believes that effort will lead directly to high performance, expectancy will be quite strong (a probability close to 1.00). When the individual believes that effort and performance are unrelated, the effort-to-performance expectancy is very weak (a probability close to 0.00). The belief that effort is somewhat but not strongly related to performance carries with it a moderate expectancy (a probability somewhere between 0.00 and 1.00).

effort-to-performance expectancy The individual's perception of the probability that his or her effort will lead to high performance

Performance-to-Outcome Expectancy The **performance-to-outcome expectancy** is the individual's perception that her or his performance will lead to a specific outcome. For example, if the individual believes that high performance will result in a pay raise, the performance-to-outcome expectancy is high (a probability approaching 1.00). The individual who believes that high performance may lead to a pay raise has a moderate expectancy (a probability between 1.00 and 0.00). The individual who believes that performance has no relationship with rewards has a low performance-to-outcome expectancy (a probability close to 0.00).

performance-to-outcome expectancy The individual's perception that her or his performance will lead to a specific outcome

Outcomes and Valences Expectancy theory recognizes that an individual's behavior results in a variety of **outcomes**, or consequences, in an organizational setting. A high performer, for example, may get bigger pay raises, faster promotions,

outcomes Consequences of behaviors in an organizational setting, usually rewards

valence An index of how much an individual values a particular outcome; it is the attractiveness of the outcome to the individual

and more praise from the boss. On the other hand, she may also be subject to more stress and incur resentment from coworkers. Each of these outcomes also has an associated value, or **valence**—an index of how much an individual values a particular outcome. If the individual wants the outcome, its valence is positive; if the individual does not want the outcome, its valence is negative; and if the individual is indifferent to the outcome, its valence is zero.

This part of expectancy theory goes beyond the content perspectives on motivation. Different people have different needs, and they will try to satisfy these needs in different ways. For an employee who has a high need for achievement and a low need for affiliation, the pay raise and promotions cited above as outcomes of high performance might have positive valences, the praise and resentment might have zero valences, and the stress might have a negative valence. For a different employee with a low need for achievement and a high need for affiliation, the pay raise, promotions, and praise might all have positive valences, whereas both resentment and stress could have negative valences.

For motivated behavior to occur, three conditions must be met. First, the effort-to-performance expectancy must be greater than zero (the individual must believe that if effort is expended, high performance will result). The performance-to-outcome expectancy must also be greater than zero (the individual must believe that if high performance is achieved, certain outcomes will follow). And the sum of the valences for the outcomes must be greater than zero. One or more outcomes may have negative valences, but they are offset by the greater absolute value of the positive valences of other outcomes. For example, the attractiveness of a pay raise, a promotion, and praise from the boss may outweigh the unattractiveness of more stress and resentment from coworkers. Expectancy theory suggests that when these conditions are met, the individual is motivated to expend effort.

Starbucks credits its unique stock ownership program with maintaining a dedicated and motivated workforce. Based on the fundamental concepts of expectancy theory, Starbucks employees earn stock as a function of their seniority and performance. Thus, their hard work helps them earn shares of ownership in the company.[16] *Today's Management Issues* explores the role of executive stock options from an expectancy theory perspective.

The Porter-Lawler Extension An interesting extension of expectancy theory has been proposed by Porter and Lawler.[17] Recall from Chapter 2 that the human relationists assumed that employee satisfaction causes high performance. We also noted that research has not supported such a relationship. Porter and Lawler suggest that there may indeed be a relationship between satisfaction and performance, but that it goes in the opposite direction—that is, high performance may lead to high satisfaction. Figure 16.5 summarizes Porter and Lawler's logic. Performance results in rewards for an individual. Some of these are extrinsic (such as pay and promotions); others are intrinsic (such as self-esteem and accomplishment). The individual evaluates the equity, or fairness, of the rewards relative to the effort expended and the level of performance attained. If the rewards are perceived to be equitable, the individual is satisfied.

Equity Theory

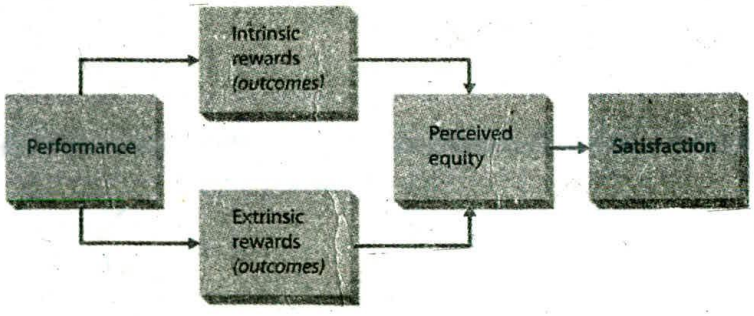
After needs have stimulated the motivation process and the individual has chosen an action that is expected to satisfy those needs, the individual assesses the fairness, or equity, of the resultant outcome. **Equity theory** contends that people are motivated to seek social equity in the rewards they receive for performance.[18] Equity is an individual's belief that the treatment he or she receives is fair relative to the treatment received by others. According to equity theory, outcomes from a job include pay, recognition, promotions, social relationships, and intrinsic rewards. To get these rewards, the individual gives inputs to the job, such as time, experience, effort, education, and loyalty. The theory suggests that people view their outcomes and inputs as a ratio and then compare it to the ratio of someone else. This other "person" may be someone in the work group or some sort of group average or composite. The process of comparison looks like this:

equity theory Suggests that people are motivated to seek social equity in the rewards they receive for performance

$$\frac{\text{outcomes (self)}}{\text{inputs (self)}} = \frac{\text{outcomes (other)}}{\text{inputs (other)}}$$

Both the formulation of the ratios and the comparisons between them are very subjective and are based on individual perceptions. As a result of comparisons, three conditions may result: the individual may feel equitably rewarded, underrewarded, or overrewarded. A feeling of equity will result when the two ratios are equal. This situation may occur even though the other person's outcomes are greater than the individual's own outcomes—provided that the other's inputs are also proportionately greater. Suppose that Mark has a high school education and earns $30,000. He may still feel equitably treated relative to Susan, who earns $35,000, because she has a college degree.

People who feel underrewarded try to reduce the inequity. Such individuals might decrease their inputs by exerting less effort, increasing their outcomes by asking for a raise, distorting the original ratios by rationalizing, trying to get the other person to change her or his outcomes or inputs, leaving the situation, or changing the object of comparison. An individual may also feel overrewarded relative to another person. This situation is not likely to be terribly disturbing to



Source: Edward E. Lawler III and Lyman W. Porter, "The Effect of Performance on Job Satisfaction," *Industrial Relations*, October 1967, p. 23. Used with permission of the University of California.

Figure 16.5

The Porter-Lawler Extension of Expectancy Theory

The Porter-Lawler extension of expectancy theory suggests that if performance results in equitable rewards, people will be more satisfied. Thus, performance can lead to satisfaction. Managers must therefore be sure that any system of motivation includes rewards that are fair, or equitable, for all.

TODAY'S MANAGEMENT ISSUES

Using Options to Reward Performance at the Top

Managerial performance is measured in many ways against many goals. At publicly traded companies, the long-term trend of the stock price is a key bottom-line measure of top management's performance. As a result, many companies reward CEOs and senior managers with stock options: the right to buy a certain number of shares at a discount after the stock has reached or exceeded a target price. Once the stock price rises to the target level, these managers can buy shares at the discounted price and sell them for an immediate profit. During a bull market, when share prices are generally on the rise, top managers have a higher expectation that their efforts will result in high performance, as reflected in higher stock prices.

Now some executive pay experts are calling for a switch to indexed stock options as a way of linking rewards for top management performance to a more specific outcome standard. The purpose of indexed stock options is to reward performance relative to the performance of a specific industry group or a particular market index. For example, a company might grant options that the CEO can exercise if the stock price moves higher than the Dow Jones Industrial Average or a specific industry grouping within that average. If the company's stock doesn't beat that index, the CEO can't profit from the options.

Proponents say indexed stock options offer top managers sizable rewards for solid performance as reflected in stock prices that exceed a preset target. Even in a bear market, when share prices are generally on the decline, top managers can still expect to profit if their company's share price remains above that of its peers. At the same time, underperforming CEOs will feel the financial pinch if they don't boost performance in a way that is ultimately reflected in the stock price. On the other hand, indexed stock options require complicated accounting measures and entail greater risk, which is why few firms use them. Still, shareholder groups and pension funds are pushing for indexed stock options—and CEOs may embrace them if the stock market swoons, making traditional options valueless.

Indexed options hold the executive to a higher standard.

—Robin A. Ferracone, chairman, SCA Consulting*

Reference: Jennifer Reingold, "An Options Plan Your CEO Hates," *Business Week*, February 28, 2000, pp. 82–88 (*quote on p. 82).

most people, but research suggests that some people who experience inequity under these conditions are somewhat motivated to reduce it. Under such a circumstance, the person might increase his inputs by exerting more effort, reducing his outcomes by producing fewer units (if paid on a per-unit basis), distorting the original ratios by rationalizing, or trying to reduce the inputs or to increase the outcomes of the other person.

Goal-Setting Theory

The goal-setting theory of motivation assumes that behavior is a result of conscious goals and intentions.[19] Therefore, by setting goals for people in the organization, a manager should be able to influence their behavior. Given this premise, the challenge is to develop a thorough understanding of the processes by which people set goals and then work to reach them. In the original version of goal-setting theory, two specific goal characteristics—goal difficulty and goal specificity—were expected to shape performance.

Goal Difficulty *Goal difficulty* is the extent to which a goal is challenging and requires effort. If people work to achieve goals, it is reasonable to assume they will work harder to achieve more difficult goals. But a goal must not be so difficult that it is unattainable. If a new manager asks her sales force to increase sales by 300 percent, the group may become disillusioned. A more realistic but still difficult goal—perhaps a 30 percent increase—would be a better incentive. A substantial body of research supports the importance of goal difficulty. In one study, for example, managers at Weyerhauser set difficult goals for truck drivers hauling loads of timber from cutting sites to wood yards. Over a nine-month period, the drivers increased the quantity of wood they delivered by an amount that would have required $250,000 worth of new trucks at the previous per-truck average load.[20]

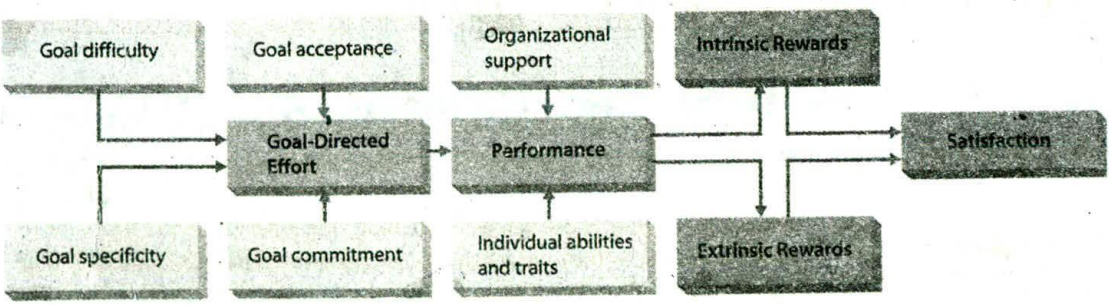
Goal Specificity *Goal specificity* is the clarity and precision of the goal. A goal of "increasing productivity" is not very specific; a goal of "increasing productivity by 3 percent in the next six months" is quite specific. Some goals, such as those involving costs, output, profitability, and growth, are readily amenable to specificity. Other goals, however, such as improving employee job satisfaction, morale, company image and reputation, ethics, and socially responsible behavior, may be much harder to state in specific terms. Like difficulty, specificity has also been shown to be consistently related to performance. The study of timber truck drivers mentioned above, for example, also examined goal specificity. The initial loads the truck drivers were carrying were found to be 60 percent of the maximum weight each truck could haul. The managers set a new goal for drivers of 94 percent, which the drivers were soon able to reach. Thus, the goal was both specific and difficult.

Because the theory attracted so much widespread interest and research support from researchers and managers alike, an expanded model of the goal-setting process was eventually proposed. The expanded model, shown in Figure 16.6, attempts to capture more fully the complexities of goal setting in organizations.

Figure 16.6

The Expanded Goal-Setting Theory of Motivation

One of the most important emerging theories of motivation is goal-setting theory. This theory suggests that goal difficulty, specificity, acceptance, and commitment combine to determine an individual's goal-directed effort. This effort, when complemented by appropriate organizational support and individual abilities and traits, results in performance. Finally, performance is seen as leading to intrinsic and extrinsic rewards that, in turn, result in employee satisfaction.



Source: Reprinted, from *Organizational Dynamics*, Autumn 1979, Gary P. Latham and Edwin A. Locke, "A Motivational Technique That Works," p. 79, copyright © 1979 with permission from Elsevier Science.

The expanded theory argues that goal-directed effort is a function of four goal attributes: difficulty and specificity, as already discussed, and acceptance and commitment. *Goal acceptance* is the extent to which a person accepts a goal as his or her own. *Goal commitment* is the extent to which she or he is personally interested in reaching the goal. The manager who vows to take whatever steps are necessary to cut costs by 10 percent has made a commitment to achieve the goal. Factors that can foster goal acceptance and commitment include participating in the goal-setting process, making goals challenging but realistic, and believing that goal achievement will lead to valued rewards.

The interaction of goal-directed effort, organizational support, and individual abilities and traits determine actual performance. Organizational support is whatever the organization does to help or hinder performance. Positive support might mean making available adequate personnel and a sufficient supply of raw materials; negative support might mean failing to fix damaged equipment. Individual abilities and traits are the skills and other personal characteristics necessary for doing a job. As a result of performance, a person receives various intrinsic and extrinsic rewards, which in turn influence satisfaction. Note that the latter stages of this model are quite similar to the Porter and Lawler expectancy model discussed earlier.

MANAGEMENT IMPLICATIONS Expectancy theory can be useful for managers who are trying to improve the motivation of their subordinates. A series of steps can be followed to implement the basic ideas of the theory. First, figure out the outcomes each employee is likely to want. Second, decide what kinds and levels of performance are needed to meet organizational goals. Then make sure that the desired levels of performance are attainable. Also make sure that desired outcomes and desired performance are linked. Next, analyze the complete situation for conflicting expectancies, and ensure that the rewards are large enough. Finally, make sure the total system is equitable (fair to all). The single most important idea for managers to remember from equity theory is that if rewards are to motivate employees, they must be perceived as being equitable and fair. A second implication that managers need to consider is the nature of the "other" to whom the employee is comparing her- or himself. Goal-setting theory can be used to implement both expectancy and equity theory concepts.

■ Reinforcement Perspectives of Motivation

reinforcement theory Approach to motivation that explains the role of rewards as they cause behavior to change or remain the same over time

A third element of the motivational process addresses why some behaviors are maintained over time and why other behaviors change. As we have seen, content perspectives deal with needs, while process perspectives explain why people choose various behaviors to satisfy needs and how they evaluate the equity of the rewards they get for those behaviors. Reinforcement perspectives explain the role of those rewards as they cause behavior to change or remain the same over time. Specifically, **reinforcement theory** argues that behavior that results in rewarding consequences is likely to be repeated, whereas behavior that results in punishing consequences is less likely to be repeated.[21]

Kinds of Reinforcement in Organizations

There are four basic kinds of reinforcement that can result from behavior—positive reinforcement, avoidance, punishment, and extinction.[22] These four concepts are summarized in Table 16.1. Two kinds of reinforcement strengthen or maintain behavior, whereas the other two weaken or decrease behavior.

Positive reinforcement, a method of strengthening behavior, is a reward or a positive outcome after a desired behavior is performed. When a manager observes an employee doing an especially good job and offers praise, the praise serves as a positive way to reinforce the behavior of good work. Other positive reinforcers in organizations include pay raises, promotions, and awards. Employees who work at General Electric's customer service center receive clothing, sporting goods, and even trips to Disney World as rewards for outstanding performance. The other method of strengthening desired behavior is through **avoidance**. An employee may come to work on time to avoid a reprimand. In this instance, the employee is motivated to perform the behavior of punctuality to avoid an unpleasant consequence that is likely to follow tardiness.

Punishment is used by some managers to weaken undesired behaviors. When an employee is loafing, coming to work late, doing poor work, or interfering with the work of others, the manager might resort to reprimands, discipline, or fines. The logic is that the unpleasant consequence will reduce the likelihood that the employee will choose that particular behavior again. Given the counterproductive side effects of punishment (such as resentment and hostility), it is often advisable to use the other kinds of reinforcement if at all possible. **Extinction** can also be used to weaken behavior, especially behavior that has previously been rewarded. When an employee tells an off-color joke and the boss laughs, the laughter reinforces the behavior and the employee may continue to tell off-color jokes. By

positive reinforcement A method of strengthening behavior with rewards or positive outcomes after a desired behavior is performed

avoidance Used to strengthen behavior by avoiding unpleasant consequences that would result if the behavior were not performed

punishment Used to weaken undesired behaviors by using negative outcomes or unpleasant consequences when the behavior is performed

extinction Used to weaken undesired behaviors by simply ignoring or not reinforcing that behavior

Table 16.1

Elements of Reinforcement Theory

A manager who wants the best chance of reinforcing a behavior would likely offer the employee a positive reinforcement after a variable number of behaviors (variable-ratio reinforcement). For example, the manager could praise the employee after the third credit card application was received. Additional praise might be offered after the next five applications, then again after the next three, the next seven, the next four, and so on.

Arrangement of the Reinforcement Contingencies	
1. **Positive reinforcement.** Strengthens behavior by providing a desirable consequence.	3. **Punishment.** Weakens behavior by providing an undesirable consequence.
2. **Avoidance.** Strengthens behavior by allowing escape from an undesirable consequence.	4. **Extinction.** Weakens behavior by not providing a desirable consequence.
Schedules for Applying Reinforcement	
1. **Fixed Interval.** Reinforcement applied at fixed time intervals, regardless of behavior.	3. **Fixed Ratio.** Reinforcement applied after a fixed number of behaviors, regardless of time.
2. **Variable interval.** Reinforcement applied at variable time intervals.	4. **Variable ratio.** Reinforcement applied after a variable number of behaviors.

simply ignoring this behavior and not reinforcing it, the boss can cause the behavior to subside and eventually become "extinct."

Providing Reinforcement in Organizations

Not only is the kind of reinforcement important, but so is when or how often it occurs. Various strategies are possible for providing reinforcement. These strategies are also listed in Table 16.1. The **fixed-interval schedule** provides reinforcement at fixed intervals of time, regardless of behavior. A good example of this schedule is the weekly or monthly paycheck. This method provides the least incentive for good work because employees know they will be paid regularly regardless of their effort. A **variable-interval schedule** also uses time as the basis for reinforcement, but the time interval varies from one reinforcement to the next. This schedule is appropriate for praise or other rewards based on visits or inspections. When employees do not know when the boss will drop by, they tend to maintain a reasonably high level of effort all the time.

fixed-interval schedules Provide reinforcement at fixed intervals of time, such as regular weekly pay checks

variable-interval schedules Provide reinforcement at varying intervals of time, such as occasional visits by the supervisor

A **fixed-ratio schedule** gives reinforcement after a fixed number of behaviors, regardless of the time that elapses between behaviors. This kind of reinforcement results in an even higher level of effort. For example, when Sears is recruiting new credit-card customers, salespersons get a small bonus for every fifth application returned from their department. Under this arrangement, motivation will be high because each application gets the person closer to the next bonus. The **variable-ratio schedule**, the most powerful schedule in terms of maintaining desired behaviors, varies the number of behaviors needed for each reinforcement. A supervisor who praises an employee for her second order, the seventh order after that, the ninth after that, then the fifth, and then the third is using a variable-ratio schedule. The employee is motivated to increase the frequency of the desired behavior because each performance increases the probability of receiving a reward. Of course, a variable-ratio schedule is difficult (if not impossible) to use for formal rewards such as pay because it would be too complicated to keep track of who was rewarded when.

fixed-ratio schedules Provide reinforcement after a fixed number of behaviors, regardless of the time that elapses between behaviors, such as a bonus for every fifth sale

variable-ratio schedules Provide reinforcement after varying numbers of behaviors are performed, such as the use of compliments by a supervisor on an irregular basis

Managers wanting to use reinforcement theory explicitly to motivate their employees generally do so with a technique called **behavior modification**, or **OB Mod**.[23] An OB Mod program starts by specifying behaviors to be increased (such as producing more units) or decreased (such as coming to work late). These target behaviors are then tied to specific forms of reinforcement. Although many organizations (such as Procter & Gamble and Ford) have used OB Mod, the best-known application was at Emery Air Freight. Management felt that the containers used to consolidate small shipments into fewer, larger shipments were not being packed efficiently. Through a system of self-monitored feedback and rewards, Emery increased container usage from 45 percent to 95 percent and saved over $3 million during the first three years of the program.[24]

behavior modification or **OB Mod** Method for applying the basic elements of reinforcement theory in an organizational setting

MANAGEMENT IMPLICATIONS Managers should be familiar with the role of reinforcement in motivation. Specifically, they should understand how various forms of reinforcement affect behavior and the different schedules that can be used to provide reinforcement.

■ Popular Motivational Strategies

While these theories provide a solid explanation for motivation, managers must use various techniques and strategies to apply them. Among the most popular motivational strategies today are empowerment and participation and alternative forms of work arrangements.

Empowerment and Participation

Empowerment and participation represent important methods that managers can use to enhance employee motivation. **Empowerment** is the process of enabling workers to set their own work goals, make decisions, and solve problems within their sphere of responsibility and authority. **Participation** is the process of giving employees a voice in making decisions about their own work. Thus, empowerment is a somewhat broader concept that promotes participation in a wide variety of areas, including but not limited to work itself, work context, and work environment.[25]

empowerment The process of enabling workers to set their own work goals, make decisions, and solve problems within their sphere of responsibility and authority

participation The process of giving employees a voice in making decisions about their own work

The role of participation and empowerment in motivation can be expressed in terms of both the content perspectives and the expectancy theory. Employees who participate in decision making may be more committed to executing decisions properly. Furthermore, the successful process of making a decision, executing it, and then seeing the positive consequences can help satisfy one's need for achievement, provide recognition and responsibility, and enhance self-esteem. Simply being asked to participate in organizational decision making may also enhance an employee's self-esteem. In addition, participation should help clarify expectancies; that is, by participating in decision making, employees may better understand the link between their performance and the rewards they want most.

Areas of Participation At one level, employees can participate in addressing questions and making decisions about their own jobs. Instead of just telling them how to do their jobs, for example, managers can ask employees to make their own decisions about how to do them. Based on their own expertise and experience with their tasks, workers might be able to improve their own productivity. In many situations, they might also be well qualified to make decisions about what materials to use, what tools to use, and so forth.

It might also be helpful to let workers make decisions about administrative matters, such as work schedules. If jobs are relatively independent of one another, employees might decide when to change shifts, take breaks, go to lunch, and so forth. A work group or team might also be able to schedule vacations and days off for all its members. Furthermore, employees are getting more opportunities to participate in broader issues of product quality. Such participation has become a hallmark of successful Japanese and other international firms, and many U.S. companies have followed suit.

Techniques and Issues in Empowerment In recent years many organizations have actively sought ways to extend participation beyond the traditional areas. Simple techniques such as suggestion boxes and question-and-answer meetings allow a certain degree of participation, for example. The basic motive has been to capitalize to a larger extent on the assets and capabilities inherent in all employees. Thus, many managers today prefer the term *empowerment* to *participation* because of its more comprehensive character.

One method used to empower workers is the use of work teams. Such teams are collections of employees empowered to plan, organize, direct, and control their own work. Rather than being a traditional "boss," their supervisor plays more the role of a coach. The other method for empowerment is to change their overall method of organizing. The basic pattern is for an organization to eliminate layers from its hierarchy, thereby becoming much more decentralized. Power, responsibility, and authority are delegated as far down the organization as possible, placing the control over work squarely in the hands of those who actually do it.[26]

Regardless of the specific technique or method used, empowerment will enhance organizational effectiveness only if certain conditions exist. First of all, the organization must be sincere in its efforts to spread power and autonomy to lower levels of the organization. Token efforts to promote participation in only a few areas are not likely to succeed. Second, the organization must be committed to maintaining participation and empowerment. Workers will be resentful if they are given more control, only to later have it reduced or taken away altogether. Third, the organization must be systematic and patient in its efforts to empower workers. Turning over too much control too quickly can spell disaster. And finally, the organization must be prepared to increase its commitment to training. Employees being given more freedom in how they work will quite likely need additional training to help them exercise that freedom most effectively.[27]

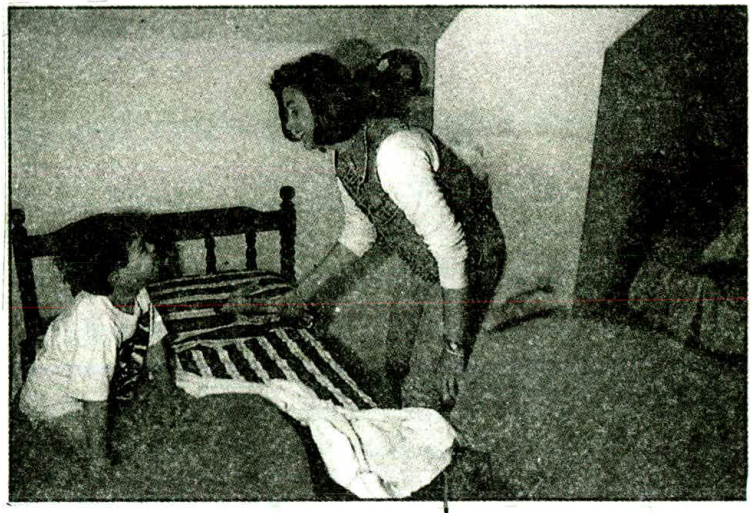
New Forms of Working Arrangements

Many organizations today are also experimenting with several alternative work arrangements. These alternative arrangements are generally intended to enhance employee motivation and performance by providing them with greater flexibility in how and when they work. Among the more popular alternative work arrangements are variable work schedules, flexible work schedules, job sharing, and telecommuting.[28]

Variable Work Schedules While there are many exceptions, of course, the traditional work schedule starts at 8:00 or 9:00 in the morning and ends at 5:00 in the evening, five days a week. (Of course, many managers work many additional hours outside these times.) Unfortunately, this schedule makes it difficult to attend to routine personal business—going to the bank, seeing a doctor or a dentist for a routine checkup, attending a parent-teacher conference, getting an automobile serviced, and so forth. At a surface level, then, employees locked into this sort of an arrangement may find it necessary to take a sick or vacation day to handle these activities. At a more unconscious level, some people may also feel so powerless

and constrained by their job schedule as to grow resentful and frustrated.

To help counter these problems, some businesses have adopted a **compressed work schedule**, working a full forty-hour week in fewer than the traditional five days.[29] One approach involves working ten hours a day for four days, leaving an extra day off. Another alternative is for employees to work slightly less than ten hours a day but to complete the forty hours by lunchtime on Friday. And a few firms have tried allowing employees to work twelve hours a day for three days, followed by four days off. Organizations that have used these forms of compressed workweeks include John Hancock, BP Amoco, and Philip Morris. One problem with this schedule is that when employees put in too much time in a single day, they tend to get tired and perform at a lower level later in the day.



Flexible work schedules can be a powerful motivational strategy. Consider, for example, Tina Willford and her employer, First Tennessee Bank. The bank allows Willford to leave work early each day so that she can spend time with her young children. She makes up the time after her children are in bed. First Tennessee considers Willford to be a rising star and is interested in doing whatever it can to both motivate her and keep her satisfied.

A schedule that some organizations today are beginning to use is called a "nine-eighty" schedule. Under this arrangement, an employee works a traditional schedule one week and a compressed schedule the next, getting every other Friday off. That is, they work eighty hours (the equivalent of two weeks of full-time work) in nine days. By alternating the regular and compressed schedules across half its workforce, the organization can be fully staffed at all times while still giving employees two full days off each month. Shell Oil and Amoco Chemicals are two of the firms that currently use this schedule.

compressed work schedule Working a full forty-hour week in fewer than the traditional five days

Flexible Work Schedules Another promising alternative work arrangement is **flexible work schedules**, sometimes called **flextime**. Flextime gives employees more personal control over the times they work. The workday is broken down into two categories, flexible time and core time. All employees must be at their workstations during core time, but they can choose their own schedules during flexible time. Thus, one employee may choose to start work early in the morning and leave in midafternoon; another to start in the late morning and work until late afternoon; and still another to start early in the morning, take a long lunch break, and work until late afternoon. Organizations that have used the flexible work schedule method for arranging work include Hewlett-Packard, Compaq Computer, Microsoft, and Texas Instruments.

flexible work schedules or **flextime** Allowing employees to select, within broad parameters, the hours they work

Job Sharing Yet another potentially useful alternative work arrangement is job sharing. In **job sharing**, two part-time employees share one full-time job. One person may perform the job from 8:00 A.M. to noon and the other from 1:00 P.M. to 5:00 P.M. Job sharing may be desirable for people who want to work only part-time or

job sharing When two part-time employees share one full-time job

when job markets are tight. For its part, the organization can accommodate the preferences of a broader range of employees and may benefit from the talents of more people.

Telecommuting A relatively new approach to alternative work arrangements is **telecommuting**—allowing employees to spend part of their time working off-site, usually at home. By using e-mail, the Internet, and other forms of information technology, many employees can maintain close contact with their organization and get just as much work done at home as they can at the office. The increased power and sophistication of modern communication technology is making telecommuting easier and easier.

telecommuting Allowing employees to spend part of their time working off-site, usually at home, by using e-mail, the Internet, and other forms of information technology

MANAGEMENT IMPLICATIONS Managers need to be familiar with various motivation strategies and techniques that can be used to improve performance. Empowerment, participation, and various alternative work arrangements should each be understood by managers interested in enhancing the motivation of their subordinates.

■ Using Reward Systems to Motivate Performance

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"I think I should warn you that the flip side of our generous bonus-incentive program is capital punishment."

Organizations provide rewards and incentives that can serve as positive reinforcement to desired behavior. Similarly, most also have various forms of punishment that can be used to weaken or eliminate undesired behaviors. While not as extreme as the humorous example shown here, positive reinforcement and punishment that are clearly linked to desired and undesired behaviors, respectively, can play a major role in boosting employee performance and organizational effectiveness.

Aside from these types of motivational strategies, an organization's reward system is its most basic tool for managing employee motivation. An organizational **reward system** is the formal and informal mechanisms by which employee performance is defined, evaluated, and rewarded. *The World of Management* discusses how managers today can use the Internet to learn more about rewards that their peers are using around the world.

Effects of Organizational Rewards

Organizational rewards can affect attitudes, behaviors, and motivation. Thus, it is important for managers to understand and appreciate clearly their importance.[30]

Effect of Rewards on Attitudes Although employee attitudes such as satisfaction are not a major determinant of job performance, they are nonetheless important. They contribute to (or discourage) absenteeism and affect turnover, and they help establish the culture of the organization. We can draw four major generalizations about employee atti-

WORLD OF MANAGEMENT

SEARCHING OUT SALARIES AROUND THE WORLD

How can job-seekers, employees, and human resource professionals find the general salary range for a particular position in Harrisburg or Hong Kong? More and more salary information is migrating to the Internet, where it is available to anyone, anywhere in the world. With just a few keystrokes, employees and job candidates can read advice about negotiating salaries and see how pay packages in e-businesses compare with pay packages in traditional industries. Meanwhile, managers can log on and scroll through local, national, and international surveys of salaries in different fields.

Salary.com (http://www.salary.com), for example, presents news about salary trends, offers expert advice about pay and promotion, and allows users to look up salary ranges for job categories in dozens of U.S. metropolitan areas. Monster.com (http://www.monster.com) offers salary comparison data, negotiating tips, and other information on its various country-specific sites. Visitors to the U.K. Monster site (http://salary.monster.co.uk/salary.monster.co.uk) can click to see what a particular position typically pays (in euros, pounds, and other currencies) in different European countries.

Other sites display the results of salary surveys in specific functional areas. *Industry Week* (http://www.industryweek.com), for instance, regularly reports on national and international salary trends in manufacturing positions. Similarly, *Advertising Age* (http://www.adage.com) displays the results of its salary surveys among marketing and advertising specialists.

Easy Internet availability of salary data is helping job candidates negotiate better starting salaries. It's also helping employees support requests for raises at review time. On the company side, on-line salary data helps managers stay abreast of the latest salary trends for all business locations so they can offer competitive pay packages to attract and retain skilled employees. Now managers, applicants, and employees in nearly any country can support discussions about salary issues with objective, up-to-date information gleaned from on-line sources.

The information age is so real time, and [employees] keep one eye on where everyone is.

—Mike Caggiano, president of FutureNext*

Reference: Stephanie Armour, "Show Me the Money, More Workers Say," *USA Today*, June 6, 2000, p. 1B (*quote on p. 1B).

tudes and rewards.[31] First, employee satisfaction is influenced by how much is received and how much the individual thinks should be received. Second, employee satisfaction is affected by comparisons with what happens to others. Third, employees often misperceive the rewards of others. When an employee believes that someone else is making more money than that person really makes, the potential for dissatisfaction increases. Fourth, overall job satisfaction is affected by how satisfied employees are with both the extrinsic and the intrinsic rewards they derive from their jobs. Drawing from the content theories and expectancy theory, this conclusion suggests that several needs may cause behavior and that behavior may be channeled toward various goals.

reward system The formal and informal mechanisms by which employee performance is defined, evaluated, and rewarded

Effect of Rewards on Behaviors An organization's primary purpose in giving rewards is to influence employee behavior. Extrinsic rewards affect employee satisfaction, which, in turn, plays a major role in determining whether an employee

will remain on the job or seek a new job. Reward systems also influence patterns of attendance and absenteeism; if rewards are based on actual performance, employees tend to work harder to earn those rewards.

Effect of Rewards on Motivation Reward systems are clearly related to the expectancy theory of motivation. The effort-to-performance expectancy is strongly influenced by the performance appraisal that is often part of the reward system. An employee is likely to expend extra effort if he or she knows that performance will be measured, evaluated, and rewarded. The performance-to-outcome expectancy is affected by the extent to which the employee believes that performance will be followed by rewards. Finally, as expectancy theory predicts, each reward or potential reward has a somewhat different value for each individual. One person may want a promotion more than benefits; someone else may want just the opposite.

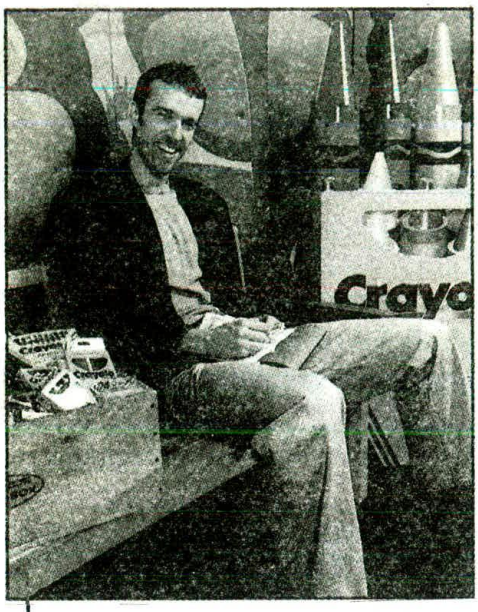
Designing Effective Reward Systems

What are the elements of an effective reward system? Experts agree that they have four major characteristics.[32] First, the reward system must meet the needs of the individual for basic necessities. Next, the rewards should compare favorably with those offered by other organizations. Unfavorable comparisons with people in other settings could result in feelings of inequity. Third, the distribution of rewards within the organization must be fair. And fourth, the reward system must recognize that different people have different needs and choose different paths to satisfy those needs. Both content theories and expectancy theory contribute to this conclusion. Insofar as possible, various rewards and different methods for achieving them should be made available to employees.

Popular Approaches to Rewarding Employees

Organizational reward systems have traditionally been one of two kinds: a fixed hourly or monthly rate or an incentive system. Fixed-rate systems are familiar to most people. Hourly employees are paid a specific wage (based on job demands, experience, or other factors) for each hour they work. Salaried employees receive a fixed sum of money on a weekly or monthly basis. Although some reductions may be made for absences, the salary amount is usually the same regardless of whether the individual works less than or more than a normal amount of time.[33]

From a motivational perspective, such rewards can be tied more directly to performance through merit pay raises. A **merit system** is one whereby people get different pay raises at the end of the year depending on their overall job performance.[34] When the organization's performance appraisal system is appropriately designed, merit pay is an effective system for maintaining long-term performance. Increasingly, however, organizations are experimenting with various kinds of in-



Managers sometimes resort to unusual rewards as a way to retain valuable employees. Mercer Management, a consulting firm, was having trouble holding on to its best consultants, who were beginning to feel a bit restless. Mercer found that some of them were leaving to help implement strategies they had developed for Mercer clients. So, the firm now allows its consultants to take a leave of absence of up to one year to work for other companies. Mercer consultant Gregg Dixon, for example, helped Binney & Smith develop a new strategy for its popular Crayola crayons. He then went to work for Binney & Smith to help implement the strategy. After he has finished, he will return to his old job at Mercer Management.

merit system A reward system whereby people get different pay raises at the end of the year depending on their overall job performance

centive systems. **Incentive systems** attempt to reward employees in proportion to what they do. A piece-rate pay plan is a good example of an incentive system. In a factory manufacturing luggage, for example, each worker may be paid fifty cents for each handle and set of locks installed on a piece of luggage. Hence, there is incentive for the employee to work hard: the more units produced, the higher the pay. Four increasingly popular incentive systems are profit sharing, gain sharing, lump-sum bonuses, and pay-for-knowledge.

incentive system A reward system whereby people get different pay amounts at each pay period in proportion to what they do

Profit sharing provides a varying annual bonus to employees based on corporate profits. This system unites workers and management toward the same goal—higher profits. Ford, Continental Airlines, USX, and Alcoa all have profit-sharing plans. Gain sharing is a group-based incentive system in which group members all get bonuses when predetermined performance levels are exceeded. The lump-sum bonus plan gives each employee a one-time cash bonus, rather than a base salary increase. Finally, pay-for-knowledge systems focus on paying the individual rather than the job.

MANAGEMENT IMPLICATIONS Managers need to know how rewards affect employee attitudes, behaviors, and motivation. In addition, they should know how to design reward systems and be familiar with new approaches to rewarding employees.

Summary of Key Points

Motivation is the set of forces that cause people to behave in certain ways. Motivation is an important consideration for managers because it, along with ability and environmental factors, determines individual performance. Thinking about motivation has evolved from the traditional view through the human relations approach to the human resource view.

Content perspectives on motivation are concerned with what factor or factors cause motivation. Popular content theories include Maslow's need hierarchy, the ERG theory, and Herzberg's two-factor theory. Other important needs are the needs for achievement, affiliation, and power.

Process perspectives on motivation deal with how motivation occurs. Expectancy theory suggests that people are motivated to perform if they believe that their effort will result in high performance, that this performance will lead to rewards, and that the positive aspects of the outcomes outweigh the negative aspects. Equity theory is based on the premise that people are motivated to achieve and maintain social equity. Attribution theory is a new process theory. Goal-setting theory assumes that behavior is a result of conscious goals and intentions.

The reinforcement perspective focuses on how motivation is maintained. Its basic assumption is that behavior resulting in positive consequences is likely to be repeated, whereas behavior resulting in negative consequences is less likely to be repeated. Reinforcement contingencies can be arranged in the form of positive reinforcement, avoidance, punishment, and extinction, and they can be provided on fixed-interval, variable-interval, fixed-ratio, or variable-ratio schedules.

Two of the most popular motivational strategies today are empowerment and participation

and alternative forms of work arrangements. Empowerment is the process of enabling workers to set their own work goals, make decisions, and solve problems within their sphere of responsibility and authority. Participation is the process of giving employees a voice in making decisions about their own work. Common alternative work arrangements include variable work schedules, flexible work schedules, job sharing, and telecommuting.

Organizational reward systems are the primary mechanisms managers have for managing motivation. Properly designed systems can improve attitudes, motivation, and behaviors. Effective reward systems must provide sufficient rewards on an equitable basis at the individual level. Contemporary reward systems include merit systems and various kinds of incentive systems.

Discussion Questions

Questions for Review

1. What were the basic historical perspectives on motivation?
2. Compare and contrast content, process, and reinforcement perspectives on motivation.
3. How are the emerging perspectives on motivation like the content, process, and reinforcement perspectives? How are they different?
4. What are the similarities and differences among the motivational strategies described in this chapter?

Questions for Analysis

5. Compare and contrast the different content theories. Can you think of any ways in which the theories are contradictory?
6. Expectancy theory seems to make a great deal of sense, but it is complicated. Some people argue that its complexity reduces its value to practicing managers. Do you agree or disagree?
7. Offer examples other than those from this chapter to illustrate positive reinforcement, avoidance, punishment, and extinction.

Questions for Application

8. Think about the worst job you have held. What approach to motivation was used in that organization? Now think about the best job you have held. What approach to motivation was used there? Can you base any conclusions on this limited information? If so, what are they?
9. Interview both managers and workers (or administrators and faculty) from a local organization. What views of or approaches to motivation seem to be in use in that organization?
10. Can you find any local organizations that have implemented or are implementing any of the motivational strategies discussed in this chapter? If so, interview a manager and a worker to obtain their views on the program.

BUILDING EFFECTIVE *interpersonal* SKILLS

Exercise Overview

Interpersonal skills—the ability to understand and motivate individuals and groups—are especially critical when managers attempt to deal with issues associated with equity and justice in the workplace. This exercise will provide you with insights into how these skills may be used.

Exercise Background

You are the manager of a group of professional employees in the electronics industry. One of your employees, David Brown, has asked to meet with you. You think you know what David wants to discuss, and you are unsure about how to proceed.

You hired David about ten years ago. During his time in your group, he has been a solid, but not outstanding, employee. His performance, for example, has been satisfactory in every respect, but seldom outstanding. As a result, he has consistently received average performance evaluations, pay increases, and so forth. Indeed, he actually makes somewhat less today than do a couple of people with less tenure in the group but with stronger performance records.

The company has just announced an opening for a team leader position in your group, and you know that David wants the job. He feels that he has earned the opportunity to have the job on the basis of his consistent efforts. Unfortunately, you see his situation a bit differently. You really want to appoint another individual, Becky Thomas, to the job. Becky has worked for the firm for only six years, but she is your top performer. You want to reward her performance and think that she will do an excellent job. On the other hand, you do not want to lose David because he is a solid member of the group.

Exercise Task

Using the information above, respond to the following:

1. Using equity theory as a framework, how are David and Becky likely to see the situation?
2. Outline a conversation with David in which you will convey your decision to him.
3. What advice might you offer Becky, in her new job, about interacting with David?
4. What other rewards might you offer David to keep him motivated?

BUILDING EFFECTIVE *decision-making* SKILLS

Exercise Overview

Decision-making skills include the manager's ability to recognize and define situations correctly and to select courses of action. This exercise will allow you to use expectancy theory as part of a hypothetical decision-making situation.

Exercise Background

Assume that you are about to graduate from college and have received three job offers, as summarized below:

1. Offer number one is an entry-level position in a large company. The salary offer is for $30,000, and you will begin work in a very attractive location. However, you also see promotion prospects as being relatively limited, and you know that you are likely to have to move frequently.
2. Offer number two is a position with a new start-up company. The salary offer is $25,000. You know that you will have to work especially long hours. If the company survives for a year, however, opportunities there are unlimited. You may need to move occasionally, but not for a few years.
3. Offer number three is a position in a family-owned business. The salary is $35,000, and

you start as a middle manager. You know that you can control your own transfers, but you also know that some people in the company may resent you because of your family ties.

Exercise Task

Using the three job offers as a framework, do the following:

1. Using expectancy theory as a framework, assess your own personal valence for each outcome in selecting a job.
2. Evaluate the three jobs in terms of their outcomes and associated valences.
3. Which job would you select from among these three?
4. What other outcomes will be important to you in selecting a job?

BUILDING EFFECTIVE *conceptual* SKILLS

Exercise Overview

Conceptual skills refer to the manager's ability to think in the abstract. This exercise will enable you to develop your conceptual skills by relating theory to reality in a personal way.

Exercise Background

First, you will develop a list of things you want from life. Then you will categorize them according to one of the theories in the chapter. Next, you will discuss your results with a small group of classmates.

Exercise Task

1. Prepare a list of approximately fifteen things you want from life. These can be very specific (such as a new car) or very general (such as a feeling of accomplishment in school). Try to include some things you want right now and others you want later in life. Next, choose the one motivational theory discussed in this chapter that best fits your set of needs. Classify each item from your "wish list" in terms of the need or needs it might satisfy.
2. Your instructor will then divide the class into groups of three. Spend a few minutes in the group discussing each person's list and its classification according to needs.
3. After the small-group discussions, your instructor will reconvene the entire class. Discussion should center on the extent to which each theory can serve as a useful framework for classifying individual needs. Students who found that their needs could be neatly categorized or those who found little correlation between their needs and the theories are especially encouraged to share their results.
4. As a result of this exercise, do you now place more or less trust in the need theories as viable management tools?
5. Could a manager use some form of this exercise in an organizational setting to enhance employee motivation?

CHAPTER CLOSING CASE

A Legend in Its Own Time

Living up to its name, Legend Holdings has become the most successful computer maker in China. A group of engineers from the Chinese Academy of Sciences founded Legend in 1984 as a computer trading firm. Originally, the company sold Hewlett-Packard printers and other computer-related products and assembled PCs for a U.S. company. Over time, however, the company evolved into a manufacturer. First, the company developed a new computer system to accommodate Chinese characters; then it was ready to design and produce PCs specifically for the Chinese market.

Thanks to a combination of low labor costs, local sources for parts, a just-in-time manufacturing system, and economies of scale, Legend eventually reduced its production costs and passed the savings on to customers in the form of lower prices. With PCs priced as much as 25 percent below competing models, Legend saw its sales soar in the late 1990s. The sales momentum has made Legend the top-selling PC maker in China, easily surpassing global computer powerhouses such as IBM.

Sales to government agencies and businesses account for a large chunk of Legend's revenues. For example, journalists in the Beijing bureau of Reuters use Legend computers to file their news reports. But the company has also built a solid regional reputation selling and servicing PCs for home use. One of its most popular consumer products is the Conet, a snazzy PC featuring one-button access to the Internet. Another promising product, developed in conjunction with Microsoft, is a set-top device that plugs into a television to enable viewers to browse the Internet.

Behind the scenes, Legend's successful performance has been driven by the vision of chairman Liu Chuanzhi and the hard work of a motivated group of managers and employees. Legend is a publicly traded company listed on the Hong Kong stock exchange, and its reward structure is unusual for China. More than two dozen of the founding employees, including the chairman, have been given shares in the company; their combined stakes are worth more than $800 million. The company offers generous pay packages and grants stock options. Small wonder that managers act like owners when making decisions. The availability of options also helps Legend recruit and retain skilled employees, an especially difficult challenge now that China's economy is expanding at a rapid pace and foreign firms entering the market want to hire local talent.

However, financial rewards are not the chairman's only motivation. Consider Liu's reaction to a comment made by a local computer executive in Taiwan. Showing off a new palm-size PC, the executive told Liu that Legend couldn't create such a product without outside help. The chairman quickly rose to the challenge. On his return to Beijing, the chairman rallied a team of Legend engineers to work together toward the goal of developing a world-class palm-size PC. Within four months, Legend launched the Tianji as the first palm-size PC made by a Chinese manufacturer for the Chinese market—and its less-expensive, full-featured version became an instant hit. Sales were so strong that Legend formed an alliance with a foreign company to adapt the Tianji for the European market.

With demand for PCs swelling throughout China and Asia, Legend wants to expand into other computer-related products and other markets. It is already acquiring computer firms and developing new Internet access products for home and business use. This expansion is part of Liu's plan to reach an aggressive goal of $10 billion in annual sales by 2005. The chairman believes his managers and employees have the attitudes, behaviors, and motivation to make that goal a reality.

Case Questions

1. Which theory or theories seem to explain Liu Chuanzhi's motivation?
2. Under equity theory, how would you expect employees at other Chinese computer companies to react to Legend's stock options and pay packages?
3. How is Liu Chuanzhi applying goal-setting theory at Legend?

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Managing Leadership and Influence Processes

OPENING INCIDENT

In many ways Jacques Nasser may be the quintessential business leader for the twenty-first century. He was born in Lebanon but grew up in Australia. He joined Ford's Australian operation more than thirty years ago as a financial analyst. As Nasser worked his way up the company's hierarchy, he subsequently held increasingly important jobs, first in Latin America and then in Europe. He moved to the United States after being promoted to the key position of president of Ford Automotive Operations. Finally, in 1999 he became Ford's CEO.

Almost from the day he arrived in Detroit, Nasser began to shake things up. For decades the firm had been a stable, hierarchical company that efficiently made cars and, in recent years at least, earned solid profits. But Nasser had a new vision for Ford, one that will, in his opinion, take the company to the very forefront of its industry and transform it into a nimble, flexible organization better attuned to the international automobile industry he sees emerging.

And indeed, the forefront of the industry is exactly where Nasser has set his sights, even though he downplays that goal publicly. After all, General Motors has held the crown as the world's largest automobile company for decades. But while GM's global market share has slowly declined to around 16 percent, Ford's has surged to about 13 percent—clearly putting Ford within striking distance. To help him achieve his ambitions, Nasser has also brought in dozens of senior managers from outside the staid Ford ranks.

Nasser has also made several major changes in Ford's organization structure. Most significantly, he decided to group newly acquired Volvo with Jaguar and Aston Martin, English properties Ford had acquired years earlier, with its own Lincoln division, creating a new unit called the Premier Automotive Group. This new unit is headed by Wolfgang Reitzle, a recruit from BMW, and headquartered in Europe. Nasser also overhauled the structure of Ford's new car design operation and mandated that all senior executives move into the same building to promote interaction and stimulate new ways of thinking.

Nasser's own approach to running Ford is also a bit unique. He is seldom in his office; instead he visits Ford facilities around the world. Indeed, he keeps a calendar marked with national holidays from around the world to coordinate his travel schedule better. For example, he recently took advantage of the

"You've got to earn [a promotion]. The days of entitlement at Ford Motor Co. are gone forever."

—Jacques Nasser, CEO of Ford Motor Company

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

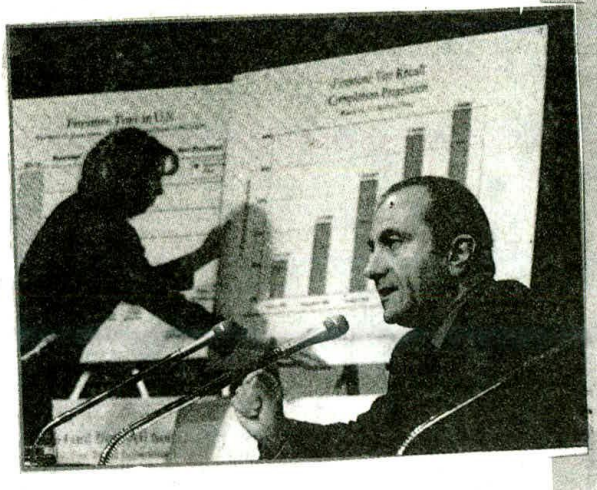
- **Describe the nature of leadership and distinguish leadership from management.**
- **Discuss and evaluate the trait approach to leadership.**
- **Discuss and evaluate models of leadership, focusing on behaviors.**
- **Identify and describe the major situational approaches to leadership.**
- **Identify and describe three related perspectives on leadership.**
- **Discuss political behavior in organizations and how it can be managed.**

CHAPTER OUTLINE

- **The Nature of Leadership**
  - The Meaning of Leadership
  - Leadership Versus Management
  - Power and Leadership
- **The Search for Leadership Traits**
- **Leadership Behaviors**
  - Michigan Studies
  - Ohio State Studies
  - Managerial Grid
- **Situational Approaches to Leadership**
  - LPC Theory
  - Path-Goal Theory
  - Vroom's Decision Tree Approach
  - The Leader-Member Exchange Approach
- **Related Perspectives on Leadership**
  - Substitutes for Leadership
  - Charismatic Leadership
  - Transformational Leadership
- **Political Behavior in Organizations**
  - Common Political Behaviors
  - Managing Political Behavior

Thanksgiving lull in the United States to visit Australia. Nasser also communicates with Ford employees regularly. For instance, every week he writes a chatty e-mail updating employees on what's going on, sending it to more than 89,000 employee mailboxes around the world. He is also stressing the importance of motivation and hard work. For example, he has tied executive compensation to stock performance for the first time since Ford went public in the 1950s. And a recurring message he takes to all Ford employees—who own about 20 percent of the firm's stock—is how their individual contributions add to shareholder value.

Finally, Nasser also won rave reviews for his handling of the recent crisis involving the recall of thousands of sets of Firestone tires on Ford Explorers. Nasser assumed personal responsibility for helping address the problem and routinely met with representatives from the media, the government, and Firestone to ensure that consumers received new tires as quickly as possible. He also did an excellent job of simultaneously acknowledging Ford's role in solving the problem while protecting the corporate reputation by keeping it framed as an issue with Firestone's tires.[1]



Jacques Nasser has a relatively rare combination of skills that sets him apart from many others: he is both an astute leader and a fine manager, and he recognizes many of the challenges necessary to play both roles. He knows when to make tough decisions, when to lead and encourage his employees, and when to stand back and let them do their jobs. And thus far, Ford is reaping big payoffs from his efforts.

This chapter examines people like Jacques Nasser more carefully by focusing on leadership and its role in management. We characterize the nature of leadership and trace the three major approaches to studying leadership—traits, behaviors, and situations. After examining other perspectives on leadership, we conclude by describing another approach to influencing others—political behavior in organizations.

■ The Natureof Leadership

In Chapter 16, we described various models and perspectives on employee motivation. From the manager's standpoint, trying to motivate people is an attempt to influence their behavior. In many ways, leadership too is an attempt to influence the behavior of others. In this section, we first define leadership, then differentiate it from management, and conclude by relating it to power.

The Meaning of Leadership

leadership As a process, the use of noncoercive influence to shape the group's or organization's goals, motivate behavior toward the achievement of those goals, and help define group or organization culture; as a property, the set of characteristics attributed to individuals who are perceived to be leaders

leaders People who can influence the behaviors of others without having to rely on force; those accepted by others as leaders

Leadership is both a process and a property.[2] As a process—focusing on what leaders actually do—leadership is the use of noncoercive influence to shape the group's or organization's goals, motivate behavior toward the achievement of those goals, and help define group or organization culture.[3] As a property, leadership is the set of characteristics attributed to individuals who are perceived to be leaders. Thus, **leaders** are people who can influence the behaviors of others without having to rely on force; leaders are people whom others accept as leaders.

Leadership Versus Management

From these definitions, it should be clear that leadership and management are related, but they are not the same. A person can be a manager, a leader, both, or neither.[4] Some of the basic distinctions between the two are summarized in Table 17.1. At the left side of the table are four elements that differentiate leadership from management. The two columns show how each element differs when considered from a management and a leadership point of view. For example, when executing plans, managers focus on monitoring results, comparing them with goals, and correcting deviations. In contrast, the leader focuses on energizing people to overcome bureaucratic hurdles to help reach goals. Thus, when Jacques Nasser

Table 17.1

Distinctions Between Management and Leadership

Management and leadership are related, but distinct, constructs. Managers and leaders differ in how they create an agenda, develop a rationale for achieving the agenda, and execute plans, and in the types of outcomes they achieve.

Activity	Management	Leadership
Creating an agenda	**Planning and budgeting.** Establishing detailed steps and timetables for achieving needed results; allocating the resources necessary to make those needed results happen.	**Establishing direction.** Developing a vision of the future, often the distant future, and strategies for producing the changes needed to achieve that vision.
Developing a human network for achieving the agenda	**Organizing and staffing.** Establishing some structure for accomplishing plan requirements, staffing that structure with individuals, delegating responsibility and authority for carrying out the plan, providing policies and procedures to help guide people, and creating methods or systems to monitor implementation.	**Aligning people.** Communicating the direction by words and deeds to everyone whose cooperation may be needed to influence the creation of teams and coalitions that understand the vision and strategies and accept their validity.
Executing plans	**Controlling and problem solving.** Monitoring results versus planning in some detail, identifying deviations, and then planning and organizing to solve these problems.	**Motivating and inspiring.** Energizing people to overcome major political, bureaucratic, and resource barriers by satisfying very basic, but often unfulfilled, human needs.
Outcomes	Produces a degree of predictability and order and has the potential to produce consistently major results expected by various stakeholders (for example, for customers, always being on time; for stockholders, being on budget).	Produces change, often to a dramatic degree, and has the potential to produce extremely useful change (for example, new products that customers want, new approaches to labor relations that help make a firm more competitive).

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monitors the performance of his employees, he is playing the role of manager. But when he inspires them to work harder at achieving their goals, he is a leader.

Organizations need both management and leadership if they are to be effective. Leadership is necessary to create change, and management is necessary to achieve orderly results. Management in conjunction with leadership can produce orderly change, and leadership in conjunction with management can keep the organization properly aligned with its environment. *Management Infotech* describes Selina Lo, an individual who is clearly both a manager and a leader.

Power and Leadership

To understand leadership fully, it is necessary to understand power. **Power** is the ability to affect the behavior of others. One can have power without actually using it. For example, a football coach has the power to bench a player who is not performing up to par. The coach seldom has to use this power because players recognize that the power exists and work hard to keep their starting positions. In organizational settings, there are usually five kinds of power: legitimate, reward, coercive, referent, and expert.[5]

power The ability to affect the behavior of others

MANAGEMENT INFOTECH

HARD-DRIVING MANAGEMENT IN THE HIGH-TECH ARENA

Managers in high-tech industries have to race the clock as well as the competition, as Selina Y. Lo well knows. Lo is the vice president of product management and marketing for Alteon WebSystems, a young, fast-growing company that makes sophisticated networking systems for web-based businesses such as Ticketmaster Online and Yahoo! Competing against well-established, fleet-footed rivals such as Cisco Systems, Lo uses her considerable power to speed product innovation, spur higher performance, and meet customers' needs.

One reason the CEO of Alteon hired Lo was for her keen sense of cutting-edge technology and her understanding of customer needs, developed during a rising-star background in a series of well-regarded information technology firms. She started with Hewlett-Packard after college, moved to Network Equipment Technologies, and then co-founded Centillion Networks, where she was part of the team that invented an innovative new data-switching device. Small wonder that employees and customers alike respect Lo's judgment and pay close attention when she talks about products and features.

Lo supervises product development for Alteon, a critical function in an industry where a product's life can be measured in months. She spends most of her day in the field, sniffing out customer problems. When she comes back to the office to hammer out design changes with development engineers, her aggressive management style—sometimes pounding the table, sometimes raising her voice—makes it hard for engineers to say no. Although Lo is known as a tough manager, she's also known for her habit of giving away trips and other valuable rewards to recognize performance. After fifteen years in the networking industry, Lo is anything but shy about using her hard-driving approach to overpower the competition and push Alteon to the top of a crowded but lucrative market.

I've left a few dead bodies behind me.

*—Selina Y. Lo, vice president of marketing for Alteon WebSystems**

Reference: Andy Reinhardt, "'I've Left a Few Dead Bodies,'" *Business Week*, January 31, 2000, pp. 69–70 (*quote on p. 69).

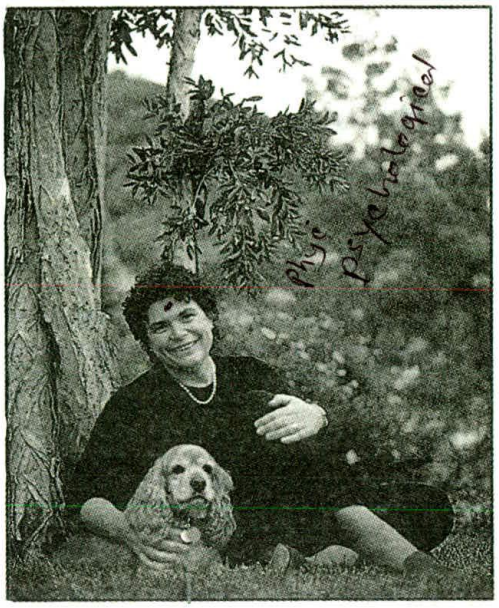
legitimate power Power granted through the organizational hierarchy; it is the power accorded people occupying particular positions as defined by the organization

Legitimate Power **Legitimate power** is power granted through the organizational hierarchy; it is the power accorded people occupying particular positions as defined by the organization. A manager can assign tasks to a subordinate, and a subordinate who refuses to do them can be reprimanded or even fired. Such outcomes stem from the manager's legitimate power as defined and vested in her or him by the organization. Legitimate power, then, is authority. All managers have legitimate power over their subordinates. The mere possession of legitimate power, however, does not by itself make someone a leader. Some subordinates follow only orders that are strictly within the letter of organizational rules and policies. If asked to do something not in their job description, they refuse or do a poor job. The manager of such employees is exercising authority but not leadership.

reward power The power to give or withhold rewards, such as salary increases, bonuses, promotion recommendations, praise, recognition, and interesting job assignments

Reward Power **Reward power** is the power to give or withhold rewards. Rewards that a manager may control include salary increases, bonuses, promotion recommendations, praise, recognition, and interesting job assignments. In gen-

eral, the greater the number of rewards a manager controls and the more important the rewards are to subordinates, the greater is the manager's reward power. If the subordinate sees as valuable only the formal organizational rewards provided by the manager, then he or she is not a leader. If the subordinate also wants and appreciates the manager's informal rewards like praise, gratitude, and recognition, however, then the manager is also exercising leadership.



Expert power is often an important ingredient in the success of many people. Dr. Susan Love, for example, is a world-renowned expert on women's health in general and breast cancer in particular. Her work is widely recognized and cited, giving her the power to influence public opinion, government health policy, and the daily health habits of millions of women.

Coercive Power **Coercive power** is the power to force compliance by means of psychological, emotional, or physical threat. In the past physical coercion in organizations was relatively common. In most organizations today, however, coercion is limited to verbal and written reprimands, disciplinary layoffs, fines, demotion, and termination. Some managers occasionally go so far as to use verbal abuse, humiliation, and psychological coercion in an attempt to manipulate subordinates. (Of course, most people would agree that these managerial behaviors are not appropriate.) James Dutt, former CEO of Beatrice Company, once told a subordinate that if his wife and family got in the way of his working a twenty-four-hour day seven days a week, he should get rid of them.[6] The more punitive the elements under a manager's control and the more important they are to subordinates, the more coercive power the manager possesses. On the other hand, the more a manager uses coercive power, the more likely he is to provoke resentment and hostility and the less likely he is to be seen as a leader.[7]

Referent Power Compared with legitimate, reward, and coercive power, which are relatively concrete and grounded in objective facets of organizational life, **referent power** is abstract. It is based on identification, imitation, loyalty, or charisma. Followers may react favorably because they identify in some way with a leader, who may be like them in personality, background, or attitudes. In other situations, followers might choose to imitate a leader with referent power by wearing the same kinds of clothes, working the same hours, or espousing the same management philosophy. Referent power may also take the form of charisma, an intangible attribute of the leader that inspires loyalty and enthusiasm. Thus, a manager might have referent power, but it is more likely to be associated with leadership.

Expert Power **Expert power** is derived from information or expertise. A manager who knows how to interact with an eccentric but important customer, a scientist who is capable of achieving an important technical breakthrough that no other company has dreamed of, and a secretary who knows how to unravel bureaucratic red tape all have expert power over anyone who needs that information. The more important the information and the fewer the people who have access to it, the greater is the degree of expert power possessed by any one individual. In general, people who are both leaders and managers tend to have a lot of expert power.

coercive power The power to force compliance by means of psychological, emotional, or physical threat

referent power The personal power that accrues to someone based on identification, imitation, loyalty, or charisma

expert power The personal power that accrues to someone based on the information or expertise that they possess

Using Power How does a manager or leader use power? Several methods have been identified.[8] One method is the *legitimate request*, which is based on legitimate power. The manager requests that the subordinate comply because the subordinate recognizes that the organization has given the manager the right to make the request. Most day-to-day interactions between manager and subordinate are of this type. Another use of power is *instrumental compliance*, which is based on the reinforcement theory of motivation. In this form of exchange, a subordinate complies to get the reward the manager controls. Suppose that a manager asks a subordinate to do something outside the range of the subordinate's normal duties, such as working extra hours on the weekend, terminating a relationship with a long-standing buyer, or delivering bad news. The subordinate complies and, as a direct result, reaps praise and a bonus from the manager. The next time the subordinate is asked to perform a similar activity, that subordinate will recognize that compliance will be instrumental in her getting more rewards. Hence, the basis of instrumental compliance is clarifying important performance-reward contingencies.

A manager is using *coercion* when she suggests or implies that the subordinate will be punished, fired, or reprimanded if he does not do something. *Rational persuasion* occurs when the manager can convince the subordinate that compliance is in the subordinate's best interest. For example, a manager might argue that the subordinate should accept a transfer because it would be good for the subordinate's career. In some ways, rational persuasion is like reward power except that the manager does not really control the reward.

Still another way a manager can use power is through *personal identification.* A manager who recognizes that she has referent power over a subordinate can shape the behavior of that subordinate by engaging in desired behaviors: the manager consciously becomes a model for the subordinate and exploits personal identification. Sometimes a manager can induce a subordinate to do something consistent with a set of higher ideals or values through *inspirational appeal.* For example, a plea for loyalty represents an inspirational appeal. Referent power plays a role in determining the extent to which an inspirational appeal is successful because its effectiveness depends at least in part on the persuasive abilities of the leader.

A dubious method of using power is through *information distortion.* The manager withholds or distorts information to influence subordinates' behavior. For example, if a manager has agreed to allow everyone to participate in choosing a new group member but subsequently finds one individual whom she really prefers, she might withhold some of the credentials of other qualified applicants so that the desired member is selected. This use of power is dangerous. It may be unethical, and if subordinates find out that the manager has deliberately misled them, they will lose their confidence and trust in that manager's leadership.[9]

MANAGEMENT IMPLICATIONS Managers need to recognize the distinctions between leadership as a process and as a property. They should also appreciate the differences between leadership and management. And finally, managers

need to know the most common bases of power and how to use those bases most effectively.

■ The Search for Leadership Traits

The first organized approach to studying leadership analyzed the personal, psychological, and physical traits of strong leaders. The trait approach assumed that some basic trait or set of traits differentiated leaders from nonleaders. If those traits could be defined, potential leaders could be identified. Researchers thought that leadership traits might include intelligence, assertiveness, above-average height, good vocabulary, attractiveness, self-confidence, and similar attributes.[10]

During the first several decades of this century, hundreds of studies were conducted in an attempt to identify important leadership traits. For the most part, the results of the studies were disappointing. For every set of leaders who possessed a common trait, a long list of exceptions was also found, and the list of suggested traits soon grew so long that it had little practical value. Alternative explanations usually existed even for relations between traits and leadership that initially appeared valid. For example, it was observed that many leaders have good communication skills and are assertive. Rather than those traits being the cause of leadership, however, successful leaders may begin to display those traits after they have achieved leadership positions.

Although most researchers gave up trying to identify traits as predictors of leadership ability, many people still explicitly or implicitly adopt a trait orientation.[11] For example, politicians are all too often elected on the basis of personal appearance, speaking ability, or an aura of self-confidence. In addition, traits like honesty and integrity may very well be fundamental leadership traits that serve an important purpose. *The World of Management* discusses leadership traits as they apply to the CEO of Goodyear.

MANAGEMENT IMPLICATIONS Managers need to understand the concept of leadership traits, but they should pay most attention to avoiding the pitfalls of relying on or making inferences about a person's leadership ability based on various traits.

■ Leadership Behaviors

Spurred on by their lack of success in identifying useful leadership traits, researchers soon began to investigate other variables, especially the behaviors or actions of leaders. The new hypothesis was that effective leaders somehow behaved differently than less-effective leaders. Thus, the goal was to develop a more complete understanding of leadership behaviors.

WORLD OF MANAGEMENT

GLOBAL VIEW FROM THE TOP

Good leaders must be agile, adaptable, and open to new opportunities—qualities that Sam Gibara developed through years of moving from country to country. Born in Egypt and raised in France, Gibara moved to Massachusetts to earn his MBA from Harvard and then returned to France as a management trainee with Goodyear Tire & Rubber. During his tenure with the Ohio-based tire company, he was moved through various management positions in Europe, Morocco, and Canada before settling in Akron, Ohio, as CEO.

Stanley Gault, the previous CEO, handpicked and groomed Gibara for the top slot precisely because of this varied background. Gault saw in Gibara more than a capable manager; he believed that Gibara's fluency in multiple languages and his experience living and working in diverse cultures provided a well-rounded background for presiding over a global enterprise.

In fact, Gibara's adaptability and understanding of global differences have proven quite valuable. For example, Goodyear had once tried and failed to buy Japan's Sumitomo Rubber Industries. Years later, when Gibara became CEO, he made another overture to Sumitomo, despite the advice of colleagues who were convinced the attempt would fail again. Instead of acting pushy and talking bluntly, Gibara took an entirely different approach, based on his personal knowledge of other cultures. He began by humbly apologizing for the earlier buyout attempt, then waited patiently for Sumitomo's managers to open the door to new discussions. After a long series of negotiation meetings, Sumitomo finally agreed to a global alliance that gave Goodyear control over the Japanese operations it wanted.

Under Gibara's leadership, management at Goodyear has become more diverse: foreign-born professionals have been hired to fill more than 25 percent of the company's open positions in the past few years. A more global perspective helps Gibara and his team effectively manage Goodyear's far-flung operations and customer base—yet Gibara is also direct and decisive, qualities typically exhibited by U.S. managers. At Goodyear, good leadership at the top taps the best characteristics of managers around the world.

Americans move around in the U.S. more than Germans do in Germany or French in France. And every time you move, it broadens you, it gives you new opportunities.

—Sam Gibara, CEO of Goodyear*

Reference: Timothy Aeppel, "American Way: From Egypt to Europe to Ohio, a CEO Finds a Place to Call Home," *Wall Street Journal*, December 22, 1999, pp. A1, A6 (*quote on p. A1).

Michigan Studies

job-centered leader behavior The behavior of leaders who pay close attention to an employee's job and work procedures involved with that job

employee-centered leader behavior The behavior of leaders who develop cohesive work groups and ensure employee satisfaction

Researchers at the University of Michigan, led by Rensis Likert, began studying leadership in the late 1940s.[12] Based on extensive interviews with both leaders (managers) and followers (subordinates), this research identified two basic forms of leader behavior: job centered and employee centered. Managers using **job-centered leader behavior** pay close attention to subordinates' work, explain work procedures, and are keenly interested in performance. Managers using **employee-centered leader behavior** are interested in developing a cohesive work group and ensuring that employees are satisfied with their jobs. Their primary concern is the welfare of subordinates.

The two styles of leader behavior were presumed to be at the ends of a single continuum. Although this assumption suggests that leaders may be extremely job-

centered, extremely employee-centered, or somewhere between, Likert studied only the two end styles for contrast. He argued that employee-centered leader behavior generally tended to be more effective. We should also note the similarities between Likert's leadership research and his Systems 1 through 4 organization design (discussed in Chapter 12). Job-centered leader behavior is consistent with the System 1 design (rigid and bureaucratic), whereas employee-centered leader behavior is consistent with the System 4 design (organic and flexible). When Likert advocates moving organizations from System 1 to System 4, he is also advocating a transition from job-centered to employee-centered leader behavior.



Two common leader behaviors are those that focus on the job and those that focus on people. Take Nobuyuki Idei, CEO of Sony, for example. Mr Idei is totally focused on insuring that Sony retains its preeminence among the world's consumer products giants. To help keep the firm on track, he is constantly setting new goals, developing new strategies, and pushing the firm into new markets. But at the same time, his colleagues report that he is a sensitive and caring leader who is always concerned for the well-being of others.

Ohio State Studies

At about the same time that Likert was beginning his leadership studies at the University of Michigan, a group of researchers at Ohio State also began studying leadership.[13] The extensive questionnaire surveys conducted during the Ohio State studies also suggested that there are two basic leader behaviors or styles: initiating-structure behavior and consideration behavior. When using **initiating-structure behavior,** the leader clearly defines the leader-subordinate role so that everyone knows what is expected, establishes formal lines of communication, and determines how tasks will be performed. Leaders using **consideration behavior** show concern for subordinates and attempt to establish a friendly and supportive climate. The behaviors identified at Ohio State are similar to those described at Michigan, but there are important differences. One major difference is that the Ohio State researchers did not interpret leader behavior as being one-dimensional: each behavior was assumed to be independent of the other. Presumably, then, a leader could exhibit varying levels of initiating structure and at the same time varying levels of consideration.

initiating-structure behavior The behavior of leaders who define the leader-subordinate role so that everyone knows what is expected, establish formal lines of communication, and determine how tasks will be performed

consideration behavior The behavior of leaders who show concern for subordinates and attempt to establish a friendly and supportive climate

At first, the Ohio State researchers thought that leaders who exhibit high levels of both behaviors would be more effective than other leaders. A study at International Harvester Co. (now Navistar International Corp.), however, suggested a more complicated pattern.[14] The researchers found that employees of supervisors who ranked high on initiating structure were high performers but expressed low levels of satisfaction and had a higher absentee rate. Conversely, employees of supervisors who ranked high on consideration had low performance ratings but high levels of satisfaction and few absences from work. Later research isolated other variables that make consistent prediction difficult and determined that situational influences also occurred. (This body of research is discussed in the section on situational approaches to leadership.)

Managerial Grid

Yet another behavioral approach to leadership is the Managerial Grid.[15] The Managerial Grid provides a means for evaluating leadership styles and then training managers to move toward an ideal style of behavior. The Managerial Grid is shown in Figure 17.1. The horizontal axis represents **concern for production** (similar to job-centered and initiating-structure behaviors), and the vertical axis represents **concern for people** (similar to employee-centered and consideration behavior). Note the five extremes of managerial behavior: the 1,1 manager (impoverished management), who exhibits minimal concern for both production and people; the 9,1 manager (authority-obedience), who is highly concerned about production but exhibits little concern for people; the 1,9 manager (country club management), who has the exact opposite concerns from the 9,1 manager; the 5,5 manager (organization management), who maintains adequate concern for both people and

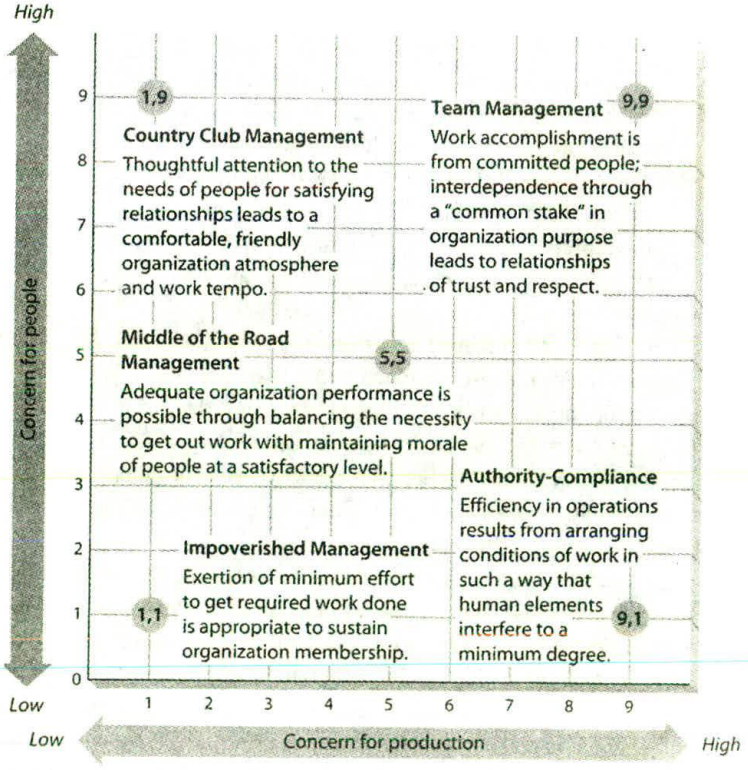
concern for production That part of the Managerial Grid that deals with the job and production aspects of leader behavior

concern for people That part of the Managerial Grid that deals with the people aspects of leader behavior

Figure 17.1

The Leadership Grid®

The Leadership Grid® is a method of evaluating leadership styles. The overall objective of an organization using the Grid® is to train its managers using OD techniques so that they are simultaneously more concerned for both people and production (9, 9 style on the Grid®).



Source: The Leadership Grid Figure for *Leadership Dilemmas — Grid Solutions* by Robert R. Blake and Anne Adams McCanse. (Formerly the Managerial Grid by Robert R. Blake and Jane S. Mouton.) Houston: Gulf Publishing Company, p. 29. Copyright © 1997 by Grid International, Inc. Reproduced by permission of the owners.

production; and the 9,9 manager (team management), who exhibits maximum concern for both people and production.

According to this approach, the ideal style of managerial behavior is 9,9. Thus, there is a six-phase program to assist managers in achieving this style of behavior. A. G. Edwards, Westinghouse, FAA, Equicor, and other companies have used the Managerial Grid with reasonable success. However, there is little published scientific evidence regarding its true effectiveness.

The leader-behavior theories have played an important role in the development of contemporary thinking about leadership. In particular, they urge us not to be preoccupied with what leaders are (the trait approach) but to concentrate on what leaders do (their behaviors). Unfortunately, these theories also make universal prescriptions about what constitutes effective leadership. When we are dealing with complex social systems composed of complex individuals, few if any relationships are consistently predictable, and certainly no formulas for success are infallible. Yet the behavior theorists tried to identify consistent relationships between leader behaviors and employee responses in the hope of finding a dependable prescription for effective leadership. As we might expect, they often failed. Other approaches to understanding leadership were therefore needed. The catalyst for these new approaches was the realization that, although interpersonal and task-oriented dimensions might be useful to describe the behavior of leaders, they were not useful for predicting or prescribing it. The next step in the evolution of leadership theory was the creation of situational models.

MANAGEMENT IMPLICATIONS Managers should appreciate the importance of leadership behaviors, as well as be familiar with the basic kinds of leadership behaviors most well understood. At the same time, however, managers should also recognize that universal or "one best way" models of leadership are of dubious value.

■ Situational Approaches to Leadership

Situational models assume that appropriate leader behavior varies from one situation to another. The goal of a situational theory, then, is to identify key situational factors and to specify how they interact to determine appropriate leader behavior. *Working with Diversity* discusses how Carly Fiorina uses a situational approach to leadership at Hewlett-Packard.

Before discussing the major situational theories, we should first discuss an important early model that laid the foundation for subsequent developments. In a 1958 study of the decision-making process, Robert Tannenbaum and Warren H. Schmidt proposed a continuum of leadership behavior. Their model is much like the original Michigan framework.[16] Besides purely job-centered behavior (or "boss-centered" behavior, as they termed it) and employee-centered ("subordinate-centered") behavior, however, they identified several intermediate behaviors that

WORKING WITH DIVERSITY

Blending Outsiders and Insiders to Reach Corporate Goals

Sometimes it takes an outsider like Carly Fiorina to bring out the best in an organization. Plucked from a division presidency at Lucent Technologies, Fiorina was the first outsider to serve as CEO of Hewlett-Packard. The company, based in Palo Alto, California, had a global reputation for quality computers, printers, and scientific products. However, the combination of a conservative culture and an unwieldy structure was slowing the company down. Fiorina was recruited to use her leadership skills to shake up the organization and put it back on track toward faster growth.

Within months, the new CEO proposed a reorganization to streamline Hewlett-Packard's bloated structure by collapsing eighty-three separate business units into twelve, then aligning these into four divisional groups. Although long-tenured insiders advised her that employees need more time and preparation to adapt to the structure, Fiorina directed its implementation in just ninety days.

Despite their misgivings, the insiders found that the new organization was a big improvement. Now, design teams for different divisions work together to develop products such as laser printers and inkjet printers that are completely compatible. Even more important, Fiorina's new structure enabled managers to reach across divisional lines and pull together a complete package of products and services for customers such as Amazon.com. Previously, the managers of each autonomous business didn't always cooperate with those outside their own unit, even when corporatewide goals were at stake.

Seeing Hewlett-Packard employees as high achievers, Fiorina scrapped the company's previous profit-sharing program and substituted a new performance-based incentive plan. Then she provided both financial and moral support to boost employees' efforts in achieving growth goals. For example, Fiorina began touring the research laboratories on a monthly basis to find out what was new and to encourage innovation. When she heard that one promising project was about to lose its funding, she quickly restored its budget. In addition, Fiorina called meetings frequently to inspire employees and celebrate good results. As time goes on, this CEO's leadership will continue to be a critical factor in Hewlett-Packard's ability to combat competitors and achieve faster growth.

> *The feeling was, here was Carly, who wasn't a long time in the H-P culture, who doesn't understand our business and the H-P Way, and doesn't understand our strengths, particularly in businesses that were viewed as so successful for so long.*
>
> *—Neal Martini, an executive in Hewlett-Packard's printer division**

Reference: David P. Hamilton, "Soul Saver: Inside Hewlett-Packard, Carly Fiorina Combines Discipline, New-Age Talk," *Wall Street Journal*, August 22, 2000, pp. A1, A18 (*quote on p. A18).

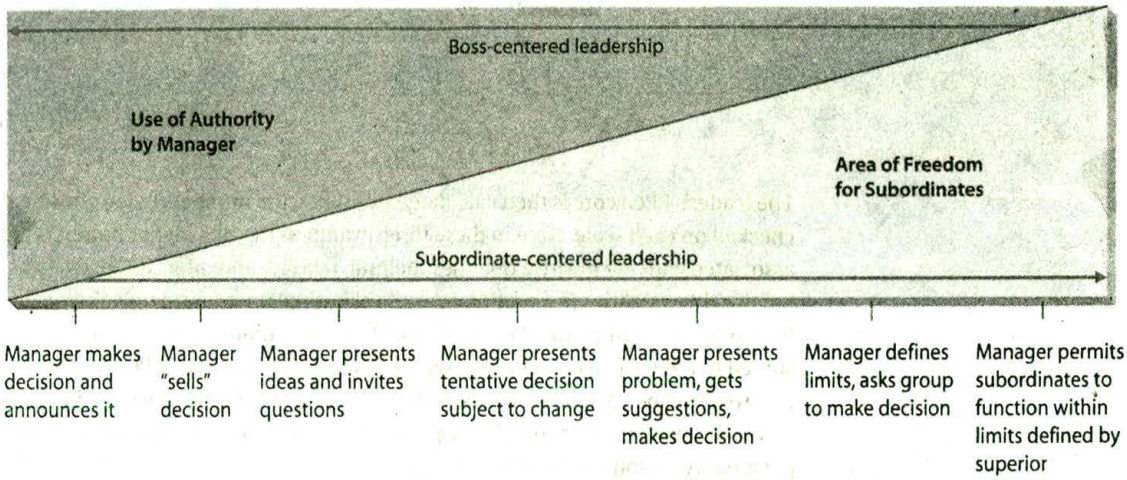
a manager might consider. These behaviors are shown on the leadership continuum in Figure 17.2.

This continuum of behavior moves from the one extreme of having the manager make the decision alone to the other extreme of having the employees make the decision with minimal guidance. Each point on the continuum is influenced by characteristics of the manager, subordinates, and the situation. Managerial characteristics include the manager's value system, confidence in subordinates, personal inclinations, and feelings of security. Subordinate characteristics include the subordinates' need for independence, readiness to assume responsibility, tolerance for ambiguity, interest in the problem, understanding of goals, knowledge, experience, and expectations. Situational characteristics that affect decision mak-

Figure 17.2

Tannenbaum and Schmidt's Leadership Continuum

The Tannenbaum and Schmidt leadership continuum was an important precursor to modern situational approaches to leadership. The continuum identifies seven levels of leadership that range between the extremes of boss-centered and subordinate-centered leadership.



Source: Reprinted by permission of the *Harvard Business Review*. An exhibit from "How to Choose a Leadership Pattern" by Robert Tannenbaum and Warren Schmidt (May–June 1973). Copyright © 1973 by the President and Fellows of Harvard College; all rights reserved.

ing include the type of organization, group effectiveness, the problem itself, and time pressures. Although this framework pointed out the importance of situational factors, it was only speculative. It remained for others to develop more comprehensive and integrated theories. In the following sections, we describe four of the most important and widely accepted situational theories of leadership: the LPC theory, the path-goal theory, Vroom's decision tree approach, and the leader-member exchange approach.

LPC Theory

The **LPC theory**, developed by Fred Fiedler, was the first true situational theory of leadership.[17] (As we will discuss below, LPC stands for "least preferred coworker.") Beginning with a combined trait and behavior approach, Fiedler identified two styles of leadership: task-oriented (analogous to job-centered and initiating-structure behavior) and relationship-oriented (similar to employee-centered and consideration behavior). He went beyond the earlier behavioral approaches by arguing that the style of behavior is a reflection of the leader's personality, and that most personalities fall into one of his two categories, task-oriented or relationship-oriented by nature. Fiedler measures leader style by means of a controversial questionnaire called the **least preferred coworker (LPC)** measure. To use the measure,

LPC theory A theory of leadership that suggests that the appropriate style of leadership varies with situational favorableness

least preferred coworker (LPC) The measuring scale that asks leaders to describe the person with whom he or she is able to work least well

a manager or leader is asked to describe the specific person with whom he or she is able to work least well—the LPC—by filling in a set of sixteen scales anchored at each end by a positive or negative adjective. For example, three of the sixteen scales are:

Helpful	8 7 6 5 4 3 2 1	Frustrating
Tense	1 2 3 4 5 6 7 8	Relaxed
Boring	1 2 3 4 5 6 7 8	Interesting

The leader's LPC score is then calculated by adding the numbers below the line checked on each scale. Note in these three examples that the higher numbers are associated with the positive qualities (helpful, relaxed, and interesting), whereas the negative qualities (frustrating, tense, and boring) have low point values. A high total score is assumed to reflect a relationship orientation and a low score is assumed to reflect a task orientation on the part of the leader. The LPC measure is controversial because researchers disagree about its validity. Some question exactly what an LPC measure reflects and whether the score is an index of behavior, personality, or some other factor.[18]

Favorableness of the Situation The underlying assumption of situational models of leadership is that appropriate leader behavior varies from one situation to another. According to Fiedler, the key situational factor is the favorableness of the situation from the leader's point of view. This factor is determined by leader-member relations, task structure, and position power. *Leader-member relations* refer to the nature of the relationship between the leader and the work group. If the leader and the group have a high degree of mutual trust, respect, and confidence, and if they like one another, relations are assumed to be good. If there is little trust, respect, or confidence, and if they do not like each other, relations are poor. Naturally, good relations are more favorable.

Task structure is the degree to which the group's task is well defined. The task is structured when it is routine, easily understood, and unambiguous and when the group has standard procedures and precedents to rely on. An unstructured task is nonroutine, ambiguous, complex, and with no standard procedures or precedents. You can see that high structure is more favorable for the leader, whereas low structure is less favorable. For example, if the task is unstructured, the group will not know what to do and the leader will have to play a major role in guiding and directing its activities. If the task is structured, the leader will not have to get so involved and can devote time to nonsupervisory activities.

Position power is the power vested in the leader's position. If the leader has the power to assign work and to reward and punish employees, position power is assumed to be strong. But if the leader must get job assignments approved by someone else and does not administer rewards and punishment, position power is weak and it is more difficult to accomplish goals. From the leader's point of

view, strong position power is clearly preferable to weak position power. However, position power is not as important as task structure and leader-member relations.

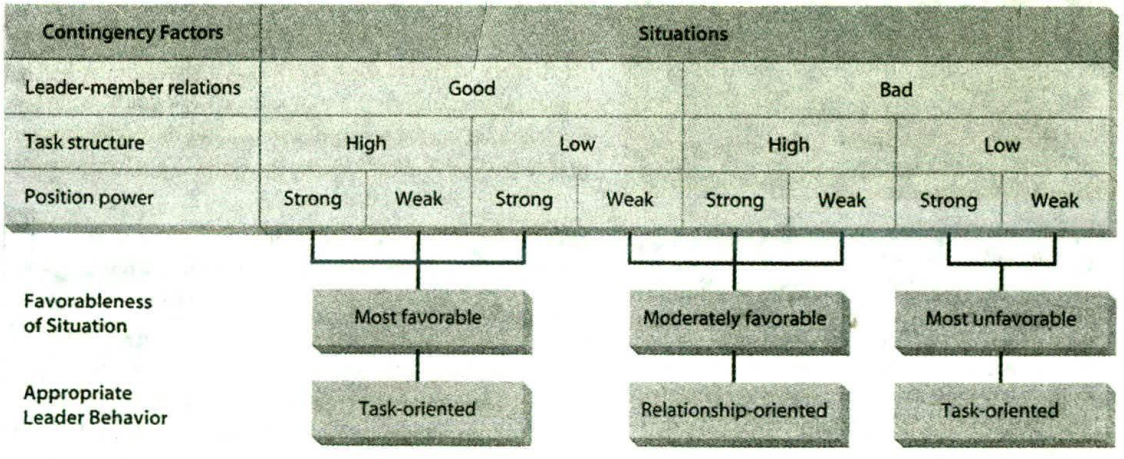
Favorableness and Leader Style Fiedler and his associates conducted numerous studies linking the favorableness of various situations to leader style and the effectiveness of the group.[19] The results of these studies—and the overall framework of the theory—are shown in Figure 17.3. To interpret the model, look first at the situational factors at the top of the figure: good or bad leader-member relations, high or low task structure, and strong or weak position power can be combined to yield eight unique situations. For example, good leader-member relations, high task structure, and strong position power (at the far left) are presumed to define the most favorable situation; bad leader-member relations, low task structure, and weak position power (at the far right) are the least favorable. The other combinations reflect intermediate levels of favorableness.

Below each set of situations is shown the degree of favorableness and the form of leader behavior found to be most strongly associated with effective group performance for those situations. When the situation is most and least favorable, Fiedler has found that a task-oriented leader is most effective. When the situation is only moderately favorable, however, a relationship-oriented leader is predicted to be most effective.

Figure 17.3

The Least-Preferred Coworker Theory of Leadership

Fiedler's LPC theory of leadership suggests that appropriate leader behavior varies as a function of the favorableness of the situation. Favorableness, in turn, is defined by task structure, leader-member relations, and the leader's position power. According to LPC theory, the most and least favorable situations call for task-oriented leadership, whereas moderately favorable situations suggest the need for relationship-oriented leadership.



Flexibility of Leader Style Fiedler argued that, for any given individual, leader style is essentially fixed and cannot be changed: leaders cannot change their behavior to fit a particular situation because it is linked to their particular personality traits. Thus, when a leader's style and the situation do not match, Fiedler argued that the situation should be changed to fit the leader's style. When leader-member relations are good, task structure is low, and position power is weak, the leader style most likely to be effective is relationship-oriented. If the leader is task-oriented, a mismatch exists. According to Fiedler, the leader can make the elements of the situation more congruent by structuring the task (by developing guidelines and procedures, for instance) and increasing power (by requesting additional authority or by other means).

Fiedler's contingency theory has been attacked on the grounds that it is not always supported by research, that his findings are subject to other interpretations, that the LPC measure lacks validity, and that his assumptions about the inflexibility of leader behavior are unrealistic.[20] However, Fiedler's theory was one of the first to adopt a situational perspective on leadership. It has helped many managers recognize the important situational factors they must contend with, and it has fostered additional thinking about the situational nature of leadership. In recent years Fiedler has attempted to address some of the concerns about his theory by revising it and adding additional elements such as cognitive resources.



The path-goal theory is an important situational model of leadership. Mari Matsunaga is a good example of a leader who has successfully used the path-goal theory. She designed I-mode, an astonishingly successful mobile-phone Internet service provided by NTT and which is today among the world's largest mobile-phone companies. Ms. Matsunaga found it necessary to adopt a variety of leadership styles as she dealt with old-line technical engineers, modern consumers, and government bureaucrats, and she had to constantly account for a variety of environmental characteristics as she developed her new enterprise.

Path-Goal Theory

The path-goal theory of leadership—associated most closely with Martin Evans and Robert House—is a direct extension of the expectancy theory of motivation discussed in Chapter 14.[21] Recall that the primary components of expectancy theory included the likelihood of attaining various outcomes and the value associated with those outcomes. The **path-goal theory** of leadership suggests that the primary functions of a leader are to make valued or desired rewards available in the workplace and to clarify for the subordinate the kinds of behavior that will lead to goal accomplishment and valued rewards—that is, the leader should clarify the paths to goal attainment.

Leader Behavior The most fully developed version of path-goal theory identifies four kinds of leader behavior. *Directive leader behavior* is letting subordinates know what is expected of them, giving guidance and direction, and scheduling work. *Supportive leader behavior* is being friendly and approachable, showing concern for subordinate welfare, and treating subordinates as equals. *Participative leader behavior* is consulting subordinates, soliciting suggestions, and allowing participation in decision making. *Achievement-oriented leader behavior* is setting challenging goals, expecting subor-

dinates to perform at high levels, encouraging subordinates, and showing confidence in subordinates' abilities.

In contrast to Fiedler's theory, path-goal theory assumes that leaders can change their style or behavior to meet the demands of a particular situation. For example, when encountering a new group of subordinates and a new project, the leader may be directive in establishing work procedures and in outlining what needs to be done. Next, the leader may adopt supportive behavior to foster group cohesiveness and a positive climate. As the group becomes familiar with the task and as new problems are encountered, the leader may exhibit participative behavior to enhance group members' motivation. Finally, achievement-oriented behavior may be used to encourage continued high performance.

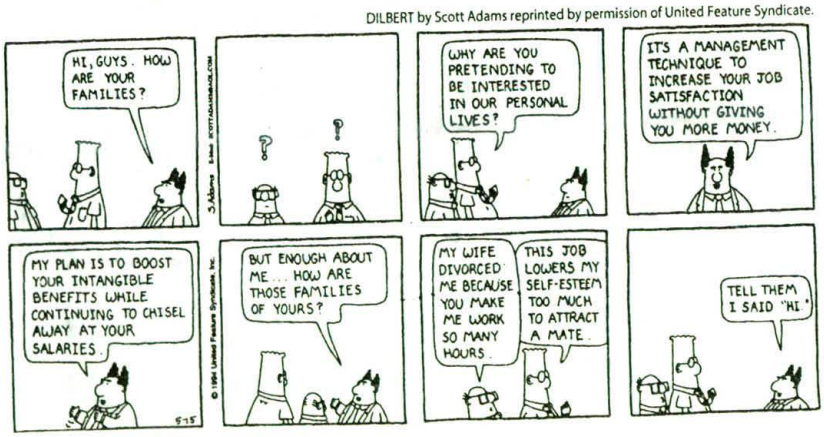
path-goal theory A theory of leadership suggesting that the primary functions of a leader are to make valued or desired rewards available in the workplace and to clarify for the subordinate the kinds of behavior that will lead to goal accomplishment and valued rewards

Situational Factors Like other situational theories of leadership, path-goal theory suggests that appropriate leader style depends on situational factors. Path-goal theory focuses on the situational factors of the personal characteristics of subordinates and environmental characteristics of the workplace.

Important personal characteristics include the subordinates' perception of their own ability and their locus of control. If people perceive that they are lacking in ability, they may prefer directive leadership to help them understand path-goal relationships better. If they perceive themselves to have a lot of ability, however, employees may resent directive leadership. Locus of control is a personality trait. People who have an internal locus of control believe that what happens to them is a function of their own efforts and behavior. Those who have an external locus of control assume that fate, luck, or "the system" determines what happens to them. A person with an internal locus of control may prefer participative leadership, whereas a person with an external locus of control may prefer directive leadership. Managers can do little or nothing to influence the personal characteristics of subordinates, but they can shape the environment to take advantage of these personal characteristics by providing rewards and structuring tasks, for example.

Environmental characteristics include factors outside the subordinate's control. Task structure is one such factor. When structure is high, directive leadership is less

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Most effective leaders demonstrate sincere interest in the personal welfare of their followers. This interest can extend to concern about their families and personal lives as well. When the interest is real, employees may feel more valued and appreciated by their leader and develop stronger job satisfaction and dedication. But if the leader's interest is superficial and is an obvious ploy to show interest, employees will likely see what's going on and come to resent and to lose respect for the leader.

effective than when structure is low. Subordinates do not usually need their boss to tell them continually how to do an extremely routine job. The formal authority system is another important environmental characteristic. Again, the higher the degree of formality, the less directive is the leader behavior that will be accepted by subordinates. The nature of the work group also affects appropriate leader behavior. When the work group provides the employee with social support and satisfaction, supportive leader behavior is less critical. When social support and satisfaction cannot be derived from the group, the worker may look to the leader for this support.

The basic path-goal framework as illustrated in Figure 17.4 shows that different leader behaviors affect subordinate's motivation to perform. Personal and environmental characteristics are seen as defining which behaviors lead to which outcomes. The path-goal theory of leadership is a dynamic and incomplete model. The original intent was to state the theory in general terms so that future research could explore a variety of interrelationships and modify the theory. Research that has been done suggests that the path-goal theory is a reasonably good description of the leadership process and that future investigations along these lines should enable us to discover more about the link between leadership and motivation.[22]

Vroom's Decision Tree Approach

Vroom's decision tree approach
Predicts what kinds of situations call for what degrees of group participation

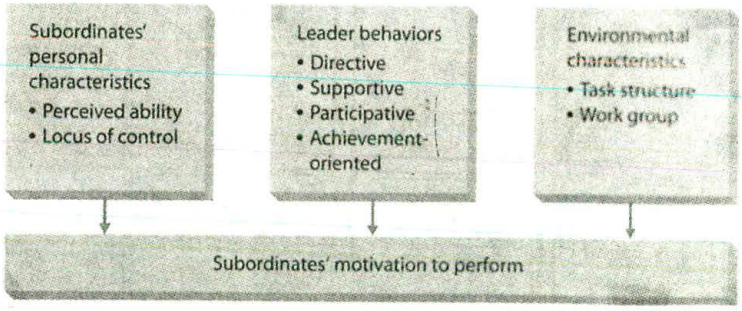
The third major contemporary approach to leadership is **Vroom's decision tree approach**. The earliest version of this model was proposed by Victor Vroom and Philip Yetton and later revised and expanded by Vroom and Arthur Jago.[23] Most recently, Vroom has developed yet another refinement of the original model.[24] Like the path-goal theory, this approach attempts to prescribe a leadership style appropriate to a given situation. It also assumes that the same leader may display different leadership styles. But Vroom's approach concerns itself with only a single aspect of leader behavior: subordinate participation in decision making.

Basic Premises Vroom's decision tree approach assumes that the degree to which subordinates should be encouraged to participate in decision making depends on the characteristics of the situation. In other words, no one decision-

Figure 17.4

The Path-Goal Framework

The path-goal theory of leadership suggests that managers can use four types of leader behavior to clarify subordinates' paths to goal attainment. Personal characteristics of the subordinate and environmental characteristics within the organization both must be taken into account when determining which style of leadership will work best for a particular situation.



making process is best for all situations. After evaluating different problem attributes (characteristics of the problem or decision), the leader determines an appropriate decision style that specifies the amount of subordinate participation.

Vroom's current formulation suggests that managers use one of two different decision trees.[25] The manager first assesses the situation in terms of several factors. This assessment involves determining whether the given factor is "high" or "low" for the decision to be made. For instance, the first factor is decision significance. If the decision is extremely important and may have a major impact on the organization (i.e., choosing a location for a new plant), its significance is high. But if the decision is routine and its consequences are not terribly important (i.e., selecting a color for the firm's softball team uniforms), its significance is low. This assessment guides the manager through the paths of the decision tree to a recommended course of action. One decision tree is to be used when the manager is primarily interested in making the decision on the most timely basis possible; the other is to be used when time is less critical and the manager is interested in helping subordinates to improve and develop their own decision-making skills.

The two decision trees are shown in Figures 17.5 and 17.6. The problem attributes (situational factors) are arranged along the top of the decision tree. To use the model, the decision maker starts at the left side of the diagram and assesses the first problem attribute (decision significance). The answer determines the path to the second node on the decision tree, where the next attribute (importance of commitment) is assessed. This process continues until a terminal node is reached. In this way, the manager identifies an effective decision-making style for the situation.

Decision-Making Styles The various decision styles reflected at the ends of the tree branches represent different levels of subordinate participation that the manager should attempt to adopt in a given situation. The five styles are defined as follows:

Decide: The manager makes the decision alone and then announces or "sells" it to the group.

Consult (individually): The manager presents the program to group members individually, obtains their suggestions, and then makes the decision.

Consult (group): The manager presents the problem to group members at a meeting, gets their suggestions, and then makes the decision.

Facilitate: The manager presents the problem to the group at a meeting, defines the problem and its boundaries, and then facilitates group member discussion as they make the decision.

Delegate: The manager allows the group to define for itself the exact nature and parameters of the problem and then to develop a solution.

Vroom's decision tree approach represents a very focused but quite complex perspective on leadership. To compensate for this difficulty, Vroom has developed elaborate expert system software to help managers assess a situation accurately and quickly and then to make an appropriate decision regarding employee participation.[26] Many firms, including Halliburton Company, Litton Industries, and Borland International, have provided their managers with training in using the various versions of this model.

Figure 17.5

Vroom's Time-Driven Decision Tree

This matrix is recommended for situations where time is of the highest importance in making a decision. The matrix operates like a funnel. You start at the left with a specific decision problem in mind. The column headings denote situational factors that may or may not be present in that problem. You progress by selecting High or Low (H or L) for each relevant situational factor. Proceed down the funnel, judging only those situational factors for which a judgment is called for, until you reach the recommended process.

PROBLEM STATEMENT	Decision Significance	Importance of Commitment	Leader Expertise	Likelihood of Commitment	Group Support	Group Expertise	Team Competence	
	H	H	H	H	—	—	—	Decide
				L	H	H	H	Delegate
							L	Consult (group)
						L	—	
					L	—	—	
			L	H	H	H	H	Facilitate
							L	Consult (individually)
						L	—	
					L	—	—	
				L	H	H	H	Facilitate
							L	Consult (group)
						L	—	
					L	—	—	
		L	H	—	—	—	—	Decide
			L	—	H	H	H	Facilitate
							L	Consult (individually)
						L	—	
					L	—	—	
	L	H	—	H	—	—	—	Decide
				L	—	—	H	Delegate
							L	Facilitate
		L	—	—	—	—	—	Decide

Source: Adapted and reprinted from *Leadership and Decision-Making* by Victor H. Vroom and Philip W. Yetton, by permission of the University of Pittsburgh Press. © 1973 by University of Pittsburgh Press.

Evaluation and Implications Because Vroom's current approach is relatively new, it has not been fully and scientifically tested. The original model and its subsequent refinement, however, attracted a great deal of attention and generally was supported by research.[27] For example, there is some support for the idea that individuals who make decisions consistent with the predictions of the model are more effective than those who make decisions inconsistent with it. The model therefore appears to be a tool that managers can apply with some confidence in deciding how much subordinates should participate in the decision-making process.

The Leader-Member Exchange Approach

leader-member exchange (LMX) model Stresses the importance of variable relationships between supervisors and each of their subordinates

Because leadership is such an important area, managers and researchers continue to study it. As a result, new ideas, theories, and perspectives are continuously being developed. The **leader-member exchange (LMX) model** of leadership, conceived by George Graen and Fred Dansereau, stresses the importance of variable relationships between supervisors and each of their subordinates.[28] Each supervisor-

PROBLEM STATEMENT	Decision Significance	Importance of Commitment	Leader Expertise	Likelihood of Commitment	Group Support	Group Expertise	Team Competence	
	H	H	—	H	H	H	H	Decide
							L	Facilitate
						L	—	Consult (group)
					L	—	—	
				L	H	H	H	Delegate
							L	Facilitate
						L	—	
					L	—	—	Consult (group)
		L	—	—	H	H	H	Delegate
							L	Facilitate
						L	—	Consult (group)
					L	—	—	
	L	H	—	H	—	—	—	Decide
				L	—	—	—	Delegate
		L	—	—	—	—	—	Decide

Figure 17.6

Vroom's Development-Driven Decision Tree

This matrix is to be used when the leader is more interested in developing employees than in making the decision as quickly as possible. Just as with the time-driven tree shown in Figure 17.5, the leader assesses up to seven situational factors. These factors, in turn, funnel the leader to a recommended process for making the decision.

Source: Adapted and reprinted from *Leadership and Decision-Making*, by Victor H. Vroom and Phillip W. Yetton, by permission of the University of Pittsburgh Press. © 1973 by University of Pittsburgh Press.

subordinate pair is referred to as a "vertical dyad." The model differs from earlier approaches because it focuses on the differential relationship leaders often establish with different subordinates. Figure 17.7 shows the basic concepts of the leader-member exchange theory.

The model suggests that supervisors establish a special relationship with a small number of trusted subordinates referred to as the in-group. The in-group usually receives special duties requiring responsibility and autonomy; they may also receive special privileges. Subordinates who are not part of this group are called the out-group, and they receive less of the supervisor's time and attention. Note in the figure that the leader has a dyadic, or one-to-one, relationship with each of the five subordinates.

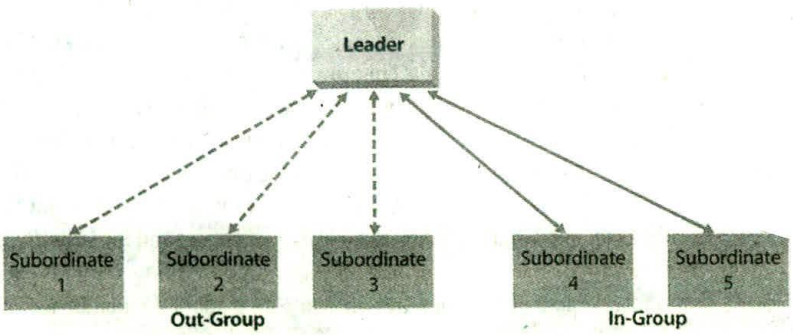


Figure 17.7

The Leader-Member Exchange (LMX) Model

The LMX model suggests that leaders form unique independent relationships with each of their subordinates. As illustrated here, a key factor in the nature of this relationship is whether the individual subordinate is in the leader's out-group or in-group.

Early in his or her interaction with a given subordinate, the supervisor initiates either an in-group or out-group relationship. It is not clear how a leader selects members of the in-group, but the decision may be based on personal compatibility and subordinates' competence. Research has confirmed the existence of in-groups and out-groups. In addition, studies generally have found that in-group members have a higher level of performance and satisfaction than out-group members.[29]

MANAGEMENT IMPLICATIONS The most important thing for managers to remember about the situational theories is their underlying assumption that appropriate leadership behavior depends on elements of the situation. The LPC theory points to some of these situational factors. The path-goal theory stresses that leaders can change their behaviors to match the situation best. Vroom's decision tree approach provides guidance about employee participation in decision making. The LMX approach underscores the importance of in-groups and out-groups as well as the importance of individual relationships between leaders and followers.

■ Related Perspectives on Leadership

Because of its importance to organizational effectiveness, leadership continues to be the focus of a great deal of research and theory building. New approaches that have attracted much attention are the concepts of substitutes for leadership and transformational leadership.

Substitutes for Leadership

substitutes for leadership A concept that identifies situations in which leader behaviors are neutralized or replaced by characteristics of subordinates, the task, and the organization

The concept of **substitutes for leadership** was developed because existing leadership models and theories do not account for situations in which leadership is not needed.[30] They simply try to specify what kind of leader behavior is appropriate. The substitute concepts, however, identify situations in which leader behaviors are neutralized or replaced by characteristics of the subordinate, the task, and the organization. For example, when a patient is delivered to a hospital emergency room, the professionals on duty do not wait to be told what to do by a leader. Nurses, doctors, and attendants all go into action without waiting for directive or supportive leader behavior from the emergency-room supervisor.

Characteristics of the subordinate that may serve to neutralize leader behavior include ability, experience, need for independence, professional orientation, and indifference toward organizational rewards. For example, employees with a high level of ability and experience may not need to be told what to do. Similarly, a subordinate's strong need for independence may render leader behavior ineffective. Task characteristics that may substitute for leadership include routineness, the availability of feedback, and intrinsic satisfaction. When the job is routine and simple, the subordinate may not need direction. When the task is challenging and intrinsically satisfying, the subordinate may not need or want social support from a leader.

Organizational characteristics that may substitute for leadership include formalization, group cohesion, inflexibility, and a rigid reward structure. Leadership

may not be necessary when policies and practices are formal and inflexible, for example. Similarly, a rigid reward system may rob the leader of reward power and thereby decrease the importance of the role. Preliminary research has provided support for the concept of substitutes for leadership.[31]

Charismatic Leadership

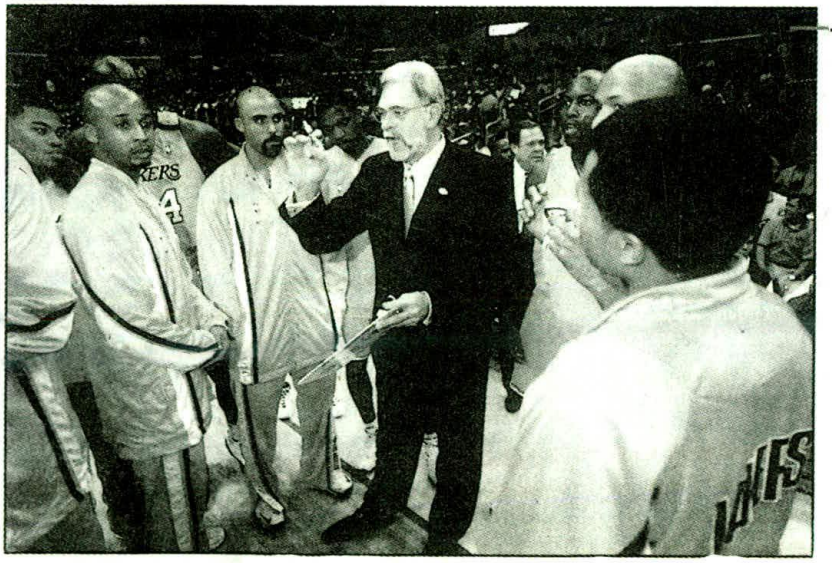
The concept of **charismatic leadership**, like trait theories, assumes that charisma is an individual characteristic of the leader. **Charisma** is a form of interpersonal attraction that inspires support and acceptance. All else being equal, then, someone with charisma is more likely to be able to influence others than is someone without charisma. For example, a highly charismatic supervisor will be more successful in influencing subordinate behavior than a supervisor who lacks charisma. Thus, influence is again a fundamental element of this perspective.

charismatic leadership Assumes that charisma is an individual characteristic of the leader

charisma A form of interpersonal attraction that inspires support and acceptance

Robert House first proposed a theory of charismatic leadership in 1977 based on research findings from various social science disciplines.[32] His theory suggests that charismatic leaders are likely to have a lot of self-confidence, a firm conviction in their beliefs and ideals, and a strong need to influence people. They also tend to communicate high expectations about follower performance and express confidence in followers. Donald Trump is an excellent example of a charismatic leader. Even though he has made his share of mistakes and generally is perceived as only an "average" manager, many people view him as larger than life.[33]

There are three elements of charismatic leadership in organizations that most experts acknowledge today.[34] First, the leader needs to be able to envision the future, to set high expectations, and to model behaviors consistent with meeting those expectations. Next, the charismatic leader must be able to energize others



Phil Jackson is considered to be one of the top coaches in the National Basketball Association, having won world championships first with the Chicago Bulls and more recently with the Los Angeles Lakers. One key to his success is his personal charisma. Jackson is able to simultaneously command both the respect and the affection of his players. This rare combination allows him to channel and direct the energies of players toward the singular goal of winning basketball games, putting aside personal goals and petty differences of opinion.

through a demonstration of personal excitement, personal confidence, and patterns of success. And finally, the charismatic leader enables others by supporting them, by empathizing with them, and by expressing confidence in them.

Charismatic leadership ideas are quite popular among managers today and are the subject of numerous books and articles. Unfortunately, few studies have specifically attempted to test the meaning and impact of charismatic leadership. There are also lingering ethical issues about charismatic leadership, however, that trouble some people. For example, several notorious historical leaders were no doubt very charismatic individuals. To the extent that a charismatic leader is followed due solely to his or her personal attractiveness, those followers may engage in behaviors that they might have otherwise rejected. *Managing in an e-Business World* describes the role of charisma at two Internet start-up companies.

MANAGING IN AN *e*-BUSINESS WORLD

CHARISMATIC INTERNET LEADERSHIP

Ola Ahlvarsson and Jay Chiat may head Internet companies thousands of miles apart, but they have one important leadership quality in common: charisma. Ahlvarsson, a world champion kickboxer, is the founder of Result Venture Knowledge International in Sweden, a company devoted to generating ideas for new Internet businesses. Guided by his far-reaching vision of Europe as an Internet business center—and fueled by his boundless personal enthusiasm—Ahlvarsson has had a hand in establishing more than twenty web companies.

Ahlvarsson comes up with a seemingly endless stream of web business ideas that he pushes to market as quickly as possible. His company develops detailed business plans for each, secures financial backing, works on the web site and operational launch, and retains a piece of the business as it matures and becomes independent. Thanks to Ahlvarsson's foresight and drive, these fledgling e-businesses often have a head start over aggressive U.S. web firms seeking to expand in Europe. Despite increased competition, Ahlvarsson is confident that his knowledge of local markets gives his companies the edge they need to thrive.

Across the Atlantic Ocean, Jay Chiat, another charismatic leader, built and then sold a hugely successful advertising agency before heading ScreamingMedia (http://www.screamingmedia.com), a broker of Internet content. Chiat's company acts as an intermediary between news organizations and web sites hungry for timely content. As a leader, Chiat is as interested in forging a creative, inspirational internal climate as he is in bringing a good product to the company's one-thousand-plus business customers.

Every time an employee closes a deal, the entire office celebrates at the sounding of a gong. Good enough is never enough for this work-hard, play-hard leader, who expects—and gets—the best from his staff, every day. When Chiat felt tension developing between different departments within ScreamingMedia, his solution was to throw everyone together at a party and encourage lots of informal mixing and mingling. As e-commerce grows and Internet competition becomes even more intense, both Chiat and Ahlvarsson will be out in front, leading their employees to even higher performance.

He has a mysterious capacity to make people want to do their best work.

—Designer Milton Glaser, talking about Jay Chiat*

References: William Echikson, "Europe's Top E.Business Leaders," *Business Week*, February 7, 2000, pp. EB58–EB59; Warren Berger, "The Cool Thing About Aggregation," *Wired*, October 2000, pp. 186–200 (*quote on p. 196); "The E Gang," *Forbes*, July 24, 2000, pp. 145–172.

Transformational Leadership

Another new perspective on leadership has been called by several labels: charismatic leadership, inspirational leadership, symbolic leadership, and transformational leadership. We use the term **transformational leadership** and define it as leadership that goes beyond ordinary expectations by transmitting a sense of mission, stimulating learning experiences, and inspiring new ways of thinking.[35] Because of rapid change and turbulent environments, transformational leaders are increasingly being seen as vital to the success of business.

transformational leadership Leadership that goes beyond ordinary expectations by transmitting a sense of mission, stimulating learning experiences, and inspiring new ways of thinking

A recent popular-press article identified seven keys to successful leadership: trusting one's subordinates, developing a vision, keeping cool, encouraging risk, being an expert, inviting dissent, and simplifying things.[36] Although this list was the result of a simplistic survey of the leadership literature, it is nevertheless consistent with the premises underlying transformational leadership. So, too, are recent examples cited as effective leadership. Take, for example, the case of General Electric. When Jack Welch assumed the position of CEO, GE was a lethargic behemoth composed of more than one hundred businesses. Decision making was slow, and bureaucracy stifled individual initiative. Welch stripped away the bureaucracy, streamlined the entire organization, sold dozens of businesses, and bought many new ones. Indeed, Welch's most recent change at GE was his acquisition of Honeywell in late 2000 for $44 billion.[37] He literally re-created the organization, and today GE is one of the most admired and profitable firms in the world. Transformational leadership was the basis for all of Welch's changes.

MANAGEMENT IMPLICATIONS Managers should understand and appreciate the basic nature of charisma in organizations. In addition, they should also be fully aware of the distinctions between transformational leadership and what experts call transactional leadership—routine and administrative activities generally associated with management.

■ *Political Behavior in Organizations*

Another common influence on behavior is politics and political behavior. **Political behavior** describes activities carried out for the specific purpose of acquiring, developing, and using power and other resources to obtain one's preferred outcomes.[38] Political behavior may be undertaken by managers dealing with their subordinates, subordinates dealing with their managers, and managers and subordinates dealing with others at the same level. In other words, it may be directed upward, downward, or laterally. Decisions ranging from where to locate a manufacturing plant to where to put the company coffeepot are subject to political action. In any situation, individuals may engage in political behavior to further their own ends, to protect themselves from others, to further goals they sincerely believe to be in the organization's best interest, or simply to acquire and exercise power. And power may be sought by individuals, by groups of individuals, or by groups of groups.[39]

political behavior The activities carried out for the specific purpose of acquiring, developing, and using power and other resources to obtain one's preferred outcomes

While political behavior is difficult to study because of its sensitive nature, one early survey found that many managers believed that politics influenced salary and hiring decisions in their firms. Many also believed that the incidence of political behavior was greater at the upper levels of their organizations and less at the lower levels. More than one-half of the respondents felt that organizational politics was bad, unfair, unhealthy, and irrational, but most suggested that successful executives have to be good politicians and be political to "get ahead."[40]

Common Political Behaviors

Research has identified four basic forms of political behavior widely practiced in organizations.[41] One form is *inducement*, which occurs when a manager offers to give something to someone else in return for that individual's support. For example, a product manager might suggest to another product manager that she will put in a good word with his boss if he supports a new marketing plan that she has developed. A second tactic is *persuasion*, which relies on both emotion and logic. An operations manager wanting to construct a new plant on a certain site might persuade others to support his goal on grounds that are objective and logical (the site is less expensive and taxes are lower) as well as subjective and personal.

A third political behavior involves the *creation of an obligation*. For example, one manager might support a recommendation made by another manager for a new advertising campaign. Although he may really have no opinion on the new campaign, he may think that by going along he is incurring a debt from the other manager and will be able to "call in" that debt when he wants to get something done and needs additional support. *Coercion* is the use of force to get one's way. For example, a manager may threaten to withhold support, rewards, or other resources as a way to influence someone else.

impression management A direct and intentional effort by someone to enhance his or her image in the eyes of others

Impression management is a subtle form of political behavior that deserves special mention. **Impression management** is a direct and intentional effort by someone to enhance his or her image in the eyes of others. People engage in impression management for a variety of reasons. They may do so to further their own career. By making themselves look good, they think they are more likely to receive rewards, to be given attractive job assignments, and to receive promotions. They may also engage in impression management to boost their own self-esteem. When people have a solid image in an organization, others make them aware of it through compliments, respect, and so forth. Still another reason people use impression management is in an effort to acquire more power, and hence more control.

People attempt to manage how others perceive them through various mechanisms. Appearance is one of the first things people think of. Hence, a person motived by impression management will pay close attention to choice of attire, selection of language, and the use of manners and body posture. People interested in impression management are also likely to jockey to be associated only with successful projects. By being assigned to high-profile projects led by highly successful managers, a person can begin to link their own name with such projects in the minds of others.

Sometimes people too strongly motivated by impression management become obsessed by it and may resort to dishonest and/or unethical means. For example,

some people have been known to take credit for others' work in an effort to make themselves look better. People have also been known to exaggerate or even falsify their personal accomplishments in an effort to build an enhanced image.[42]

Managing Political Behavior

By its very nature, political behavior is tricky to approach in a rational and systematic way. But managers can handle political behavior so that it does not do excessive damage. First, managers should be aware that even if their actions are not politically motivated, others may assume that they are. Second, by providing subordinates with autonomy, responsibility, challenge, and feedback, managers reduce the likelihood of political behavior by subordinates. Third, managers should avoid using power if they want to avoid charges of political motivation. Fourth, managers should get disagreements out in the open so that subordinates will have less opportunity for political behavior, using conflict for their own purposes. Finally, managers should avoid covert activities. Behind-the-scene activities give the impression of political intent even if none really exists.[43] Other guidelines include clearly communicating the bases and processes for performance evaluations, tying rewards directly to performance, and minimizing competition among managers for resources.[44]

Of course, those guidelines are a lot easier to list than they are to implement. The well-informed manager should not assume that political behavior does not exist or, worse yet, attempt to eliminate it by issuing orders or commands. Instead, the manager must recognize that political behavior exists in virtually all organizations and that it cannot be ignored or stamped out. It can, however, be managed in such a way that it will seldom inflict serious damage on the organization. It may even play a useful role in some situations.[45] For example, a manager may be able to use his or her political influence to stimulate a greater sense of social responsibility or to heighten awareness of the ethical implications of a decision.

MANAGEMENT IMPLICATIONS Managers need to understand the dynamics of political behavior in organizations. In particular, they should know the more common political behaviors, including impression management, as well as methods for managing political behavior.

Summary of Key Points

As a process, leadership is the use of noncoercive influence to shape the group's or organization's goals, motivate behavior toward the achievement of those goals, and help define group or organization culture. As a property, leadership is the set of characteristics attributed to those who are perceived to be leaders. Leadership and management are often related but are also different. Managers and leaders use legitimate, reward, coercive, referent, and expert power.

The trait approach to leadership assumed that some basic trait or set of traits differentiated leaders from nonleaders. The leadership-behavior approach assumed that the behavior of effective leaders was somehow different from

the behavior of nonleaders. Research at the University of Michigan and Ohio State identified two basic forms of leadership behavior—one concentrating on work and performance and the other concentrating on employee welfare and support. The Managerial Grid attempts to train managers to exhibit high levels of both forms of behavior.

Situational approaches to leadership recognize that appropriate forms of leadership behavior are not universally applicable and attempt to specify situations in which various behaviors are appropriate. The LPC theory suggests that a leader's behaviors should be either task-oriented or relationship-oriented depending on the favorableness of the situation. The path-goal theory suggests that directive, supportive, participative, or achievement-oriented leader behaviors may be appropriate, depending on the personal characteristics of subordinates and the environment. Vroom's decision tree approach maintains that leaders should vary the extent to which they allow subordinates to participate in making decisions as a function of problem attributes. The leader-member exchange model focuses on individual relationships between leaders and followers and on in-group versus out-group considerations.

Related leadership perspectives are the concepts of substitutes for leadership, charismatic leadership, and the role of transformational leadership in organizations.

Political behavior is another influence process frequently used in organizations. Impression management, one especially important form of political behavior, is a direct and intentional effort by someone to enhance his or her image in the eyes of others. Managers can take steps to limit the effects of political behavior.

Discussion Questions

Questions for Review

1. Could someone be a manager but not a leader? A leader but not a manager? Both a leader and a manager? Explain.
2. What were the major findings of the Michigan and Ohio State studies of leadership behaviors? Briefly describe each group of studies and compare and contrast their findings.
3. What are the situational approaches to leadership? Briefly describe each and compare and contrast their findings.
4. Describe charismatic and transformation perspectives on leadership. How can they be integrated with existing approaches to leadership?

Questions for Analysis

5. How is it possible for a leader to be task-oriented and employee-oriented at the same time? Can you think of other forms of leader behavior that would be important to a manager? If so, share your thoughts with the class.
6. When all or most of the leadership substitutes are present, does the follower no longer need a leader? Why or why not?
7. Why should members of an organization be aware that political behavior may be going on within the organization? What might occur if they were not aware of it?

Questions for Application

8. What traits seem best to describe student leaders? Military leaders? Business leaders? Political leaders? Religious leaders? What might account for the similarities and differences in your lists of traits?
9. Think about a decision that would affect you as a student. Use Vroom's decision tree approach to decide whether the administrator making that decision should involve students in the decision. Which parts of the

model seem most important in making that decision? Why?

10. How do you know if transformational leadership is present in a group or organization? Could transformational leadership ever lead to dysfunctional outcomes for individuals or organizations? If so, why? If not, why not?

BUILDING EFFECTIVE *diagnostic* SKILLS

Exercise Overview

Diagnostic skills help a manager visualize appropriate responses to a situation. One situation managers often face is whether to use power to solve a problem. This exercise will help you develop your diagnostic skills as they relate to using different types of power in different situations.

Exercise Background

Several methods have been identified for using power:

1. In a legitimate request, the manager requests that the subordinate comply because the subordinate recognizes that the organization has given the manager the right to make the request. Most day-to-day interactions between manager and subordinate are of this type.
2. In instrumental compliance, a subordinate complies to get the reward the manager controls. Suppose that a manager asks a subordinate to do something outside the range of the subordinate's normal duties, such as working extra hours on the weekend, terminating a relationship with a long-standing buyer, or delivering bad news. The subordinate complies and, as a direct result, reaps praise and a bonus from the manager. The next time the subordinate is asked to perform a similar activity, that subordinate will recognize that compliance will be instrumental in her getting more rewards. Hence, the basis of instrumental compliance is clarifying important performance-reward contingencies.
3. Coercion is used when the manager suggests or implies that the subordinate will be punished, fired, or reprimanded if he does not do something.
4. Rational persuasion occurs when the manager can convince the subordinate that compliance is in the subordinate's best interest. For example, a manager might argue that the subordinate should accept a transfer because it would be good for the subordinate's career. In some ways, rational persuasion is like reward power except that the manager does not really control the reward.
5. Personal identification occurs when a manager recognizes that she has referent power over a subordinate and can shape the behavior of that subordinate by engaging in desired behaviors. The manager consciously becomes a model for the subordinate and exploits personal identification.
6. Inspirational appeal occurs when a manager can induce a subordinate to do something consistent with a set of higher ideals or values. For example, a plea for loyalty represents an inspirational appeal.

Exercise Task

With these ideas in mind, do the following:

1. Relate each of the uses of power listed above to the five types of power identified in the chapter. That is, indicate which type(s) of power is most closely associated with each use of power, which type(s) may be related to each use of power, and which type(s) is unrelated to each use of power.
2. Is a manager more likely to be using multiple forms of power at the same time or to be using a single type of power?
3. Identify other methods and approaches to using power.
4. What are some of the dangers and pitfalls associated with using power?

BUILDING EFFECTIVE *decision-making* SKILLS

Exercise Overview

Vroom's decision tree approach to leadership is an effective method for determining how much participation a manager might allow his or her subordinates in making a decision. This exercise will enable you to refine your decision-making skills by applying Vroom's approach to a hypothetical situation.

Exercise Background

Assume that you are the branch manager of the west coast region of the United States for an international manufacturing and sales company. The company is making a major effort to control costs and boost efficiency. As part of this effort, the firm recently installed a networked computer system linking sales representatives, customer service employees, and other sales support staff. The goal of this network was to increase sales while simultaneously cutting sales expenses.

Unfortunately, just the opposite has resulted—sales are down slightly, while expenses are increasing. You have looked into this problem and believe that the computer hardware that people are using is fine. You also believe, however, that the software used to run the system is flawed: it is too hard to use and it provides less than complete information.

Your employees disagree with your assessment, however. They believe that the entire system is fine. They attribute the problems to poor training in using the system and a lack of incentive for using it to solve many problems that they already know how to handle using other methods. Some of them also think that their colleagues are just resisting change.

Your boss has just called and instructed you to "solve the problem." She indicated that she has complete faith in your ability to do so, that decisions about how to proceed will be left to you, and that she wants a report suggesting a course of action in five days.

Exercise Task

Using the information presented above, do the following:

1. Using your own personal preferences and intuition, describe how you think you would proceed.
2. Now use Vroom's approach to determine a course of action.
3. Compare and contrast your initial approach and the approach suggested by Vroom's approach.

BUILDING EFFECTIVE *conceptual* SKILLS

Exercise Overview

Conceptual skills refer to the manager's ability to think in the abstract. This exercise will enable you to apply your conceptual skills to the identification of leadership qualities in others.

Exercise Task

1. Working alone, list the names of ten people you think of as leaders. Note that the names should not necessarily be confined to "good" leaders but instead should identify "strong" leaders.
2. Form small groups with three or four classmates and compare lists. Focus on common and unique examples, as well as the kinds of individuals listed (i.e., male versus female, contemporary versus historical, business versus nonbusiness, etc.).
3. From all the lists, choose two leaders whom most people in the group consider to be the most successful and least successful.

4. Identify similarities and differences between the two successful leaders and between the two less successful leaders.
5. Relate the successes and failures to at least one theory or perspective discussed in the chapter.
6. Select one group member to report your findings to the rest of the class.

CHAPTER CLOSING CASE

How Southwest Airlines Soars

Southwest Airlines has been profitable since 1973—an enviable record no other U.S. airline can match, let alone beat. Much of the credit for the airline's enduring success goes to CEO Herb Kelleher, an affable, hard-driving leader whose fun-loving personality pervades the entire organization, top to bottom. After all, how many airlines have the ticker symbol LUV or paint Seaworld's "Shamu the Whale" on a jetliner?

The history of Southwest reflects its CEO's tenacity. Kelleher had a law practice in San Antonio when a client suggested starting a discount airline to link three Texas cities. After five years of legal battles due to competitors' objections—before deregulation opened the skies to anything-goes competition and pricing—Southwest finally got off the ground in 1971. To keep airfares low, the start-up avoided extras such as meal service and got planes in and out of the gate in twenty minutes or less. The airline now serves dozens of cities across the United States using the original formula of low prices, low costs, and high productivity to keep profits high. In fact, Southwest's operating margins are now three times higher than the industry average.

Kelleher knows that other airlines can buy the same planes and fly the same routes, even set the same prices. What they can't imitate, he pointedly notes, is Southwest's legendary team spirit. The workforce of 30,000 is fiercely loyal to Kelleher and the company, pitching in to get things done on time and within budget. Consider the reaction when Kelleher wrote a memo warning employees that rising fuel prices threatened the airline's profitability and asking every employee to find a way to save $5 per day. Within six weeks, employees had dreamed up enough cost-cutting measures to save more than $2 million—and ideas were still coming in.

Under Kelleher, Southwest has made flying fun for employees and passengers alike. Flight attendants set the tone by weaving in humorous remarks along with their regular in-flight announcements; gate agents lighten up by wearing offbeat hats and bantering with passengers getting on and off planes. Southwest employees really let loose on Halloween, wearing wacky costumes, decorating gate areas, and munching on trick-or-treat snacks.

Keeping this spirit alive as the airline expands is a major challenge. Southwest uses personality testing to identify job applicants who will fit in with the airline's unique approach to business because they are cheerful, optimistic, team-oriented, good communicators, and they can take initiative and make decisions. New hires are then sent to the airline's University for People to hone their interpersonal and technical skills and to learn about the airline's traditions. In the field, local culture committees are charged with perpetuating the culture at each airport and outpost through meetings, games, and parties.

When trouble erupts within the organization, the solution generally comes out of Southwest's own culture. For example, flight attendants once complained about the work schedules devised by the scheduling department; the schedulers, meanwhile, said the flight attendants were uncooperative. In typical Southwest style, management successfully defused the situation by having the two groups switch jobs to learn firsthand about the pressures each group faced.

What would Southwest be like under another CEO? Management is already thinking ahead to the time, not so long from now, when Kelleher steps down and a new CEO takes over. Although Kelleher is always ready with

a funny line, even on formal occasions, he turns serious when speaking about leaving a legacy that will keep Southwest soaring for the long term. Until he relinquishes the CEO position, however, Kelleher will keep pushing to bring the Southwest spirit to new destinations, keep costs down, keep profits high, and—above all—put the fun back in flying.

Case Questions

1. What leadership theories and concepts have contributed to Herb Kelleher's success at Southwest?
2. Do you consider Kelleher to be a manager, a leader, or both? Why?
3. What should Southwest look for in a CEO who will succeed Kelleher?

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CHAPTER 18

Managing Interpersonal Relations and Communication

OPENING INCIDENT

While few people may have heard of Chaparral Steel Corp., the company enjoys a strong reputation as one of the most effective firms in the steel industry. Chaparral was founded as a subsidiary of Texas Industries about thirty years ago and today enjoys annual sales of over $800 million. In earlier times, most steel companies were large, bureaucratic operations like U.S. Steel (now USX) and Bethlehem Steel. However, increased competition from low-cost foreign steel firms—especially those in Japan and Korea—caused major problems for these manufacturers with their high overhead costs and inflexible modes of operation.

These competitive pressures, in turn, led to the formation of so-called mini-mills like Chaparral and Nucor. Because of their size, technology, and flexibility, these firms can maintain much lower production costs and respond more quickly to customer requests. And today, Chaparral is recognized as one of the best of this new breed of steel companies. For example, while most mills produce an average of one ton of steel for every three to five labor-hours, Chaparral produces a ton with less than 1.2 labor-hours.

Since its inception, Chaparral has been led by Gordon Forward. Forward knew that if Chaparral was going to succeed, it would need to be managed in new and different ways. One of the first things he decided to do was to break down the traditional barriers that often exist between management and labor. Thus, he mandated that there would be no reserved parking spaces and no separate dining area for managers. He also insisted that all employees be paid on a salary basis—no time clocks or time sheets for anyone. He also pioneered a concept called "open book management"—any employee can access any document, record, or other piece of information at any time.

Moreover, Forward himself maintains an open-door policy. Any employee can drop by his office at any time, with or without an appointment, and discuss issues or ask questions about what is going on in the company. Forward also believes in trusting everyone in the organization. When the firm recently needed a new rolling mill lathe, it budgeted $1 million for its purchase, then put the purchase decision in the hands of an operating machinist. That machinist, in turn, investigated various

"We encourage people at all organizational levels to have face-to-face dialogues."

—Dennis Beach, Chaparral Executive Vice President

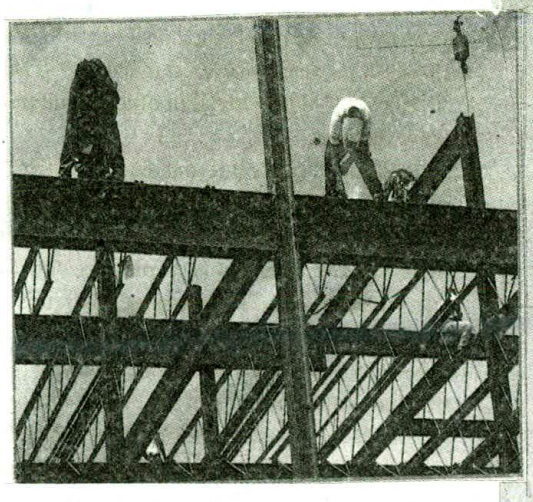
LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Describe the interpersonal nature of organizations.
- Describe the role and importance of communication in the manager's job.
- Identify the basic forms of communication in organizations.
- Discuss informal communication, including its various forms and types.
- Describe how the communication process can be managed to recognize and overcome barriers.

options, visited other mills in Japan and Europe, and then recommended an alternative piece of machinery costing less than half of the budgeted amount.

Forward also recognizes the importance of investing in and rewarding people. Continuous education is an integral part of Chaparral's culture, with a variety of classes being offered all the time. Everyone also participates in the good—and the bad—times. For example, workers have a guaranteed base salary that is adequate, but below the standard market rate. In addition, however, each employee gets a pay-for-performance bonus based on his or her individual achievements. Finally, there are also companywide bonuses paid to everyone on a quarterly basis. These bonuses are tied to overall company performance.[1]



CHAPTER OUTLINE

- **The Interpersonal Nature of Organizations**
  - Interpersonal Dynamics
  - Outcomes of Interpersonal Behaviors
- **Communication and the Manager's Job**
  - A Definition of Communication
  - The Role of Communication in Management
  - The Communication Process
- **Forms of Communication in Organizations**
  - Interpersonal Communication
  - Communication in Networks and Work Teams
  - Organizational Communication
  - Electronic Communication
- **Informal Communication in Organizations**
  - The Grapevine
  - Management by Wandering Around
  - Nonverbal Communication
- **Managing Organizational Communication**
  - Barriers to Communication
  - Improving Communication Effectiveness

Gordon Forward seems to have what is a surprisingly rare combination of communication skills and managerial acumen. Communication is a vital part of managerial work. Indeed, managers around the world agree that communication is one of their most important tasks. It is important for them to communicate with others and thus to convey their vision and goals for the organization. And it is important for others to communicate with them so that they will better understand what's going on in their environment and how they and their organizations can become more effective.

This chapter is the first of two that focuses on interpersonal processes in organizations. We first establish the interpersonal nature of organizations and then discuss communication, one of the most basic forms of interaction among people. We begin by examining communication in the context of the manager's job. We then identify and discuss forms of interpersonal, group, and organizational communication. After discussing informal types of communication, we describe how organizational communication can be effectively managed. In the next chapter, we discuss other elements of interpersonal relations, group and team processes, and conflict.

■ The Interpersonal Nature of Organizations

In Chapter 1, we noted how much of a manager's job involves scheduled and unscheduled meetings, telephone calls, and related activities. Indeed, a great deal of what all managers do involves interacting with other people, both inside and outside the organization. The schedule that follows is a typical day for the president of a Houston-based company, part of a larger firm headquartered in California. He kept a log of his activities for several different days so you could better appreciate the nature of managerial work.

7:45–8:15 A.M. Arrive at work; review hard-copy mail sorted by assistant.
8:15–8:30 A.M. Scan *Wall Street Journal*; read and respond to incoming e-mail.
8:30–9:00 A.M. Meet with labor officials and plant manager to resolve minor labor disputes.
9:00–9:30 A.M. Review internal report; read and respond to incoming e-mail.
9:30–10:00 A.M. Meet with two marketing executives to review advertising campaign; instruct them to fax approvals to advertising agency.
10:00–11:30 A.M. Meet with company executive committee to discuss strategy, budgetary issues, and competition (this committee meets weekly).
11:30–12:00 noon. Send new e-mail; read and respond to incoming e-mails.
12:00–1:15 P.M. Lunch with the financial vice president and two executives from another subsidiary of the parent corporation. Primary topic of discussion is the Houston Rockets basketball team. Place three calls from cellular phone en-route to lunch, and receive one call en-route back to office.
1:15–1:45 P.M. Meet with human resource director and assistant about a recent OSHA inspection; establish a task force to investigate the problems identified and to suggest solutions.
1:45–2:00 P.M. Read and respond to incoming e-mail.
2:00–2:30 P.M. Conference call with four other company presidents.

2:30–3:00 P.M. Meet with financial vice president about a confidential issue that came up at lunch (unscheduled).
3:00–3:30 P.M. Work alone in office; read and respond to incoming e-mail; send new e-mail.
3:30–4:15 P.M. Meet with a group of sales representatives and the company purchasing agent.
4:15–5:30 P.M. Work alone in office.
5:30–7:00 P.M. Play racquetball at nearby athletic club with marketing vice president.

How did this manager spend his time? He spent most of it working, communicating, and interacting with other people. And this compressed daily schedule does not include several other brief telephone calls, brief conversations with his assistant, and brief conversations with other managers. Clearly, interpersonal relations, communication, and group processes are a pervasive part of all organizations and a vital part of all managerial activities.[2]

Interpersonal Dynamics

The nature of interpersonal relations in an organization is as varied as the individual members themselves. At one extreme, interpersonal relations can be personal and positive. This situation occurs when the two parties know each other, have mutual respect and affection, and enjoy interacting with one another. Two managers who have known each other for years, play golf together on weekends, and are close personal friends will likely interact at work in a positive fashion. At the other extreme, interpersonal dynamics can be personal but negative. This situation is most likely when the parties dislike one another, do not have mutual respect, and do not enjoy interacting with one another. Suppose a manager has fought openly for years to block the promotion of another manager within the organization. Over the objections of the first manager, however, the other manager eventually gets promoted to the same rank. When the two of them must interact, it will most likely be in a negative manner.



Interpersonal dynamics are a major part of organizational life. Much of the work people do involves interacting with others—sometimes in positive ways, sometimes in negative ways. These executives are attending a company party at the Boston Children's Museum. While they are obviously enjoying themselves, their interactions will also affect their working relationships after the party has ended.

Most interactions fall between these two extremes because members of the organization interact in a professional way focused primarily on goal accomplishment. The interaction deals with the job at hand, is relatively formal and structured, and is task-directed. Two managers may respect each other's work and recognize the professional competence that each brings to the job. However, they may also have few common interests and little to talk about besides the job they are doing. These different types of interaction may occur between individuals, between groups, or between individuals and groups, and they can change over

time. The two managers in the second scenario, for example, might decide to bury the hatchet and adopt a detached, professional manner. The two managers in the third example could find more common ground than they anticipated and evolve toward a personal and positive interaction.

Outcomes of Interpersonal Behaviors

Several events can happen as a result of interpersonal behaviors. Recall from Chapter 16, for example, that numerous perspectives on motivation suggest that people have social needs. Interpersonal relations in organizations can be a primary source of need satisfaction for many people. For people with a strong need for affiliation, high-quality interpersonal relations can be an important positive element in the workplace. However, when this same person is confronted with poor-quality working relationships, the effect can be just as great in the opposite direction.

Interpersonal relations also serve as a solid basis for social support. Suppose that an employee receives a poor performance evaluation or is denied a promotion. Others in the organization can lend support because they share a common frame of reference—an understanding of the causes and consequences of what happened. Good interpersonal relations throughout an organization can also be a source of synergy. People who support one another and who work well together can accomplish much more than people who do not support one another and who do not work well together. Another outcome, implied earlier, is conflict—people may leave an interpersonal exchange feeling angry or hostile. But a common thread is woven throughout all these outcomes—communication between people in the organization.[3]

MANAGEMENT IMPLICATIONS Managers need to remember that interpersonal dynamics form the crux of most managerial work. Moreover, they should be aware that the outcomes of interpersonal behaviors and interactions can take different forms.

■ Communication and the Manager's Job

As evidenced by the daily log presented earlier, a typical day for a manager includes doing desk work, attending scheduled meetings, placing and receiving telephone calls, reading correspondence, answering correspondence, attending unscheduled meetings, and tours.[4] Most of these activities involve communication. In fact, managers usually spend over half their time on some form of communication. Communication always involves two or more people, so other behavioral processes such as motivation, leadership, and group and team processes all come into play. Top executives must handle communication effectively if they are to be true leaders.

A Definition of Communication

Imagine three managers working in an office building. The first is all alone but is nevertheless yelling for a subordinate to come help. No one appears, but he con-



For the last several years, sales at General Motors' Saturn division have been steadily declining. In an effort to turn things around, GM recently appointed Cynthia Trudell to run Saturn and gave her a mandate to develop new products and boost overall revenues and profits. To help pull this off, Ms. Trudell worked tirelessly to improve communication throughout the company. For example, she held regular meetings with the company's managers and spent a lot of time on the shop floor talking with the operating employees who actually build the cars. Unfortunately for GM, however, Ms. Trudell was so highly regarded that she was recently lured away to run a high-tech start-up.

tinues to yell. The second is talking on the telephone to a subordinate, but static on the line causes the subordinate to misunderstand some important numbers being provided by the manager. As a result, the subordinate sends fifteen hundred crates of eggs to 150 Fifth Street, when he should have sent 150 crates of eggs to 1500 Fifteenth Street. The third manager is talking in her office with a subordinate who clearly hears and understands what is being said. Each of these managers is attempting to communicate but with different results.

Communication is the process of transmitting information from one person to another. Did any of our three managers communicate? The last did and the first did not. How about the second? In fact, she did communicate. She transmitted information and information was received. The problem was that the message transmitted and the message received were not the same. The words spoken by the manager were distorted by static and noise. **Effective communication**, then, is the process of sending a message in such a way that the message received is as close in meaning as possible to the message intended. Although the second manager engaged in communication, it was not effective.

communication The process of transmitting information from one person to another

effective communication The process of sending a message in such a way that the message received is as close in meaning as possible to the message intended

Our definition of effective communication is based on the ideas of meaning and consistency of meaning. Meaning is the idea that the individual who initiates the communication exchange wishes to convey. In effective communication, the meaning is transmitted in such a way that the receiving person understands it. For example, consider the following messages:

1. The high today will be only 40 degrees.
2. It will be cold today.
3. Ceteris paribus
4. Xn1gp bo5cz4ik ab19

You probably understand the meaning of the first statement. The second statement may seem clear at first, but it is somewhat less clear than the first statement because cold is a relative condition and the word can mean different things to different people. Fewer still understand the third statement because it is written in Latin. None of you understands the last statement because it is written in a secret code that your author developed as a child.

The Role of Communication in Management

We noted earlier the variety of activities that fill a manager's day. Meetings, telephone calls, and correspondence are all necessary parts of every manager's job—and all clearly involve communication. On a typical Monday, Nolan Archibald, CEO of Black & Decker, attended five scheduled meetings and two unscheduled meetings; had fifteen telephone conversations; received and/or sent over one hundred e-mails plus twenty-nine letters, memos, and reports; and dictated ten letters.

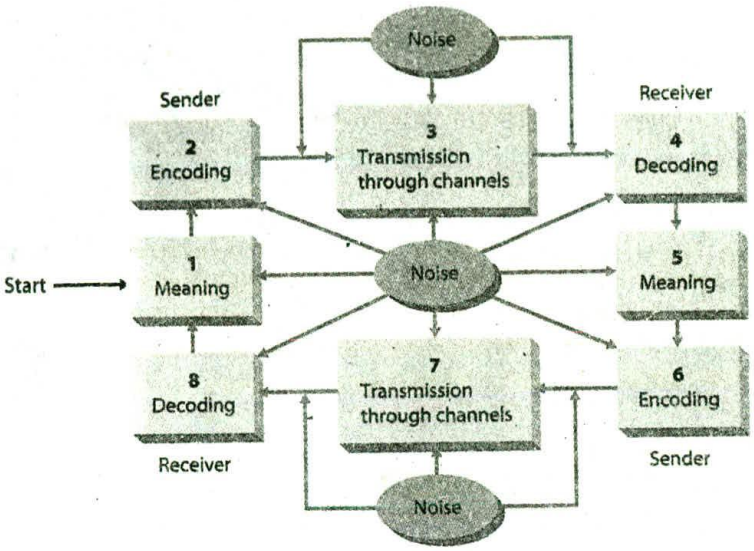
To understand better the link between communication and management, recall the variety of roles that managers must fill. Each of the ten basic managerial roles discussed in Chapter 1 (see Table 1.2) would be impossible to fill without communication.[5] Interpersonal roles involve interacting with supervisors, subordinates, peers, and others outside the organization. Decisional roles require managers to seek out information to use in making decisions and then to communicate those decisions to others. Informational roles focus specifically on the acquiring and disseminating of information.

Communication also relates directly to the basic management functions of planning, organizing, leading, and controlling. Environmental scanning, integrating planning-time horizons, and decision making, for example, all necessitate communication. Delegation, coordination, and organization change and development also entail communication. Developing reward systems and interacting with subordinates as part of the leading function would be impossible without some form of communication. And communication is essential to establishing standards, monitoring performance, and taking corrective actions as part of control. Clearly, then, communication is a pervasive part of almost all managerial activities.[6]

The Communication Process

Figure 18.1 illustrates how communication generally takes place between people. The process of communication begins when one person (the sender) wants to transmit a fact, idea, opinion, or other information to someone else (the receiver). This fact, idea, or opinion has meaning to the sender, whether it be simple and concrete, or complex and abstract. For example, Linda Porter, a marketing representative at Canon, recently landed a new account and wanted to tell her boss about it. This fact and her motivation to tell her boss represented meaning.

The next step is to encode the meaning into a form appropriate to the situation. The encoding might take the form of words, facial expressions, gestures, or even artistic expressions and physical actions. For example, the Canon representative might have said, "I just landed the Acme account," "We just got some good



The numbers indicate the sequence in which steps take place.

Figure 18.1

The Communication Process

As the figure shows, noise can disrupt the communication process at any step. Managers must therefore understand that a conversation in the next office, a fax machine out of paper, and the receiver's worries may all thwart the manager's best attempts to communicate.

news from Acme," "I just spoiled Xerox's day," "Acme just made the right decision," or any number of other things. She actually chose the second message. Clearly, the encoding process is influenced by the content of the message, the familiarity of sender and receiver, and other situational factors.

After the message has been encoded, it is transmitted through the appropriate channel or medium. The channel by which the present encoded message is being transmitted to you is the printed page. Common channels in organizations include meetings, e-mail, memos, letters, reports, and telephone calls. Linda Porter might have written her boss a note, sent him an e-mail, called him on the telephone, or dropped by his office to convey the news. Because both she and her boss were out of the office when she got the news, she called and left a message for him on his voice mail.

After the message is received, it is decoded back into a form that has meaning for the receiver. As noted earlier, the consistency of this meaning can vary dramatically. Upon hearing about the Acme deal, the sales manager at Canon might have thought, "This'll mean a big promotion for both of us," "This is great news for the company," or "She's blowing her own horn too much again." His actual feelings were closest to the second statement. In many cases, the meaning prompts a response, and the cycle is continued when a new message is sent by the same steps back to the original sender. The manager might have called the sales representative to offer congratulations, written her a personal note of praise, offered praise in an e-mail, or sent a formal letter of acknowledgment. Linda's boss wrote her a personal note.

"Noise" may disrupt communication anywhere along the way. Noise can be the sound of someone coughing, a truck driving by, or two people talking close at

hand. It can also include disruptions such as a letter being lost in the mail, a telephone line going dead, an e-mail getting misrouted or infected with a virus, or one of the participants in a conversation being called away before the communication process is completed. If the note written by Linda's boss had gotten lost, she might have felt unappreciated. As it was, his actions positively reinforced not only her efforts at Acme but also her effort to keep him informed.

MANAGEMENT IMPLICATIONS Managers must clearly understand and appreciate the differences between communication and effective communication and the pervasive role of communication in their work. They should also be familiar with the basic communication process as a mechanism for making their communication more effective. Learning about this process also allows them to understand better why communication mistakes sometimes occur.

■ Forms of Communication in Organizations

Managers need to understand several kinds of communication that are common in organizations today. These include interpersonal communication, communication in networks and teams, organizational communication, and electronic communication.

Interpersonal Communication

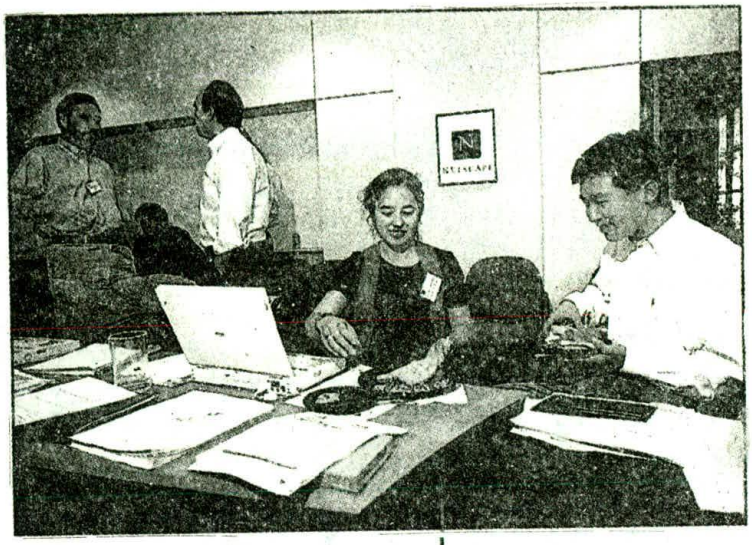
Interpersonal communication generally takes one of two forms, oral and written. As we will see, each has clear strengths and weaknesses.

oral communication Face-to-face conversations, group discussions, telephone calls, and other situations in which the spoken word is used to express meaning

Oral Communication **Oral communication** takes place in face-to-face conversations, group discussions, telephone calls, and other situations in which the spoken word is used to express meaning. Henry Mintzberg demonstrated the importance of oral communication when he found that most managers spend between 50 and 90 percent of their time talking to people.[7] Oral communication is so prevalent for several reasons. The primary advantage of oral communication is that it promotes prompt feedback and interchange in the form of verbal questions or agreement, facial expressions, and gestures. Oral communication is also easy (all the sender needs to do is talk), and it can be done with little preparation (though careful preparation is advisable in certain situations). The sender does not need pencil and paper, keyboard, or other equipment. In one survey, 55 percent of the executives sampled felt that their own written communication skills were fair or poor, so they chose oral communication to avoid embarrassment![8]

However, oral communication also has drawbacks. It may suffer from problems of inaccuracy if the speaker chooses the wrong words to convey meaning or leaves out pertinent details, if noise disrupts the process, or if the receiver forgets part of the message. In a two-way discussion, there is seldom time for a thoughtful, considered response or for introducing many new facts, and there is no permanent record of what has been said. In addition, although most managers are comfortable talking to people individually or in small groups, fewer enjoy speaking to larger audiences

Written Communication "Putting it in writing" in a letter, report, memorandum, hand-written note, or e-mail can solve many of the problems inherent in oral communication. Nevertheless, and perhaps surprisingly, **written communication** is not as common as one might imagine, nor is it a mode of communication much respected by managers. One sample of managers indicated that only 13 percent of the mail they received was of immediate use to them.[10] Over 80 percent of the managers who responded to another survey indicated that the written communication they received was of fair or poor quality.[11]



People communicate with one another in a variety of ways and in many different settings. Consider this team of Netscape employees. They are using oral communication as they talk while they eat lunch. They are also using written communication from the papers stacked on the table and electronic communication in the form of e-mail. Moreover, they are using nonverbal communication with their body language and facial expressions.

written communication Memos, letters, reports, notes, and other methods in which the written word is used to transmit meaning

The biggest single drawback of traditional forms of written communication is that it inhibits feedback and interchange. When one manager sends another manager a letter, it must be written or dictated, typed, mailed, received, routed, opened, and read. If there is a misunderstanding, it may take several days for it to be recognized, let alone rectified. While the use of e-mail is, of course, much faster, both sender and receiver must still have access to a computer and the receiver must open and read the message for it to actually be received. A phone call could settle the whole matter in just a few minutes. Thus, written communication often inhibits feedback and interchange and is usually more difficult and time consuming than oral communication.

Of course, written communication offers some advantages. It is often quite accurate and provides a permanent record of the exchange. The sender can take the time to collect and assimilate the information and can draft and revise it before it is transmitted. The receiver can take the time to read it carefully and can refer to it repeatedly, as needed. For these reasons, written communication is generally preferable when important details are involved. At times it is important to one or both parties to have a written record available as evidence of exactly what took place. Julie Regan, founder of Toucan-Do, an importing company based in Honolulu, relies heavily on formal business letters in establishing contacts and buying merchandise from vendors in Southeast Asia. She believes that such letters give her an opportunity to think carefully about what she wants to say, to tailor her message to each individual, and to avoid misunderstandings later.

Choosing the Right Form Which form of interpersonal communication should the manager use? The best medium will be determined by the situation. Oral communication or e-mail is often preferred when the message is personal, nonroutine, and brief. More formal written communication is usually best when the message is more impersonal, routine, and longer. The manager can also combine media to capitalize on the advantages of each. For example, a quick telephone call to set up

a meeting is easy and gets an immediate response. Following up the call with a reminder e-mail or handwritten note helps ensure that the recipient will remember the meeting, and it provides a record of the meeting having been called. Electronic communication, discussed more fully later, blurs the differences between oral and written communication and can help each be more effective.

Communication in Networks and Work Teams

communication network
The pattern through which the members of a group or team communicate

While communication among team members in an organization is clearly interpersonal in nature, substantial research also focuses specifically on how people in networks and work teams communicate with one another. A **communication network** is the pattern through which the members of a group or team communicate. Researchers studying group dynamics have discovered several typical networks in groups and teams consisting of three, four, and five members. Representative networks among members of five-member teams are shown in Figure 18.2.[12]

In the wheel pattern, all communication flows through one central person who is probably the group's leader. In a sense the wheel is the most centralized network because one person receives and disseminates all information. The Y pattern is slightly less centralized—two persons are close to the center. The chain offers a more even flow of information among members, although two people (those at each end) interact with only one other person. This path is closed in the circle pattern. Finally, the all-channel network, the most decentralized, allows a free flow of information among all group members. Everyone participates equally, and the group's leader, if there is one, is not likely to have excessive power.

Research conducted on networks suggests some interesting connections between the type of network and group performance. For example, when the group's task is relatively simple and routine, centralized networks tend to perform with greatest efficiency and accuracy. The dominant leader facilitates performance by coordinating the flow of information. When a group of accounting clerks is logging incoming invoices and distributing them for payment, for example, one centralized leader can coordinate tasks efficiently. When the task is complex and nonroutine, such as making a major decision about organizational strategy, decentralized networks tend to be most effective because open channels of communication per-

Figure 18.2

Types of Communication Networks

Research on communication networks has identified five basic networks for five-person groups. These networks vary in terms of information flow, position of the leader, and effectiveness for different types of tasks. Managers might strive to create centralized networks when group tasks are simple and routine. Alternatively, managers can foster decentralized groups when group tasks are complex and nonroutine.





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mit more interaction and a more efficient sharing of relevant information. Managers should recognize the effects of communication networks on group and organizational performance and should try to structure networks appropriately.

Organizational Communication

Still other forms of communication in organizations is that which flows among and between organizational units or groups. Each of these involves oral or written communication, but each also extends to broad patterns of communication across the organization.[13] As shown in Figure 18.3, two of these forms of communication follow vertical and horizontal links in the organization. As discussed in *Working with Diversity*, organizational communication is increasingly spanning international boundaries.

Vertical Communication **Vertical communication** is communication that flows up and down the organization, usually along formal reporting lines—that is, it is the communication that takes place between managers and their superiors

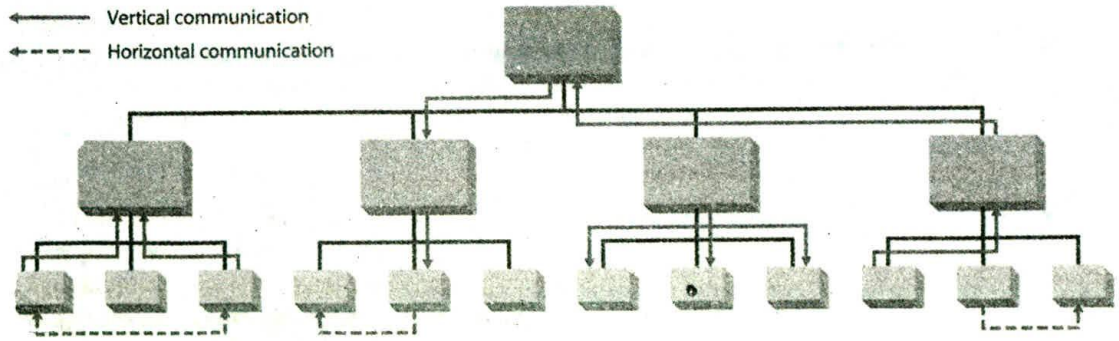
Vertical communication is communication that flows up and down the organizational hierarchy, usually along formal reporting channels involving supervisors and subordinates. In some organizational settings, generally those characterized by trust and openness, anyone can feel free to talk to others several levels higher or lower in the organization. But in other cases, such as the one shown here, individuals who bypass the formal chain of command can create serious problems for themselves. This result usually relates to a feeling of insecurity and/or strong needs for power and control on the part of those who may feel bypassed.

vertical communication Communication that flows up and down the organization, usually along formal reporting lines; it takes place between managers and their subordinates and may involve several different levels of the organization

Figure 18.3

Formal Communication in Organizations

Formal communication in organizations follows official reporting relationships and/or prescribed channels. For example, vertical communication, shown here with dashed lines, flows between levels in the organization and involves subordinates and their managers. Horizontal communication flows between people at the same level and is usually used to facilitate coordination.



WORKING WITH DIVERSITY

SHARING THE WORKLOAD WITH COLLEAGUES IN OTHER COUNTRIES

When employees in Caltex Petroleum's Singapore headquarters work with colleagues in accounting or web site management, they have to stop and think whether to call Manila, where the accounting department is located, or South Africa, where web development is located. Caltex, a joint venture between Texaco and Chevron, operates a chain of gasoline stations across Southeast Asia and Africa and in countries between. The company was once based in Dallas but moved the main office to Singapore to be closer to its main markets. Thanks to telecommunications technology, Caltex can open an office wherever it finds an expert workforce and keep employees linked horizontally and vertically by phone, fax, and—most frequently—e-mail.

Caltex is in the vanguard of a movement to move selected positions out of higher-cost countries (such as the United States and some European countries) and into lower-cost nations (such as Ireland, Jamaica, India, and the Philippines). By hiring skilled, English-speaking employees for software development, customer service support, clerical activities, and other jobs, employers can save 30 percent or more on labor costs, gain access to a larger labor pool, and take advantage of time differences to keep work flowing virtually around the clock.

Citigroup and Microsoft are just two of a growing number of global firms that have opened software outposts in Ireland, Motorola and Bell Labs both operate research centers in Bangalore, and General Electric Capital has a customer service call center in India employing one thousand representatives. General Electric is so happy with the integration of this workforce that it is opening more offices in India to handle payroll and other functions.

In this Internet age, countries must have a strong telecommunications infrastructure to attract the interest of multinational companies. U.S.-based companies such as Brigade are flocking to ready-wired high-tech office parks in India, where they can set up shop quickly and hire computer-savvy locals to work on customer service projects for Compaq and other clients. As these firms recognize, e-mail shrinks the time and distance between employees in far-flung offices while facilitating communication in every direction.

As technology and communication improve, we are scattering centers of excellence around the world.

*—William Pfluger, general manager of Caltex's accounting division in Manila**

Reference: Mark Clifford and Manjeet Kripalani, "Different Countries, Adjoining Cubicles," *Business Week*, August 28, 2000, pp. 182–184 (*quote on p. 182).

and subordinates. Vertical communication may involve only two people, or it may flow through several different organizational levels. A common perspective on vertical communication that exists in some organizations is illustrated in the cartoon.

Upward communication consists of messages from subordinates to superiors. This flow is usually from subordinates to their direct superior, then to that person's direct superior, and so on, up the hierarchy. Occasionally, a message might bypass a particular superior. The typical content of upward communication is requests, information that the lower-level manager thinks is of importance to the higher-level manager, responses to requests from the higher-level manager, suggestions, complaints, and financial information. Research has shown that upward communication is more subject to distortion than is downward communication. Subordinates are likely to withhold or distort information that makes them look bad. The greater the degree of difference in status between superior and subordinate and the greater the degree of distrust, the more likely the subordinate is to suppress or distort information.[14] For

example, subordinates might choose to withhold information about problems from their boss if they thought the news would make him angry and if they thought they could solve the problem themselves without his ever knowing about it.

Downward communication occurs when information flows down the hierarchy from superiors to subordinates. The typical content of these messages is directives on how something is to be done, the assignment of new responsibilities, performance feedback, and general information that the higher-level manager thinks will be of value to the lower-level manager. Vertical communication can, and usually should, be two-way in nature; that is, give-and-take communication with active feedback is generally likely to be more effective than one-way communication.[15]

Horizontal Communication Whereas vertical communication involves a superior and a subordinate, **horizontal communication** involves colleagues and peers at the same level of the organization. For example, an operations manager might communicate to a marketing manager that inventory levels are running low and that projected delivery dates should be extended by two weeks. Horizontal communication probably occurs more among managers than among nonmanagers.

horizontal communication Communication that flows laterally within the organization; it involves colleagues and peers at the same level of the organization and may involve individuals from several different organizational units

This type of communication serves several purposes.[16] It facilitates coordination among interdependent units. For example, a manager at Motorola was once researching the strategies of Japanese semiconductor firms in Europe. He found a great deal of information that was relevant to his assignment. He also uncovered some additional information that was potentially important to another department, so he passed it along to a colleague in that department, who used it to improve his own operations. Horizontal communication can also be used for joint problem solving, as when two plant managers at Northrup Grumman got together to work out a new method to improve productivity. Finally, horizontal communication plays a major role in work teams with members drawn from several departments.

Electronic Communication

Finally, electronic communication has recently taken on much greater importance in organizations. Both formal information systems and personal information technology have reshaped how managers communicate with one another. *Managing in an e-Business World* clearly amplifies this point.

Formal Information Systems Another increasingly important method of organizational communication is information systems. This method is accomplished by a managerial approach or an operational approach. The managerial approach involves the creation of a position usually called the chief information officer, or CIO. General Mills, Xerox, and Burlington Industries have all created such a position. The CIO is responsible for determining the information-processing needs and requirements of the organization and then putting in place systems that facilitate smooth and efficient organizational communication.

The operational approach, often part of the CIO's efforts, involves the creation of one or more formal information systems linking all relevant managers, departments, and facilities in the organization. In the absence of such a system, a marketing manager, for example, may need to call a warehouse manager to find out

MANAGING IN AN *e*-BUSINESS WORLD

Cisco Casts Its Communications Net Wider

Many companies use their web sites to communicate with customers. However, Cisco Systems casts its communications net even wider, using the Internet to facilitate speedy communication among employees, suppliers, distributors, and other business partners as well as with customers. Using the Web for internal and external communication is a natural step for a company that makes switchers and other electronic equipment to power the Internet.

Cisco employees log onto the company's internal web site an average of thirty times every day to tap on-line training programs, read announcements, upload expense reports, and check or change benefits plans. Managers do all that and more via the Web: they file employee performance reviews, check the latest departmental sales figures, and search for competitive data.

Suppliers and distributors benefit from easy access to the latest details about Cisco orders, sales, and specifications. Singapore-based supplier Flextronics International, for example, can instantly find out what it should gear up to manufacture by looking at a special section of Cisco's web site. Based on information Cisco posts about orders just received, Flextronics can quickly build and ship the needed products. Everybody benefits: Flextronics knows exactly what to produce and when, customers receive speedy delivery of ordered products, and Cisco keeps costs low while satisfying customers.

Customer service gets a big boost from Cisco's web-based communication. Many big commercial customers, such as the Hannaford Brothers grocery chain, like the convenience of checking the technical support part of Cisco's site to diagnose their network problems or locate technical update details. In fact, 85 percent of customers seeking technical support for Cisco products go to the web site for answers instead of calling the company—a big savings for Cisco. Still, Cisco's technical experts receive e-mail alerts about any problem a customer hasn't been able to fix after an hour of looking for information on the web site. At that point, Cisco's experts resort to non-Internet technology: they pick up the phone and call to see what they can do to help the customer solve the problem.

I can't remember the last time I called Cisco.

*—Ed Taggart, network manager for Cisco client Hannaford Brothers**

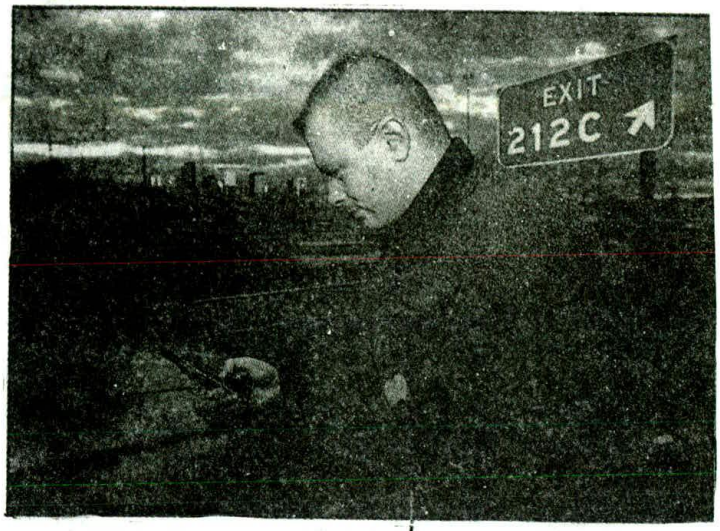
Reference: Scott Thurm, "Eating Their Own Dog Food," *Wall Street Journal*, April 19, 2000, pp. B1, B4 (*quote on p. B4).

how much of a particular product is in stock before promising shipping dates to a customer. An effective formal information system allows the marketing manager to get the information more quickly, and probably more accurately, by plugging directly into a computerized information system. Because of the increased emphasis and importance of these kinds of information systems, we cover them in detail in Chapter 22.

Personal Electronic Technology In recent years, the nature of organizational communication has changed dramatically, mainly because of breakthroughs in personal electronic communication technology, and the future promises even more change. Electronic typewriters and photocopying machines were early breakthroughs. The photocopier, for example, makes it possible for a manager to have a typed report distributed to large numbers of other people in an extremely short time. Personal computers have accelerated the process even more. E-mail networks, the

Internet, and corporate intranets promise to carry communication technology even further in the years to come.

It is now possible to have teleconferences in which managers stay at their own locations (such as offices in different cities) but are seen on television or computer monitors as they "meet." A manager in New York can keyboard a letter or memorandum at her personal computer, point and click with a mouse, and have it delivered to hundreds or even thousands of colleagues around the world in a matter of seconds. Highly detailed information can be retrieved with ease from large electronic databanks. This technology has given rise to a new version of an old work arrangement—telecommuting is the label given to a new electronic cottage industry. In a cottage industry, people work at home (in their "cottages") and periodically bring the product of their labor to the company. In telecommuting, people work at home on their computers and transmit their work to the company by means of telephone or cable modems.



Electronic communication technology is profoundly changing the way people work and live. For example, Paul Webster was recently traveling to Phoenix on business. Anticipating travel delays, he used his cell phone to call www.travel.com and get an update on both weather and traffic conditions. After learning that the exit he had planned to take was closed, he was quickly able to obtain step-by-step directions for an alternative route.

Cellular phones and fax machines have made it even easier for managers to communicate with one another. Many now use cellular phones to make calls while commuting to and from work and carry them in briefcases so they can receive calls while at lunch. Fax machines make it easy for people to use written communication media and get rapid feedback. And new personal computing devices such as Palm Pilots are further revolutionizing how people communicate with one another.

Psychologists, however, are beginning to associate some problems with these communication advances. For one thing, managers who are seldom in their "real" offices are likely to fall behind in their fields and to be victimized by organizational politics because they are not present to keep in touch with what's going on and to protect themselves. They drop out of the organizational grapevine and miss much of the informal communication that takes place. The use of electronic communication at the expense of face-to-face meetings and conversations makes it hard to build a strong culture, develop solid working relationships, and create a mutually supportive atmosphere of trust and cooperativeness.[17] Finally, electronic communication is also opening up new avenues for dysfunctional employee behavior such as the passing of lewd or offensive materials to others. For example, the New York Times Company recently fired almost 10 percent of its workers at one of its branch offices for sending inappropriate e-mails at work.[18]

MANAGEMENT IMPLICATIONS Managers should realize that they have more modes of communication available to them today than at any time in history. Interpersonal, team-based, organizational, and electronic communication channels make it easier than ever before to keep in contact with others and to procure

and distribute information. However, managers should also be aware of pitfalls that can occur as a result of using various specific communication methods.

■ Informal Communication in Organizations

The aforementioned forms of organizational communication all represent planned, formal communication mechanisms. In many cases, however, much of the communication that takes place in an organization transcends these formal channels and instead follows any of several informal methods. Figure 18.4 illustrates numerous examples of informal communication. Common forms of informal communication in organizations include the grapevine, management by wandering around, and nonverbal communication.

The Grapevine

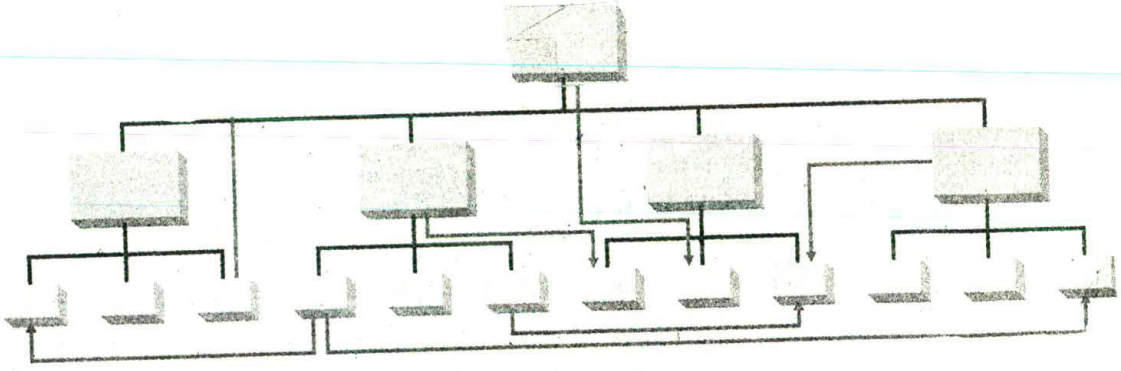
grapevine An informal communication network that can permeate an entire organization

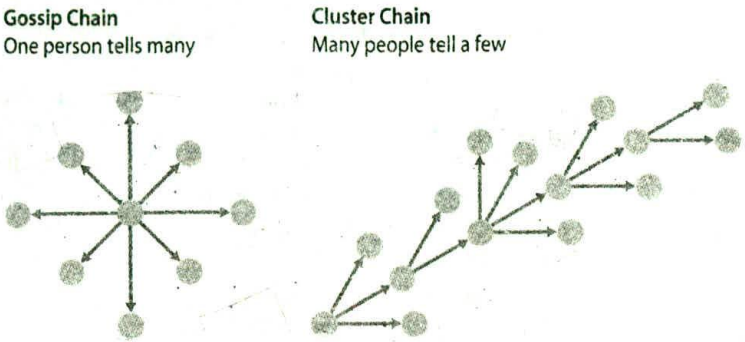
The **grapevine** is an informal communication network that can permeate an entire organization. Grapevines are found in all organizations except the very smallest, but they do not always follow the same patterns as, nor do they necessarily coincide with, formal channels of authority and communication. Research has identified several kinds of grapevines.[19] The two most common are illustrated in Figure 18.5. The gossip chain occurs when one person spreads the message to many other people. Each one, in turn, may either keep the information confidential or pass it on to others. The gossip chain is likely to carry personal information. The other common grapevine is the cluster chain, in which one person passes the information to a selected few individuals. Some of the receivers pass the information to a few other individuals; the rest keep it to themselves.

Figure 18.4

Informal Communication in Organizations

Informal communication in organizations may or may not follow official reporting relationships and/or prescribed channels. It may cross different levels and different departments or work units, and may or may not have anything to do with official organizational business.





Source: Adapted from *Human Behavior at Work: Organizational Behavior*, Eighth Edition, by Keith Davis and John W. Newstrom. Copyright © 1989 by McGraw-Hill. Reprinted by permission of The McGraw-Hill Companies.

Figure 18.5

Common Grapevine Chains Found in Organizations

The two most common grapevine chains in organizations are the gossip chain (in which one person communicates messages to many others) and the cluster chain (in which many people pass messages to a few others).

There is some disagreement about the accuracy of the information carried by the grapevine, but research is increasingly finding it to be fairly accurate, especially when the information is based on fact rather than speculation. One recent study found that the grapevine may be between 75 percent and 95 percent accurate.[20] That same study also found that informal communication is increasing in many organizations for two basic reasons. One contributing factor is the recent increase in merger, acquisition, and takeover activity. Because such activity can greatly affect the people within an organization, it follows that they may spend more time talking about it.[21] The second contributing factor is that, as more and more corporations move facilities from inner cities to suburbs, employees tend to talk less and less to others outside the organization and more and more to each other.

Attempts to eliminate the grapevine are fruitless, but fortunately the manager does have some control over it. By maintaining open channels of communication and responding vigorously to inaccurate information, the manager can minimize the damage the grapevine can do. The grapevine can actually be an asset. By learning who the key people in the grapevine are, for example, the manager can partially control the information they receive and use the grapevine to sound out employee reactions to new ideas such as a change in human resource policies or benefit packages. The manager can also get valuable information from the grapevine and use it to improve decision making.[22]

Management by Wandering Around

Another increasingly popular form of informal communication is called **management by wandering around**.[23] The basic idea is that some managers keep in touch with what's going on by wandering around and talking with people—immediate subordinates, subordinates far down the organizational hierarchy, delivery people, customers, or anyone else who is involved with the company in some way. Bill Marriott, for example, frequently visits the kitchens, loading docks, and custodial work areas whenever he tours a Marriott hotel. He claims that by talking with employees throughout the hotel, he gets new ideas and has a better feel for the entire company.

management by wandering around An approach to communication that involves the manager literally wandering around and having spontaneous conversations with others who are involved with the company in some way

A related form of organizational communication that really has no specific term is the informal interchange that takes place outside the normal work setting. Employees attending the company picnic, playing on the company softball team, or taking fishing trips together will almost always spend part of their time talking about work. For example, Texas Instruments engineers at the Lewisville, Texas, facility often frequent a local bar in town after work. On any given evening, they talk about the Dallas Cowboys, the newest government contract received by the company, the weather, their boss, the company's stock price, local politics, and problems at work. There is no set agenda, and the key topics of discussion vary from group to group and from day to day. Still, the social gatherings serve an important role. They promote a strong culture and enhance understanding of how the organization works.

Nonverbal Communication

nonverbal communication Any communication exchange that does not use words or that uses words to carry more meaning than the strict definition of the words themselves

Nonverbal communication is any communication exchange that does not use words or that uses words to carry more meaning than the strict definition of the words themselves. Nonverbal communication is a powerful but little understood form of communication in organizations. It often relies on facial expression, body movements, physical contact, and gestures. One study found that as much as 55 percent of the content of a message is transmitted by facial expression and body posture and that another 38 percent derives from inflection and tone. Words themselves account for only 7 percent of the content of the message.[24]

Research has identified three kinds of nonverbal communication practiced by managers—images, settings, and body language.[25] In the organizational context, images are the kinds of words people elect to use. "Damn the torpedoes, full speed ahead" and "Even though there are some potential hazards, we should proceed with this course of action" may convey the same meaning. Yet the person who uses the first expression may be perceived as a maverick, a courageous hero, an individualist, or a reckless and foolhardy adventurer. The person who uses the second might be described as aggressive, forceful, diligent, or narrow-minded and resistant to change. In short, our choice of words conveys much more than just the strict meaning of the words themselves.

The setting for communication also plays a major role in nonverbal communication. Boundaries, familiarity, the home turf, and other elements of the setting are all important. Much has been written about the symbols of power in organizations. The size and location of an office, the kinds of furniture in the office, and the accessibility of the person in the office all communicate useful information. For example, H. Ross Perot positions his desk so that it is always between him and a visitor. This layout keeps him in charge. When he wants a less formal dialogue, he moves around to the front of the desk and sits beside his visitor. Michael Dell of Dell Computers has his desk facing a side window so that when he turns around to greet a visitor, there is never anything between them.

A third form of nonverbal communication is body language.[26] The distance we stand from someone as we speak has meaning. In the United States, standing very close to someone you are talking to generally signals either familiarity or aggression. The English and Germans stand farther apart than Americans do when talk-

ing, whereas the Arabs, Japanese, and Mexicans stand closer together.[27] Eye contact is another effective means of nonverbal communication. For example, prolonged eye contact might suggest either hostility or romantic interest. Other kinds of body language include body and arm movement, pauses in speech, and mode of dress.

The manager should be aware of the importance of nonverbal communication and recognize its potential impact. Giving an employee good news about a reward with the wrong nonverbal cues can destroy the reinforcement value of the reward. Likewise, reprimanding an employee but providing inconsistent nonverbal cues can limit the effectiveness of the sanctions. The tone of the message, where and how the message is delivered, facial expressions, and gestures can all amplify or weaken the message, or change the message altogether.

MANAGEMENT IMPLICATIONS Managers need to appreciate the power and pervasiveness of informal communication. The grapevine, for example, can be a powerful force with which managers must contend. Management by wandering around can be an effective way of learning. And nonverbal communication can frequently convey a great deal of information.

Managing Organizational Communication

In view of the importance and pervasiveness of communication in organizations, it is vital for managers to understand how to manage the communication process.[28] Managers should understand how to maximize the potential benefits of communication and minimize the potential problems. We begin our discussion of communication management by considering the factors that might disrupt effective communication and how to deal with them.

Barriers to Communication

Several factors may disrupt the communication process or serve as barriers to effective communication.[29] As shown in Table 18.1, these barriers may be divided into two classes: individual and organizational.

Individual Barriers Several individual barriers may disrupt effective communication. One common problem is conflicting or inconsistent signals. A manager is

Individual Barriers	Organizational Barriers
Conflicting or inconsistent cues	Semantics
Credibility about the subject	Status or power differences
Reluctance to communicate	Different perceptions
Poor listening skills	Noise
Predispositions about the subject	Overload

Table 18.1

Barriers to Effective Communication

Numerous barriers can disrupt effective communication. Some of these barriers involve individual characteristics and processes. Others are functions of the organizational context in which communication is taking place.

sending conflicting signals when she says on Monday that things should be done one way but then prescribes an entirely different procedure on Wednesday. Inconsistent signals are being sent by a manager who says that he has an open-door policy and wants his subordinates to drop by but keeps his door closed and becomes irritated whenever someone stops in.

Another barrier is lack of credibility. Credibility problems arise when the sender is not considered a reliable source of information. He may not be trusted or may not be perceived as knowledgeable about the subject at hand. When a politician is caught withholding information or when a manager makes a series of bad decisions, the extent to which they will be listened to and believed thereafter diminishes. In extreme cases, people may talk about something they obviously know little or nothing about.

Some people are simply reluctant to initiate a communication exchange. This reluctance may occur for various reasons. A manager may be reluctant to tell subordinates about an impending budget cut because he knows they will be unhappy about it. Likewise, a subordinate may be reluctant to transmit information upward for fear of reprisal or because he or she feels that such an effort would be futile.

Poor listening habits can be a major barrier to effective communication. Some people are simply poor listeners. When someone is talking to them, they may be daydreaming, looking around, reading, or listening to another conversation. Because they are not concentrating on what is being said, they may not comprehend part or all of the message. They may even think that they are really paying attention, only to realize later that they cannot remember parts of the conversation.

Receivers may also bring certain predispositions to the communication process. They may already have their minds made up, firmly set in a certain way. For example, a manager many have heard that his new boss is unpleasant and hard to work with. When she calls him for an introductory meeting, he may go into that meeting predisposed to dislike her and discount what she has to say.

Organizational Barriers Other barriers to effective communication involve the organizational context in which the communication occurs. Semantics problems arise when words have different meanings for different people. Words and phrases such as "profit," "increased output," and "return on investment" may have positive meanings for managers but less positive meanings for labor.

Communication problems may also arise when people of different power or status try to communicate with each other. The company president may discount a suggestion from an operating employee, thinking, "How can someone at that level help me run my business?" Or when the president inspects a new plant, workers may be reluctant to offer suggestions because of their lower status. The marketing vice president may have more power than the human resource vice president and consequently may not pay much attention to a staffing report submitted by the human resource department.

If people perceive a situation differently, they may have difficulty communicating with one another. When two managers observe that a third manager has not spent much time in her office lately, one may believe that she has been to several important meetings while the other may think she is "hiding out." If they need to

talk about her in some official capacity, problems may arise because one has a positive impression and the other has a negative impression.

Environmental factors may also disrupt effective communication. As mentioned earlier, noise may affect communication in many ways. Similarly, overload may be a problem when the receiver is being sent more information than he or she can handle effectively. As e-mail becomes increasingly common, many managers report getting so many messages each day that they sometimes feel overwhelmed.[30] And when the manager gives a subordinate many projects on which to work and at the same time the subordinate is being told by family and friends to perform activities outside of work, overload may result and communication effectiveness is diminished.

Finally, as businesses become more and more global, different languages can create problems. To counter these problems, some firms are adopting an "official language." For example, when the German chemical firm Hoechst merged with the French firm Rhone-Poulenc, the new company adopted English as its official language. Indeed, English is increasingly becoming the standard business language around the world.[31] *Management Infotech* discusses an interesting communication barrier that has arisen in the U.S. military.

MANAGEMENT INFOTECH

TONE DOWN THE TECHNOLOGY—AND THAT'S AN ORDER

The U.S. military is going back to communication basics. The chairman of the Joint Chiefs of Staff has ordered military personnel to tone down the technology in their electronic slide presentations because the razzle-dazzle is detracting from the message. From noisy sound effects to eye-popping animation and convoluted diagrams, military presentations are so laden with flashy extras that listeners sometimes have difficulty distilling the main ideas.

Formal slide presentations have a long tradition within the U.S. military, where they have been used to update commanders about troop movements. Now jazzy electronic slide presentations have taken the place of static overheads as up-and-coming officers try to impress their superiors by cramming every possible detail into their presentations. Too often, these presentations wind up as a war of graphics, with presenters adding more electronic bells and whistles so they will stand out.

Listeners complain that these electronic slide shows can be endless and mind-numbing—the last reaction a presenter wants when discussing sensitive defense issues or asking for increased funding. In fact, Navy Secretary Richard Danzig wants his briefings submitted in writing so he won't have to sit through presentation after presentation with electronic slide accompaniment.

Because electronic slides are easy and inexpensive to create, military personnel in other countries are starting to use the technology to enliven presentations to their commanders. Meanwhile, electronic slide shows are not disappearing from military briefings throughout the Pentagon, although they are becoming somewhat simpler in response to the growing backlash from the top. And organizations that work with the U.S. military have adopted electronic slide presentations to show they can speak the same graphics language as their audience.

People are not listening to us, because they are spending so much time trying to understand these incredibly complex slides.

*—Louis Caldera, U.S. Secretary of the Army**

Reference: Greg Jaffe, "What's Your Point, Lieutenant? Just Cut to the Pie Charts," *Wall Street Journal*, April 26, 2000, pp. A1, A6 (*quote on p. A1).

Table 18.2

Overcoming Barriers to Communication

Because communication is so important, managers have developed several methods of overcoming barriers to effective communication. Some of these methods involve individual skills, whereas others are based on organizational skills.

Individual Skills	Organizational Skills
Develop good listening skills	Follow up
Encourage two-way communication	Regulate information flows
Be aware of language and meaning	Understand the richness of media
Maintain credibility	
Be sensitive to receiver's perspective	
Be sensitive to sender's perspective	

Improving Communication Effectiveness

Considering how many factors can disrupt communication, it is fortunate that managers can resort to several techniques for improving communication effectiveness.[32] As shown in Table 18.2, these techniques include both individual and organizational skills.

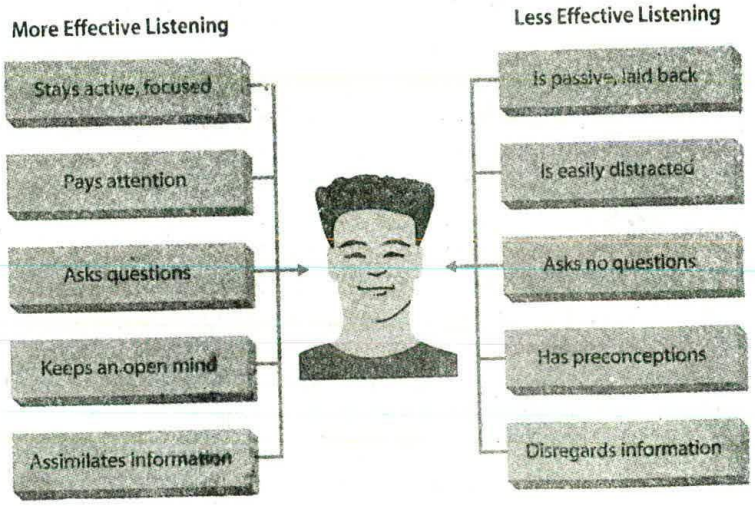
Individual Skills The single most important individual skill for improving communication effectiveness is being a good listener.[33] Being a good listener requires that the individual be prepared to listen, not interrupt the speaker, concentrate on both the words and the meaning being conveyed, be patient, and ask questions as appropriate.[34] So important are good listening skills that companies like Delta, IBM, and Boeing conduct programs to train their managers to be better listeners. Figure 18.6 illustrates the characteristics of poor listeners versus good listeners.

In addition to being a good listener, several other individual skills can also promote effective communication. Feedback, one of the most important, is facilitated by two-way communication. Two-way communication allows the receiver to ask questions, request clarification, and express opinions that let the sender know

Figure 18.6

More and Less Effective Listening Skills

Effective listening skills are a vital part of communication in organizations. There are several barriers that can contribute to poor listening skills by individuals in organizations. Fortunately, there are also several practices for improving listening skills.



whether he or she has been understood. In general, the more complicated the message, the more useful is two-way communication. In addition, the sender should be aware of the meanings that different receivers might attach to various words. For example, when addressing stockholders, a manager might use the word "profits" often. When addressing labor leaders, however, she may choose to use "profits" less often.

Furthermore, the sender should try to maintain credibility. Maintaining credibility can be accomplished by not pretending to be an expert when one is not, by "doing one's homework" and checking facts, and by otherwise being as accurate and honest as possible. The sender should also try to be sensitive to the receiver's perspective. A manager who must tell a subordinate that she has not been recommended for a promotion should recognize that the subordinate will be frustrated and unhappy. The content of the message and its method of delivery should be chosen accordingly. The manager should be primed to accept a reasonable degree of hostility and bitterness without getting angry in return.[35] Finally, the receiver should also try to be sensitive to the sender's point of view. Suppose that a manager has just received some bad news—for example, that his position is being eliminated next year. Others should understand that he may be disappointed, angry, or even depressed for a while. Thus, they might make a special effort not to take too much offense if he snaps at them, and they might look for signals that he needs someone to talk to.

Organizational Skills Three useful organizational skills can also enhance communication effectiveness for both the sender and the receiver—following up, regulating information flow, and understanding the richness of different media. Following up simply involves checking at a later time to be sure that a message has been received and understood. After a manager mails a report to a colleague, she might call a few days later to make sure the report has arrived. If it has, the manager might ask whether the colleague has any questions about it. Regulating information flow means that the sender or receiver takes steps to ensure that overload does not occur.

For the sender, avoiding overload could mean not passing too much information through the system at one time. For the receiver, it might mean calling attention to the fact that he is being asked to do too many tasks at once. Many managers limit the influx of information by periodically weeding out the list of journals and routine reports they receive, or they train a secretary to screen phone calls and visitors. Both senders and recievers should also understand the richness associated with different media. When a manager is going to lay off a subordinate temporarily, the message should be delivered in person. A face-to-face channel of communication gives the manager an opportunity to explain the situation and answer questions. When the purpose of the message is to grant a pay increase, written communication may be appropriate because it can be more objective and precise. The manager could then follow up the written notice with personal congratulations.

MANAGEMENT IMPLICATIONS Managers need to be aware of the many forces that can disrupt communication in their organizations. Just as important, they should also be aware of how to overcome those barriers and use these techniques and methods as much as possible.

Summary of Key Points

Communication is the process of transmitting information from one person to another. Effective communication is the process of sending a message so that the message received is as close in meaning as possible to the message intended.

Communication is a pervasive and important part of the manager's world. The communication process consists of a sender encoding meaning and transmitting it to one or more receivers, who receive the message and decode it into meaning. In two-way communication, the process continues with the roles reversed. Noise can disrupt any part of the overall process.

Several forms of organizational communication exist. Interpersonal communication focuses on communication among a small number of people. Two important forms of interpersonal communication, oral and written, offer unique advantages and disadvantages. Thus, the manager should weigh the pros and cons of each when choosing a medium for communication. Communication networks are recurring patterns of communication among members of a group or work team. Vertical communication between superiors and subordinates may flow upward or downward. Horizontal communication involves peers and colleagues at the same level in the organization. Organizations also use information systems to manage communication. Electronic communications is having a profound effect on managerial and organizational communication.

There is also a great deal of informal communication in organizations. The grapevine is the informal communication network among people in an organization. Management by wandering around is also a popular informal method of communication. Nonverbal communication includes facial expressions, body movement, physical contact, gestures, and inflection and tone.

Managing the communication process necessitates recognizing the barriers to effective communication and understanding how to overcome them. Barriers can be identified at both the individual and organizational level. Likewise, both individual and organizational skills can be used to overcome these barriers.

Discussion Questions

Questions for Review

1. Define communication. What are the components of the communication process?
2. Which form of interpersonal communication is best for long-term retention? Why? Which form is best for getting across subtle nuances of meaning? Why?
3. Describe three different communication networks. Which type of network seems to describe the grapevine most accurately? Why?
4. What are the informal methods of communication? Identify five examples of nonverbal communication that you have recently observed.

Questions for Analysis

5. Is it possible for an organization to function without communication? Why or why not?
6. At what points in the communication process can problems occur? Give examples of communication problems and indicate how they might be prevented or alleviated.

7. In terms of the barriers most likely to be encountered, what are the differences between horizontal and vertical communication in an organization? How might a formal information system be designed to reduce such barriers?

Questions for Application

8. What forms of communication have you experienced today? What form of communication is involved in a face-to-face conversation with a friend? A telephone call from a customer? A traffic light or crossing signal? A picture of a cigarette in a circle with a slash across it? An area around machinery defined by a yellow line painted on the floor?
9. Interview a local manager to determine what forms of communication are used in his or her organization. Arrange to observe that manager for a couple of hours. What forms of communication did you observe?
10. How are electronic communication devices likely to affect the communication process in the future? Why? Interview someone from a local organization who uses electronic communications to see if she or he feels as you do.

BUILDING EFFECTIVE *technical* SKILLS

Exercise Overview

Technical skills are the skills necessary to perform the work of the organization. This exercise will help you develop and apply technical skills involving the Internet and its potential for gathering information relevant to making important decisions.

Exercise Task

Assume that you are a manager for a large national retailer. You have been assigned the responsibility for identifying potential locations for the construction of a warehouse and distribution center. The idea behind such a center is that the firm can use its enormous purchasing power to buy many products in bulk quantities at relatively low prices. Individual stores can then order specific quantities they need from the warehouse.

The location will need an abundance of land. The warehouse itself, for example, will occupy more than four square acres of land. In addition, it must be close to railroads and major highways because shipments will be arriving by both rail and trucks, although outbound shipments will be exclusively by truck. Other important variables are that land prices and the cost of living should be relatively low and weather conditions should be mild (to minimize disruptions to shipments).

The firm's general experience is that small to midsize communities work best. Moreover, warehouses are already in place in the western and eastern parts of the United States, so this new one will most likely be in the central or south-central area. Your boss has asked you to identify three or four possible sites.

Exercise Task

With the information above as a framework, do the following:

1. Use the Internet to identify as many as ten possible locations.
2. Using additional information from the Internet, narrow the set of possible locations to three or four.
3. Again using the Internet, find out as much as possible about the potential locations.

BUILDING EFFECTIVE *communication* SKILLS

Exercise Overview

Communication skills refer to a manager's ability to convey ideas and information effectively to others and to receive ideas and information from others effectively. This exercise focuses on the best communication skills needed to convey information best.

Exercise Background

Assume that you are a middle manager for a large electronics firm. People in your organization generally use one of three means for communicating with one another. The most common way is verbal communication, either face to face or by telephone. Electronic mail is also widely used. Finally, a surprisingly large amount of communication is still done with paper, such as memos, reports, or letters.

During the course of a typical day, you receive and send a variety of messages and other communication. You generally use some combination of all the communication methods noted above during the course of any given day. The following is a list of items that you need to communicate today:

1. You must schedule a meeting with five subordinates.
2. You want to congratulate a coworker who just had a baby.
3. You need to reprimand a staff assistant who has been coming in to work late for the last several days.
4. You must inform the warehouse staff that several customers have recently complained because their shipments were not properly packed.
5. You need to schedule a meeting with your boss.
6. You need to announce two promotions.
7. You must fire someone who has been performing poorly for some time.
8. You need to inform several individuals about a set of new government regulations that will soon affect them.
9. You must inform a supplier that your company will soon be cutting back on its purchases because a competing supplier has lowered its prices and you plan to shift more of your business to that supplier.
10. You must resolve a disagreement between two subordinates who both want to take their vacations at the same time.

Exercise Task

Using the information presented above, do the following:

1. Indicate which methods of communication would be appropriate for each situation.
2. Rank-order the methods for each communication situation from best to worst.
3. Compare your rankings with those of a classmate and discuss any differences.

BUILDING EFFECTIVE *time-management* SKILLS

Exercise Overview

Time-management skills refer to the manager's ability to prioritize work, to work efficiently, and to delegate appropriately. This exercise will help you develop your time-management skills as they relate to communication.

Exercise Background

Communication is a vital and necessary part not only of management but our daily lives as well. We benefit when communication takes place in effective ways. But ineffective communication can be a major source of wasted time and energy.

Exercise Task

With this idea as context, do the following:

1. Reflect on your communication for one day. Recall who you talked to, when, for how long, and about what subjects.
2. Do the same for mail you received and mail you sent.
3. Evaluate each communication exchange as being more valuable or less valuable.
4. Estimate how much time you spent on less valuable communication.
5. Decide how you could have either avoided those less valuable communication exchanges or made them more valuable.
6. How much control do we really have over our communication?

CHAPTER CLOSING CASE

COMMUNICATION IS THE REAL THING FOR COCA-COLA

Coca-Cola was in trouble when Douglas Daft became CEO following the brief tenure of M. Douglas Ivester. The previous year, European Union regulators had raided the European offices of Coca-Cola and its bottlers and leveled serious anticompetitive charges against the venerable soft-drink marketer. That same year, the company was hurt by negative publicity when hundreds of people in Belgium complained of headaches and nausea after drinking Coca-Cola beverages. Ultimately, Coca-Cola's products were found to have posed no health threat, but top management's slow response to the scare contributed to the firm's reputation for aggressive, arrogant behavior. This situation so disturbed some company executives that they departed from tradition and submitted a confidential memo criticizing Coca-Cola's actions. To complicate matters, worldwide sales were slowing due to economic woes in some countries, employee morale was lower, and the stock price was lagging.

Clearly, the company had a lot of relationships to repair by the time Daft became CEO. Daft opened a new chapter in Coca-Cola's history by taking a more conciliatory tone in his internal and external communications. Stronger stakeholder relationships, in the CEO's view, would go a long way toward helping polish Coca-Cola's image and protect its 51 percent share of the global market for fizzy soft drinks.

So Daft set out on a goodwill tour designed to improve communication around the world. In Belgium, the CEO met with the regulator who had pursued antitrust charges against Coca-Cola the year before. Daft listened intently as the regulator explained his reasoning and spoke against the company's highly aggressive behavior. Afterward, Daft said that the company had to

stop arguing and start listening when competing in other countries. By strengthening relationships with regulators, Daft hoped to get a better understanding of local rules and, at the same time, put Coca-Cola in a better light.

Daft also met with Italy's top antitrust regulator, who had presided over an investigation that resulted in Coca-Cola paying a $16 million fine for anticompetitive practices. Again, the CEO sought to rebuild relations by asking what the company had done wrong and paying close attention as the regulator spoke his mind. Daft also directed the top Coca-Cola executive in Europe to find ways of working more closely with regulators, smoothing the way for business practices that fit both the company's goals and the European Union's competitive guidelines.

The goodwill tour included meetings and meals with local Coca-Cola managers, which afforded opportunities to talk informally about Daft's vision for the company and his strategies for building bridges to numerous constituencies. The CEO also met with the U.S. ambassador to France, several CEOs of French firms, and numerous Coca-Cola executives around Europe. Back home, Daft made it a point to stay in touch with members of the board and the bottlers who make and distribute Coca-Cola's products. By making contact with so many people inside and outside the organization, Daft was developing a more rounded picture of Coca-Cola's strengths and weaknesses.

Since his initial goodwill tour, Daft has returned to Europe several times to meet with managers, bottlers, and regulators. He has also brought some of his senior U.S. and European managers together in Europe to hear reports on regional results and initiatives. In line with Daft's preference for direct communication, oral presentations are shorter, more to the point, and heavier on recommendations. The CEO is also speeding up decision making, allowing Coca-Cola to bring new products to new and existing markets much faster than before. Knowing that 80 percent of the company's profits are derived from sales outside the United States, Daft is stressing decentralization rather than concentrating functions and power in Coca-Cola's Atlanta headquarters. At the same time, he is signaling his determination to keep the lines of communication open so Coca-Cola gains a new reputation for cooperation throughout the world.

Case Questions

1. Where in the communication process would you recommend that Daft concentrate on making changes?
2. Why would Daft bring U.S. and European executives together to make oral presentations about regional results, rather than asking them to share written reports?
3. Which barriers to communication did Daft seem to be addressing during his goodwill tour?

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Managing Work Groups and Teams

OPENING INCIDENT

Few people have ever heard of a small company called Fastener Supply. The twenty-three-year-old, eighteen-employee company based in Reading, Massachusetts, distributes eighteen thousand different types of metal, rubber, and nylon fasteners—devices used to hold together the parts that comprise everything from automobiles to personal computers to bug zappers. Motorola, Polaroid, and Lucent Technologies are among the company's biggest 350 or so customers.

No one at Fastener Supply believed that the firm had a quality problem. At the same time, however, John Jenkins, the company president, was aware of recent trends and concerns in quality management and knew that his firm needed to be ahead of the industry, not behind it. A small firm like Fastener Supply can really suffer from the loss of only one big customer, so Jenkins decided to be proactive with regard to quality.

An initial quality audit revealed no significant customer complaints. And on a percentage basis, everything seemed to be fine. For example, fewer than 1 percent of the firm's fasteners failed to meet customer standards. But in absolute terms, the numbers didn't look quite as good. Because the firm ships over seventy million products a year, about 112,000 fasteners were returned each year due to a quality problem. Jenkins decided to cut that rate to five hundred per million.

To tackle this problem, Jenkins created a team of three employees, one each from purchasing, sales, and quality control. The group was named the Continuous Improvement Team, or CIT, and given the charge of reducing customer rejection rate by 50 percent. The team members were initially concerned about meeting such an ambitious goal but quickly set to work.

They decided to focus their efforts on three areas: supplier quality, customer feedback, and training. Fastener Supply doesn't actually make fasteners at all but instead buys them from various fastener manufacturers. The CIT instructed each of the firm's suppliers to improve their own quality for production and delivery or risk losing business. Some suppliers did indeed balk, and thirty-seven were dropped from Fastener Supply's supplier network. The remaining 250 or so did meet the new standards and continue to have a strong relationship with the firm.

The CIT also sought feedback about areas where customers were not unhappy but where there was still room for improvement. Almost forty useful suggestions were re-

"Staying still wasn't going to cut it anymore."

—John Jenkins, president of Fastener Supply

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Define and identify types of groups and teams in organizations, discuss reasons people join groups and teams, and the stages of group and team development.
- Identify and discuss four essential characteristics of groups and teams.
- Discuss interpersonal and intergroup conflict in organizations.
- Describe how organizations manage conflict.

ceived and implemented. For example, one suggestion was that a Fastener Supply representative inform customers in advance when a shipment was going to be delayed for even a day or two. While the firm had been notifying customers about extended delays, it was easy enough to begin doing it routinely. Finally, the CIT also suggested that all employees at Fastener Supply receive more training in every phase of the operation, ranging from packing and loading boxes to logging inventory in computers. As a result, virtually all phases of the firm's operations improved as well. For example, the year after shipping employees received better training, only two of the seven thousand boxes shipped were returned with parts damaged from bad packing.

By virtually any measure, the CIT has been a big success for Fastener Supply. It actually beat its lofty quality improvement goal by driving defects down to only 216 per million, a phenomenally low level. In addition, the firm's business has been increasing at a rapid pace as word of its quality spreads throughout the industry. But neither the firm nor the CIT are finished. Indeed, the mantra heard throughout Fastener Supply today is achieving the ultimate goal—zero defects. While this ideal may never truly be reached, Fastener Supply's CIT vows to keep working toward it.[1]



CHAPTER OUTLINE

- **Groups and Teams in Organizations**
  - Types of Groups and Teams
  - Why People Join Groups and Teams
  - Stages of Group and Team Development
- **Characteristics of Groups and Teams**
  - Role Structures
  - Behavioral Norms
  - Cohesiveness
  - Formal and Informal Leadership
- **Interpersonal and Intergroup Conflict**
  - The Nature of Conflict
  - Causes of Conflict
- **Managing Conflict in Organizations**
  - Stimulating Conflict
  - Controlling Conflict
  - Resolving and Eliminating Conflict

John Jenkins at Fastener Supply recognized and took advantage of what many experts are increasingly seeing as a tremendous resource for all organizations—the power of groups and teams. When he needed some changes made at his firm, Jenkins could have just mandated them himself. Or he could have hired an outside consulting firm to tell his employees how to improve. Instead, he created a team of employees and allowed them to figure it out themselves.

This chapter is about processes that lead to and follow from activities like those at Fastener Supply. In the last chapter we established the interpersonal nature of organizations. We extend that discussion here by first introducing basic concepts of group and team dynamics. Subsequent sections explain the characteristics of groups and teams in organizations. We then describe interpersonal and intergroup conflict. Finally, we conclude with a discussion of how conflict can be managed.

■ Groups and Teams in Organizations

group Two or more people who interact regularly to accomplish a common purpose or goal

Groups are a ubiquitous part of organizational life. They are the basis for much of the work that gets done, and they evolve both inside and outside the normal structural boundaries of the organization. We will define a **group** as two or more people who interact regularly to accomplish a common purpose or goal.[2] The purpose of a group or team may range from preparing a new advertising campaign to sharing information informally, to making important decisions, to fulfilling social needs.

Types of Groups and Teams

In general, three basic kinds of groups are found in organizations—functional groups, task groups and teams, and informal or interest groups.[3] These groups are illustrated in Figure 19.1.

functional group A permanent group created by the organization to accomplish a number of organizational purposes with an indefinite time horizon

Functional Groups A **functional group** is a permanent group created by the organization to accomplish a number of organizational purposes with an indefinite time horizon. The advertising department at Kmart, the management department at the University of North Texas, and the nursing staff at the Mayo Clinic are functional groups. The advertising department at Kmart, for example, seeks to plan effective advertising campaigns, increase sales, run in-store promotions, and develop a unique identity for the company. It is assumed that the functional group will remain in existence after it attains its current objectives—those objectives will be replaced by new ones.

informal or **interest group** Created by its own members for purposes that may or may not be relevant to organizational goals

Informal or Interest Groups An **informal** or **interest group** is created by its own members for purposes that may or may not be relevant to organizational goals. It also has an unspecified time horizon. A group of employees who lunch together every day may be discussing how to improve productivity or embezzle money, or they may discuss local politics and sports. As long as the group members enjoy eating together, they will probably continue to do so. When lunches cease to be pleasant, they will seek other company or a different activity.

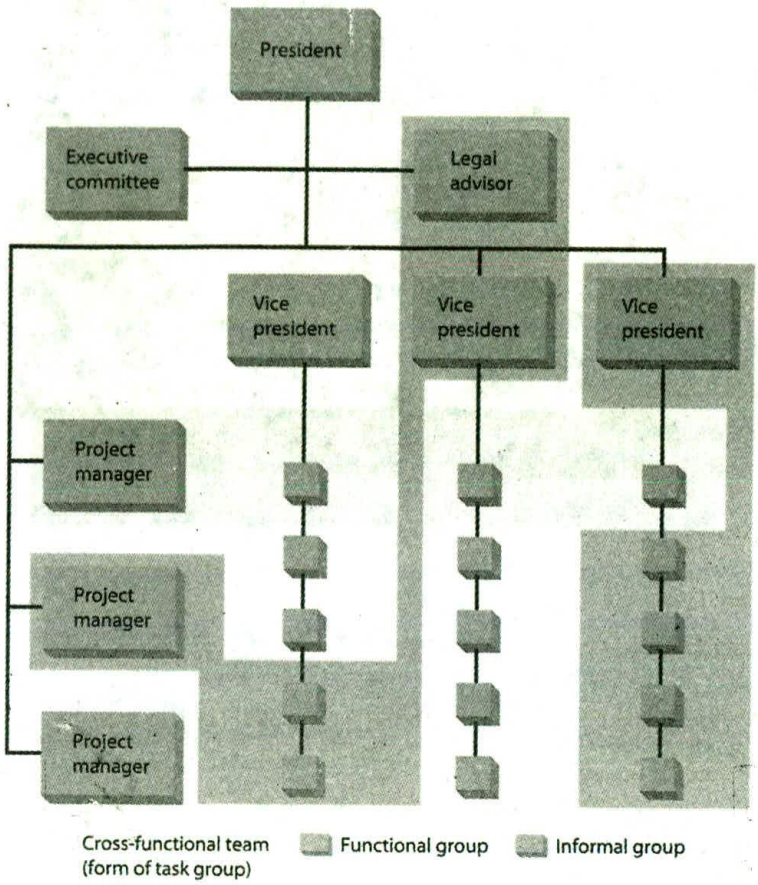


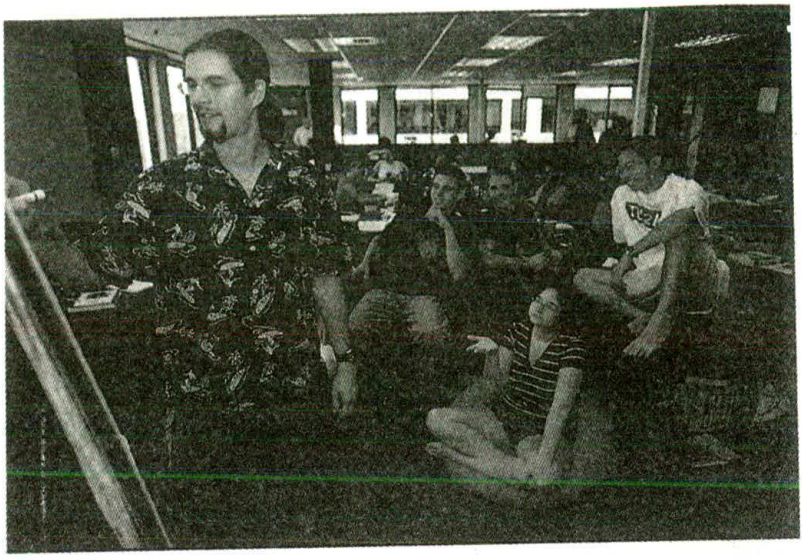
Figure 19.1

Types of Groups in Organizations
Every organization has many different types of groups. In this hypothetical organization, a functional group is shown within the blue area, a cross-functional group within the yellow area, and an informal group within the green area.

Informal groups can be a powerful force that managers cannot ignore. One writer described how a group of employees at a furniture factory subverted their boss's efforts to increase production. They tacitly agreed to produce a reasonable amount of work but not to work too hard. One man kept a stockpile of completed work hidden as a backup in case he got too far behind. In another example, auto workers described how they left out gaskets and seals and put soft-drink bottles inside doors.[4] Of course, informal groups can also be a positive force, as demonstrated recently when Continental airline's employees worked together to buy a new motorcycle for Gordon Bethune, the company's CEO, to show their support and gratitude for his excellent leadership.

Task Groups A **task group** is a group created by the organization to accomplish a relatively narrow range of purposes within a stated or implied time horizon. Most committees and task forces are task groups. The organization specifies group

task group A group created by the organization to accomplish a relatively narrow range of purposes within a stated or implied time horizon



Task groups are created by the organization to accomplish a relatively narrow range of purposes within a stated or implied time horizon. Take this group of software engineers, for example. They work for Trilogy Software, a high-tech firm based in Austin, Texas. The group is working on the development of a new software application program. Once the program is finished, the task group members will return to their previous responsibilities.

membership and assigns a relatively narrow set of goals, such as developing a new product or evaluating a proposed grievance procedure. The time horizon for accomplishing these purposes is either specified (a committee may be asked to make a recommendation within sixty days) or implied (the project team will disband when the new product is developed).

Teams are a special form of task group that have become increasingly popular.[5] In the sense used here, a **team** is a group of workers who function as a unit, often with little or no supervision, to carry out work-related tasks, functions, and activities. Table 19.1 lists and defines some of the various types of teams that are being used today. Earlier forms of teams included autonomous work groups and quality circles. Today, teams are also sometimes called *self-managed teams, cross-functional teams,* or *high-performance teams.* Many firms today are routinely using teams to carry out most of their daily operations.[6]

team A group of workers who function as a unit, often with little or no supervision, to carry out work-related tasks, functions, and activities

Organizations create teams for various reasons. For one thing, they give more responsibility for task performance to the workers who are actually performing the tasks. They also empower workers by giving them greater authority and decision-making freedom. In addition, they allow the organization to capitalize on the knowledge and motivation of their workers. Finally, they enable the organization to shed its bureaucracy and to promote flexibility and responsiveness. Ford used a team to design its new compact Focus. General Motors also used a team to develop the newest model of the Chevrolet Blazer.

When an organization decides to use teams, it is essentially implementing a major form of organization change, as discussed in Chapter 13. Thus, it is important to follow a logical and systematic approach to planning and implementing teams in an existing organization design. It is also important to recognize that re-

Table 19.1
Types of Teams

Problem-solving team	Most popular type of team; comprises knowledge workers who gather to solve a specific problem and then disband.
Management team	Consists mainly of managers from various functions like sales and production; coordinates work among other teams
Work team	An increasingly popular type of team, work teams are responsible for the daily work of the organization; when empowered, they are self-managed teams
Virtual team	A new type of work team that interacts by computer; members enter and leave the network as needed and may take turns serving as leader
Quality circle	Declining in popularity, quality circles, comprising workers and supervisors, meet intermittently to discuss workplace problems

Source: "Types of Teams" adapted from Brian Dumaine, "The Trouble with Teams," *Fortune*, September 5, 1994. Copyright © 1994 Time Inc. All rights reserved.

sistance may be encountered. This resistance is most likely from first-line managers who will be giving up much of their authority to the team. Many organizations find that they must change the whole management philosophy of such managers away from being a supervisor to being a coach or facilitator.[7]

After teams are in place, managers should continue to monitor their contributions and their functioning. In the best circumstance, teams will become very cohesive groups with high performance norms. To achieve this state, the manager can use any or all of the techniques described later in this chapter for enhancing cohesiveness. If implemented properly, and with the support of the workers themselves, performance norms will likely be relatively high. That is, if the change is properly implemented, the team participants will understand the value and potential of teams and the rewards they may expect as a result of their contributions. On the other hand, poorly designed and implemented teams will do a less effective job and may detract from organizational effectiveness.[8]

Why People Join Groups and Teams

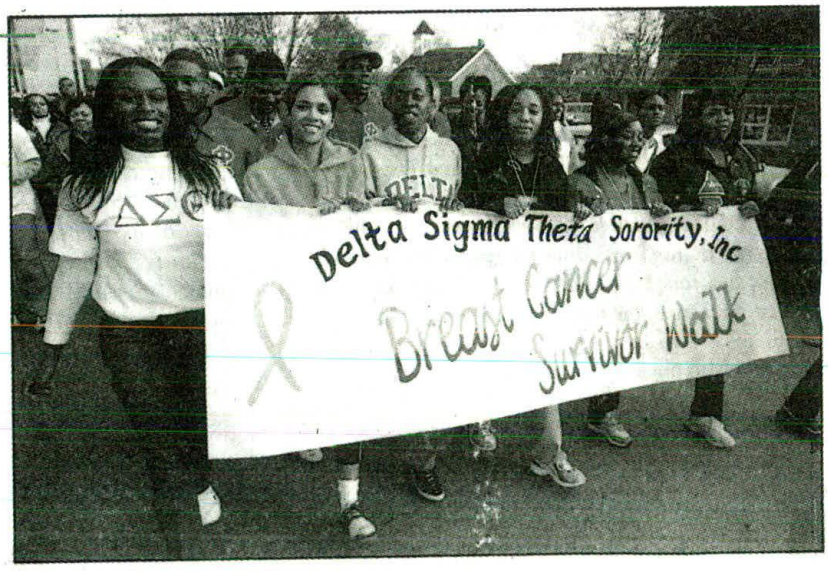
People join groups and teams for various reasons. They join functional groups simply by virtue of joining organizations. People accept employment to earn money or to practice their chosen profession. Once inside the organization, they are assigned to jobs and roles and thus become members of functional groups. People in existing functional groups are told or asked or they volunteer to serve on committees, task forces, and teams. People join informal or interest groups for a variety of reasons, most of them quite complex.[9] Indeed, the need to be a team player has grown so strong today that many organizations will actively resist hiring someone who does not want to work with others.[10]

Interpersonal Attraction One reason people choose to form informal or interest groups is that they are attracted to each other. Many different factors contribute to interpersonal attraction. When people see a lot of each other, pure proximity increases the likelihood that interpersonal attraction will develop. Attraction is increased when people have similar attitudes, personality, or economic standing.

Group Activities Individuals may also be motivated to join a group because the activities of the group appeal to them. Jogging, playing bridge, bowling, discussing poetry, playing war games, and flying model airplanes are all activities that some people enjoy. Many of them are more enjoyable to participate in as a member of a group, and most require more than one person. Many large firms like Shell Oil and Apple Computer have a league of football, softball, or bowling teams. A person may join a bowling team not because of any noticeable attraction to other group members but simply because being a member of the group allows that person to participate in a pleasant activity. Of course, if the level of interpersonal attraction of the group is very low, a person may choose to forgo the activity rather than join the group.

Group Goals The goals of a group may also motivate people to join. The Sierra Club, which is dedicated to environmental conservation, is a good example of this kind of interest group. Various fund-raising groups are another illustration. Members may or may not be personally attracted to the other fundraisers, and they probably do not enjoy the activity of knocking on doors asking for money, but they join the group because they subscribe to its goal. Workers join unions like the United Auto Workers because they support its goals.

Need Satisfaction Still another reason for joining a group is to satisfy the need for affiliation. New residents in a community may join the Newcomers Club partially as a way to meet new people and partially just to be around other people. Likewise, newly divorced individuals often join support groups as a way to have companionship.



People join groups for a variety of reasons. These women actually reflect two different reasons for joining a group. First, they individually joined the Delta Sigma Theta sorority for a variety of reasons, including interpersonal attraction, group activities, need satisfaction, and other reasons. Second, they then joined a larger group walking in support of breast cancer survivors because they support its goal.

Instrumental Benefits A final reason people join groups is that membership is sometimes seen as instrumental in providing other benefits to the individual. For example, it is fairly common for college students entering their senior year to join several professional clubs or associations because listing such memberships on a résumé is thought to enhance the chances of getting a good job. Similarly, a manager might join a certain racquet club not because she is attracted to its members (although she might be) and not because of the opportunity to play tennis (although she may enjoy it). The club's goals are not relevant and her affiliation needs may be satisfied in other ways. However, she may feel that being a member of this club will lead to important and useful business contacts. The racquet club membership is instrumental in establishing those contacts. Membership in civic groups such as Junior League and Rotary may be solicited for similar reasons.

Stages of Group and Team Development

Imagine the differences between a collection of five people who have just been brought together to form a group or team and a group or team that has functioned like a well-oiled machine for years. Members of a new group or team are unfamiliar with how they will function together and are tentative in their interactions. In a group or team with considerable experience, members are familiar with one another's strengths and weaknesses and are more secure in their role in the group. The former group or team is generally considered to be immature; the latter, mature. To progress from the immature phase to the mature phase, a group or team must go through certain stages of development, as shown in Figure 19.2.[11]

The first stage of development is called *forming*. The members of the group or team get acquainted and begin to test which interpersonal behaviors are acceptable and which are unacceptable to the other members. The members are very dependent on others at this point to provide cues about what is acceptable. The basic ground rules for the group or team are established and a tentative group structure may emerge. At Reebok, for example, a merchandising team was created to handle its sportswear business. The team leader and his members were barely acquainted and had to spend a few weeks getting to know one another.

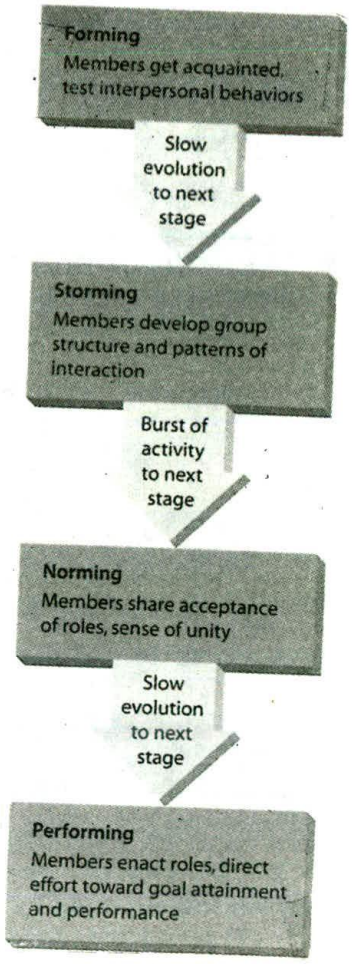
The second stage of development, often slow to emerge, is *storming*. During this stage there may be a general lack of unity and uneven interaction patterns. At the same time, some members of the group or team may begin to exert themselves to become recognized as the group leader or at least to play a major role in shaping the group's agenda. In Reebok's team, some members advocated a rapid expansion into the marketplace; others argued for a slower entry. The first faction won, with disastrous results. Because of the rush, product quality was poor and deliveries were late. As a result, the team leader was fired and a new manager placed in charge.

The third stage in the development, called *norming*, usually begins with a burst of activity. During this stage each person begins to recognize and accept her or his role and to understand the roles of others. Members also begin to accept one another and to develop a sense of unity. There may also be temporary regressions to the previous stage. For example, the group or team might begin to accept one

Figure 19.2

Stages of Group Development

As groups mature, they tend to evolve through four distinct stages of development. Managers must understand that group members need time to become acquainted, accept each other, develop a group structure, and become comfortable with their roles in the group before they can begin to work directly to accomplish goals.



particular member as the leader. If this person later violates important norms and otherwise jeopardizes his or her claim to leadership, conflict might re-emerge as the group rejects this leader and searches for another. Reebok's new leader transferred several people away from the team and set up a new system and structure for managing tasks. The remaining employees accepted his new approach and settled into doing their jobs.

Performing, the final stage of group or team development, is again slow to develop. The team really begins to focus on the problem at hand. The members enact the roles they have accepted, interaction occurs, and the efforts of the group are directed toward goal attainment. The basic structure of the group or team is no longer an issue but has become a mechanism for accomplishing the purpose of the group. Reebok's sportswear business is now growing consistently and has successfully avoided the problems that plagued it at first.

MANAGEMENT IMPLICATIONS Managers should recognize the variety of groups that can exist in an organization. Knowledge about teams is especially important in many modern organizations. In addition, they should understand and appreciate the various reasons that people join groups and teams. Finally, they should also understand and be able to recognize the stages of group development that a newly created group passes through as it becomes more mature.

Characteristics of Groups and Teams

As groups and teams mature and pass through the four basic stages of development, they begin to take on four important characteristics—a role structure, norms, cohesiveness, and informal leadership.[12] As described in *Today's Management Issues*, some organizations are redefining the role of top managers so that a team approach can be applied to the role of CEO.

Role Structures

role The part an individual plays in helping the group reach its goals

role structure The set of defined roles and interrelationships among those roles that the group or team members define and accept

Each individual in a team has a part—or **role**—to play in helping the group reach its goals. Some people are leaders, some do the work, some interface with other teams, and so on. Indeed, a person may take on a *task-specialist role* (concentrating on getting the group's task accomplished) or a *socioemotional role* (providing social and emotional support to others on the team). A few people, usually the leaders, perform both roles; a few others may do neither. The group's **role structure** is the set of defined roles and interrelationships among those roles that the group or team members define and accept. Each of us belongs to many groups and therefore plays multiple roles—in work groups, classes, families, and social organizations.[13]

Role structures emerge as a result of role episodes, as shown in Figure 19.3. The process begins with the expected role—what other members of the team expect the individual to do. The expected role gets translated into the sent role—the messages and cues that team members use to communicate the expected role to the individual. The perceived role is what the individual perceives the sent role to

TODAY'S MANAGEMENT ISSUES

TEAMS TAKE ON ROLE OF CHIEF OPERATING OFFICER

Not so long ago, the chief operating officer (COO) position was a steppingstone to the coveted chief executive officer (CEO) position at the top of the organizational pyramid. COOs worked closely with the heads of different units within the corporation to implement strategy and keep operations running smoothly. When Robert F. Cotter was COO of Starwood Hotels and Resorts Worldwide, for example, he saw himself as having hands-on responsibility for making the CEO's vision a reality. In many businesses, the difference in the CEO and COO roles came down to focus: the CEO was expected to concentrate on external issues and stakeholder relationships, while the COO looked after nitty-gritty, in-house matters.

These days, however, the COO role is disappearing from many organization charts. This change is due in part to the increased complexity of today's global corporations, which challenges the ability of any one person to monitor, let alone lead and coordinate, the working of diverse and disparate divisions. In addition, the ever-more turbulent business environment demands speedier decision making about a wider range of questions, folding another level of complexity into the COO's already difficult role. Finally, the trend toward flatter and more decentralized structures is causing top management to rethink the need for any position that separates the CEO from the executives in charge of the company's operating units.

Now many companies are doing away with the formal position of COO and dividing the role among a team of senior managers. Reporting to the CEO, such teams are empowered to decide on budgetary allocations, find ways of boosting productivity, and tweak implementation of strategy in response to or anticipation of environmental developments. The title of COO may be vanishing, but companies still need to be sure that someone—or some team—is keeping a close eye on everyday operations.

With companies managing a range of different business models, it's difficult to have all that come together in the head of one person.

*—David A. Nadler, chairman of Mercer Delta Consulting**

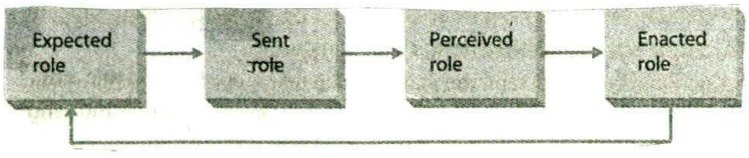
Reference: Diane Brady, "An Executive Whose Time Has Gone," *Business Week*, August 28, 2000, p. 125 (*quote on p. 125).

mean. Finally, the enacted role is what the individual actually does in the role. The enacted role, in turn, influences future expectations of the team. Of course, role episodes seldom unfold this easily. When major disruptions occur, individuals may experience role ambiguity, conflict, or overload.[14]

Figure 19.3

The Development of a Role

Roles and role structures within a group generally evolve through a series of role episodes. The first two stages of role development are group processes as the group members let individuals know what is expected of them. The other two parts are individual processes as the new group members perceive and enact their roles.



role ambiguity When the sent role is unclear and the individual does not know what is expected of him or her

Role Ambiguity **Role ambiguity** arises when the sent role is unclear. If your instructor tells you to write a term paper but refuses to provide more information, you will probably experience role ambiguity. You do not know what the topic is, how long the paper should be, what format to use, or when the paper is due. In work settings, role ambiguity can stem from poor job descriptions, vague instructions from a supervisor, or unclear cues from coworkers. The result is likely to be a subordinate who does not know what to do. Role ambiguity can be a significant problem for both the individual who must contend with it and the organization that expects the employee to perform.

role conflict When the messages and cues comprising the sent role are clear but contradictory or mutually exclusive

Role Conflict **Role conflict** occurs when the messages and cues comprising the sent role are clear but contradictory or mutually exclusive.[15] One common form is *interrole conflict*—conflict between roles. For example, if a person's boss says that to get ahead one must work overtime and on weekends, and the same person's spouse says that more time is needed at home with the family, conflict may result. In a matrix organization, interrole conflict often arises between the roles one plays in different teams as well as between team roles and one's permanent role in a functional group.

Intrarole conflict may occur when the person gets conflicting demands from different sources within the context of the same role. A manager's boss may tell her that she needs to put more pressure on subordinates to follow new work rules. At the same time, her subordinates may indicate that they expect her to get the rules changed. Thus, the cues are in conflict, and the manager may be unsure about which course to follow. *Intrasender conflict* occurs when a single source sends clear but contradictory messages. This situation might arise if the boss says one morning that there can be no more overtime for the next month but after lunch tells someone to work late that same evening. *Person-role conflict* results from a discrepancy between the role requirements and the individual's personal values, attitudes, and needs. If a person is told to do something unethical or illegal, or if the work is distasteful (for example, firing a close friend), person-role conflict is likely. Role conflict of all varieties is of particular concern to managers. Research has shown that conflict may occur in different situations and lead to various adverse consequences, including stress, poor performance, and rapid turnover.

role overload When expectations for the role exceed the individual's capabilities

Role Overload A final consequence of a weak role structure is **role overload**, which occurs when expectations for the role exceed the individual's capabilities. When a manager gives an employee several major assignments at once while increasing the person's regular workload, the employee will probably experience role overload. Role overload may also result when an individual takes on too many roles at one time. For example, a person trying to work extra hard at a job, run for election to the school board, serve on a committee in church, coach Little League baseball, maintain an active exercise program, and be a contributing member to her or his family will probably encounter role overload.

In a functional group or team, the manager can take steps to avoid role ambiguity, conflict, and overload. Having clear and reasonable expectations and send-

ing clear and straightforward cues can eliminate role ambiguity. Consistent expectations that take into account the employee's other roles and personal value system may minimize role conflict. Role overload can be avoided simply by recognizing the individual's capabilities and limits. In friendship and interest groups, role structures are likely to be less formal; hence, the possibility of role ambiguity, conflict, or overload may not be so great. However, if one or more of these problems do occur, they may be difficult to handle. Because roles in friendship and interest groups are less likely to be partially defined by a formal authority structure or written job descriptions, the individual cannot turn to these sources to clarify a role.

Behavioral Norms

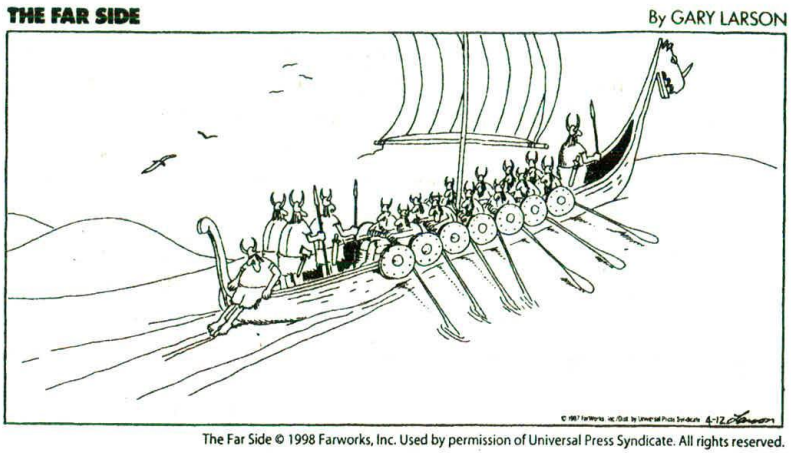
Norms are standards of behavior that the group or team accepts for its members. Most committees, for example, develop norms governing their discussions. A person who talks too much is perceived as doing so to make a good impression or to get his or her own way. Other members may not talk much to this person, may not sit nearby, may glare at the person, and may otherwise "punish" the individual for violating the norm. Norms, then, define the boundaries between acceptable and unacceptable behavior.[16] Some groups develop norms that limit the upper bounds of behavior to "make life easier" for the group. In general, these norms are counterproductive—don't make more than two comments in a committee discussion or don't produce any more than you have to. Other groups may develop norms that limit the lower bounds of behavior. These norms tend to reflect motivation, commitment, and high performance—don't come to meetings unless you've read the reports to be discussed, or produce as much as you can. Managers can sometimes use norms for the betterment of the organization. For example, Kodak has successfully used group norms to reduce injuries in some of its plants.[17]

norms Standards of behavior that the group or team accepts for its members

Norm Generalization The norms of one group cannot always be generalized to another group. Some academic departments, for example, have a norm suggesting that faculty members dress professionally on teaching days. People who fail to observe this norm are "punished" by sarcastic remarks or even formal reprimands. In other departments the norm may be casual clothes, and the person unfortunate enough to wear dress clothes may be punished just as vehemently. Even within the same work area, similar groups or teams can develop different norms. One team may strive always to produce above its assigned quota; another may maintain productivity just below its quota. The norm of one team may be to act friendly and cordial to its supervisor; that of another team may be to remain aloof and distant. Some differences are due primarily to the composition of the teams.

Norm Variation In some cases there can also be norm variation within a group or team. A common norm is that the least senior member of a group is expected to perform unpleasant or trivial tasks for the rest of the group. These tasks might be to wait on customers who are known to be small tippers (in a restaurant), to deal with complaining customers (in a department store), or to handle the low commission line of merchandise (in a sales department). Another example is when

Groups and teams are powerful forces in many organizations. People working together in a coordinated and integrated way can often accomplish far more than they could working alone. One problem that can arise, however, is called "free-riding." Free-riding occurs when someone in a group or team fails to carry out his or her responsibilities and lets others do all the work. As illustrated in this cartoon, the Viking in the back of the boat is neglecting his work and letting the rest of the group carry his weight. Thus, he is a free rider!



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certain individuals, especially informal leaders, may violate some norms. If the team is going to meet at 8 o'clock, anyone arriving late will be chastised for holding everyone up. Occasionally, however, the informal leader may arrive a few minutes late. As long as this behavior does not happen too often, the group will probably not do anything.

Norm Conformity Four sets of factors contribute to norm conformity. First, factors associated with the group are important. For example, some groups or teams may exert more pressure for conformity than others. Second, the initial stimulus that prompts behavior can affect conformity. The more ambiguous the stimulus (for example, news that the team is going to be transferred to a new unit), the more pressure there is to conform. Third, individual traits determine the individual's propensity to conform (for example, more intelligent people are often less susceptible to pressure to conform). Finally, situational factors such as team size and unanimity influence conformity. As an individual learns the group's norms, he can do several different things. The most obvious is to adopt the norms. For example, the new male professor who notices that all the other men in the department dress up to teach can also start wearing a suit. A variation is to try to obey the "spirit" of the norm while retaining individuality. The professor may recognize that the norm is actually to wear a tie; thus, he might succeed by wearing a tie with his sport shirt, jeans, and sneakers.

The individual may also ignore the norm. When a person does not conform, several things can happen. At first the group may increase its communication with the deviant individual to try to bring her back in line. If this solution does not work, communication may decline. Over time, the group may begin to exclude the individual from its activities and, in effect, ostracize the person. Finally, we need to consider briefly another aspect of norm conformity—socialization. **Socialization** is generalized norm conformity that occurs as a person makes the transition from being an outsider to being an insider. A newcomer to an organization, for example,

socialization Generalized norm conformity that occurs as a person makes the transition from being an outsider to being an insider in the organization

WORLD OF MANAGEMENT

INFORMALITY CREEPS INTO THE EUROPEAN WORKPLACE

Traditionally, European businesspeople have used formal courtesy titles such as *Herr* (German for "mister") and *Mademoiselle* (French for "miss") when addressing their colleagues. Now the norm of using coworkers' first names, entrenched in London and in other parts of Great Britain—as well as across the Atlantic in the United States—is slowly starting to spread in workplaces throughout the European continent.

One reason for this change is that coworkers from other countries who frequently collaborate with British colleagues are getting used to the first-name convention and carrying over the habit when they work with non-British colleagues. Second, younger employees prefer the informality of first names—especially when working with colleagues who are around the same age. And third, the large number of Americans working in Europe are reinforcing the habit because they are accustomed to calling colleagues by their first names.

Given the increasingly multicultural composition of the workforce in London and other European business centers, shifts like this one are becoming more commonplace. For example, the London branch of the investment banking firm J.P. Morgan employs people from more than fifty countries. In London overall, expatriates from the United States make up the largest proportion of foreign workers; other well-represented groups include employees and managers posted to London from France, Italy, Spain, and Germany.

A growing number of the European expatriates in London welcome the informality of being on a first-name basis with coworkers, in part because it encourages less rigid protocol in business settings. On the other hand, some expatriates who expect to remain in London for only a short time resist using first names because they believe they will have to break the habit when they return to work in their native countries. Despite such resistance, however, the long tradition of using courtesy titles in Europe is slowly but steadily giving way to the first-name norm in work settings.

***Here in the trading room, the average age is 28, so I would find it difficult to call my colleagues* monsieur.**

—Christian Lengelle, a financial trader in London*

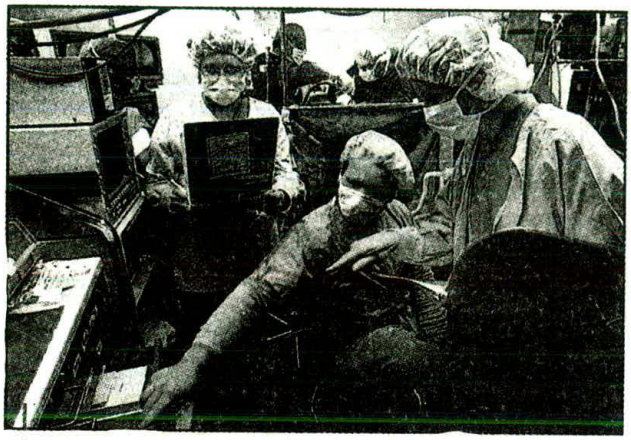
Reference: Astrid Wendlandt, "Formality Gives Way to First Names in City of London's Mix of Manners," *Financial Times*, August 15, 2000, p. 11 (*quote on p. 11).

gradually begins to learn the norms about issues such as dress, working hours, and interpersonal relations. As the newcomer adopts these norms, she is being socialized into the organizational culture. Some organizations, like Texas Instruments, work to manage the socialization process; others leave it to happenstance. *The World of Management* discusses how socialization is slowly changing norms in Europe to promote more informality in the workplace.

Cohesiveness

A third important team characteristic is cohesiveness. **Cohesiveness** is the extent to which members are loyal and committed to the group. In a highly cohesive team, the members work well together, support and trust one another, and are generally effective at achieving their chosen goal.[18] In contrast, a team that lacks cohesiveness is not very coordinated, and its members do not necessarily support

cohesiveness The extent to which members are loyal and committed to the group; the degree of mutual attractiveness within the group



Cohesive teams can be highly effective contributors to the success of any organization. This team, for example, consists of doctors and nurses working together to lower costs at Methodist Healthcare System in San Antonio. The team members share the same performance norms, and their close personal relationships have led the team to become more cohesive as they find new answers and help reach their goal. To date, the overall cost reduction program to which they belong has yielded savings of over $60 million.

one another fully and may have a difficult time reaching goals. Of particular interest are the factors that increase and reduce cohesiveness and the consequences of team cohesiveness. These factors are listed in Table 19.2.

Factors That Increase Cohesiveness Five factors can increase the level of cohesiveness in a group or team. One of the strongest is intergroup competition. When two or more groups are in direct competition (for example, three sales groups competing for top sales honors or two football teams competing for a conference championship), each group is likely to become more cohesive. Second, just as personal attraction plays a role in causing a group to form, so too does attraction seem to enhance cohesiveness. Third, favorable evaluation of the entire group by outsiders can increase cohesiveness. Thus, a group's winning a sales contest or a conference title or receiving recognition and praise from a superior will tend to increase cohesiveness.

If all the members of the group or team agree on its goals, cohesiveness is likely to increase.[19] And the more frequently members of the group interact with each other, the more likely the group is to become cohesive. A manager who wants to foster a high level of cohesiveness in a team might do well to establish some form of intergroup competition, assign members to the group who are likely to be attracted to one another, provide opportunities for success, establish goals that all members are likely to accept, and allow ample opportunity for interaction.

Factors That Reduce Cohesiveness Five factors are also known to reduce team cohesiveness. First of all, cohesiveness tends to decline as a group increases in size. Second, when members of a team disagree on what the goals of the group

Table 19.2

Factors That Influence Group Cohesiveness

Several different factors can potentially influence the cohesiveness of a group. For example, a manager can establish intergroup competition, assign compatible members to the group, create opportunities for success, establish acceptable goals, and foster interaction to increase cohesiveness. Other factors can be used to decrease cohesiveness.

Factors That Increase Cohesiveness	Factors That Reduce Cohesiveness
Intergroup competition	Group size
Personal attraction	Disagreement on goals
Favorable evaluation	Intragroup competition
Agreement on goals	Domination
Interaction	Unpleasant experiences

should be, cohesiveness may decrease. For example, when some members believe the group should maximize output and others think output should be restricted, cohesiveness declines. Third, intragroup competition reduces cohesiveness. When members are competing among themselves, they focus more on their own actions and behaviors than on those of the group.

Fourth, domination by one or more persons in the group or team may cause overall cohesiveness to decline. Other members may feel that they are not being given an opportunity to interact and contribute, and they may become less attracted to the group as a consequence. Finally, unpleasant experiences that result from group membership may reduce cohesiveness. A sales group that comes in last in a sales contest, an athletic team that sustains a long losing streak, and a work group reprimanded for poor-quality work may all become less cohesive as a result of their unpleasant experience.

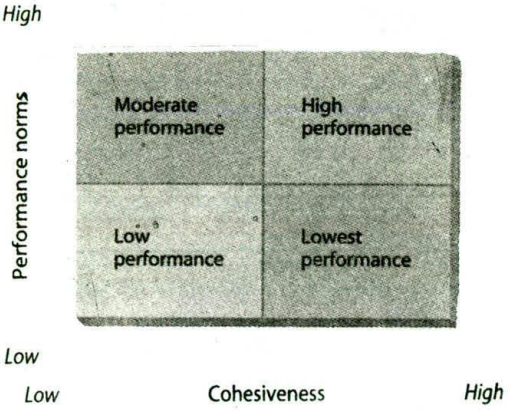
Consequences of Cohesiveness In general, as teams become more cohesive, their members tend to interact more frequently, conform more to norms, and become more satisfied with the team. Cohesiveness may also influence team performance. However, performance is also influenced by the team's performance norms. Figure 19.4 shows how cohesiveness and performance norms interact to help shape team performance.

When both cohesiveness and performance norms are high, high performance should result because the team wants to perform at a high level (norms) and its members are working together toward that end (cohesiveness). When norms are high and cohesiveness is low, performance will be moderate. Although the team wants to perform at a high level, its members are not necessarily working well together. When norms are low, performance will be low, regardless of whether group cohesiveness is high or low. The least desirable situation occurs when low performance norms are combined with high cohesiveness. In this case all team members embrace the standard of restricting performance (because of the low performance norm), and the group is united in its efforts to maintain that standard (because of the high cohesiveness). If cohesiveness were low, the manager might be able to raise performance norms by establishing high goals and rewarding goal attainment or by bringing in new group members who were high performers. But a highly cohesive group is likely to resist these interventions.[20]

Figure 19.4

The Interaction Between Cohesiveness and Performance Norms

Group cohesiveness and performance norms interact to determine group performance. From the manager's perspective, high cohesiveness combined with high performance norms is the best situation, and high cohesiveness with low performance norms is the worst situation. Managers who can influence the level of cohesiveness and performance norms can greatly improve the effectiveness of a work group.



Formal and Informal Leadership

Most functional groups and teams have a formal leader—that is, one appointed by the organization or chosen or elected by the members of the group. Because friendship and interest groups are formed by the members themselves, however,

any formal leader must be elected or designated by the members. Although some groups do designate such a leader (a softball team may elect a captain, for example), many do not. Moreover, even when a formal leader is designated, the group or team may also look to others for leadership. An **informal leader** is a person who engages in leadership activities but whose right to do so has not been formally recognized by the organization or group. The formal and the informal leader in any group or team may be the same person, or they may be different people. We noted earlier the distinction between the task-specialist and socioemotional roles within groups. An informal leader is likely to be a person capable of carrying out both roles effectively. If the formal leader can fulfill one role but not the other, an informal leader often emerges to supplement the formal leader's functions. If the formal leader cannot fill either role, one or more informal leaders may emerge to carry out both sets of functions.

informal leader A person who engages in leadership activities but whose right to do so has not been formally recognized by the organization or group

Is informal leadership desirable? In many cases informal leaders are quite powerful because they draw from referent or expert power. When they are working in the best interest of the organization, they can be a tremendous asset. Notable athletes such as Brett Favre and Mia Hamm are classic examples of informal leaders. However, when informal leaders work counter to the goals of the organization, they can cause significant difficulties. Such leaders may lower performance norms, instigate walkouts or wildcat strikes, or otherwise disrupt the organization.

MANAGEMENT IMPLICATIONS Managers need to understand clearly the four basic characteristics of groups and teams. Specifically, they need to understand and know how to manage role structures to minimize role ambiguity, conflict, and overload. The importance of behavioral norms also cannot be overlooked. Managers should also understand the power of cohesiveness, the factors that can increase and decrease it, and how it interacts with performance norms. Finally, managers should also know the difference between formal and informal leadership and be able to identify their key informal leaders.

■ Interpersonal and Intergroup Conflict

Of course, when people work together in an organization, things do not always go smoothly. Conflict is an inevitable element of interpersonal relationships in organizations. In this section we will look at how conflict affects overall performance. We also explore the causes of conflict between individuals, between groups, and between an organization and its environment.

The Nature of Conflict

Conflict is a disagreement between two or more individuals, groups, or organizations. This disagreement may be relatively superficial or very strong. It may be short-lived or it can exist for months or even years, and it may be work-related or personal. Conflict may manifest itself in various ways. People may compete with

conflict A disagreement between two or more individuals, groups, or organizations

one another, glare at one another, shout, or withdraw. Groups may band together to protect popular members or oust unpopular members. Organizations may seek legal remedy. *Working with Diversity* discusses how casual dress policies are creating conflict in some organizations.

Most people assume that conflict is something to be avoided because it connotes antagonism, hostility, unpleasantness, and dissension. Indeed, managers and management theorists have traditionally viewed conflict as a problem to be avoided.[21] In recent years, however, we have come to recognize that, although conflict can be a major problem, certain kinds of conflict may also be beneficial.[22] For example, when two members of a site selection committee disagree over the best location for a new plant, each may be forced to study and defend his or her preferred alternative more thoroughly. As a result of more systematic analysis and

WORKING WITH DIVERSITY

Back to Blazers and Button-Downs?

Seeking to improve morale and break down hierarchical barriers, many U.S. companies embraced casual dress during the 1990s. The trend started with dress-down Fridays and, at some companies, led to casual wear being accepted at work on almost any day. Now a backlash against overly casual dress is bringing blazers and button-downs back to the workplace.

One problem companies have encountered is conflicting definitions of exactly what constitutes casual dress. After management adopted a casual dress code at Development Counselors International, for example, some employees began wearing workout clothing to the office. The company finally resolved the conflict by forming a committee to establish standards indicating what items of apparel were acceptable. According to surveys, jeans, polo shirts, and sneakers are generally acceptable as casual dress at many companies, while tight-fitting spandex clothing, short shorts, and sweat pants are not.

Another problem is that too-casual attire may conflict with behavior norms, encouraging undesirable—and possibly illegal—behavior. Almost half of the companies responding to a recent survey said that absenteeism increased after casual dress was adopted; 30 percent said they saw an increase in flirtatious behavior as well. Clothing that is too tight or too revealing may provoke attention that, in extreme cases, can escalate to sexual harassment. This situation can also be addressed by establishing specific dress standards so all employees understand what they may and may not wear to work.

To prevent conflict, a growing number of companies are requiring traditional business attire. Korn/Ferry International, a recruiting firm in Chicago, tried a casual dress policy but switched back to business clothing after the one-year experiment. Some larger companies are requiring more professional clothing on a branch-by-branch basis, depending on whether employees meet the public or work in the back office. But the backlash isn't always initiated by management. Consider the situation at Invigo, a California-based Internet company that permits nearly every kind of casual dress. Fridays have been different, however, since Invigo's engineers decided on their own to designate it as their department's unofficial dress-up day.

This is a business, and business attire is appropriate. If you dress inappropriately, sometimes your business becomes more relaxed. Dressing up means you're more productive.

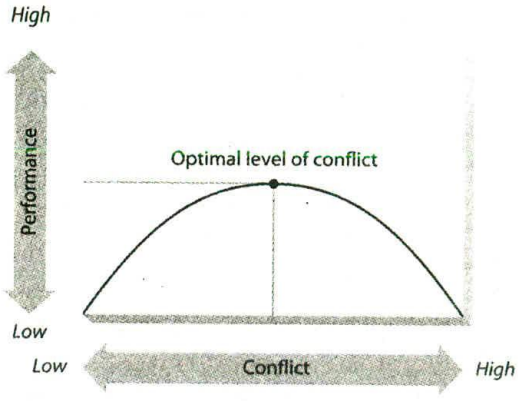
*—Lawrence Schwartz, CEO of Service911.com**

Reference: Stephanie Armour, "Companies Rethink Casual Clothes," *USA Today*, June 27, 2000, pp. 1A, 2A (*quote on p. 2A).

Figure 19.5

The Nature of Organizational Conflict

Either too much or too little conflict can be dysfunctional for an organization. In either case performance may be low. However, an optimal level of conflict that sparks motivation, creativity, innovation, and initiative can result in higher levels of performance. T. J. Rodgers, CEO of Cypress Semiconductor, maintains a moderate level of conflict in his organization as a way of keeping people energized and motivated.



discussion, the committee may make a better decision and be better prepared to justify it to others than if everyone had agreed from the outset and accepted an alternative that was perhaps not well analyzed.

As long as conflict is being handled in a cordial and constructive manner, it is probably serving a useful purpose in the organization. On the other hand, when working relationships are being disrupted and the conflict has reached destructive levels, it has likely become dysfunctional and needs to be addressed.[23] We discuss ways of dealing with such conflict later in this chapter.

Figure 19.5 depicts the general relationship between conflict and performance for a group or organization. If there is absolutely no conflict in the group or organization, its members may become complacent and apathetic. As a result, group or organizational performance and innovation may begin to suffer. A moderate level of conflict among group or organizational members, on the other hand, can spark motivation, creativity, innovation, and initiative and raise performance. Too much conflict, though, can produce undesirable results such as hostility and lack of cooperation, which lower performance. The key for managers is to find and maintain the optimal amount of conflict that fosters performance. Of course, what constitutes optimal conflict varies with both situation and the people involved.[24]

Causes of Conflict

Conflict may arise in both interpersonal and intergroup relationships. Occasionally conflict between individuals and groups may be caused by particular organizational strategies and practices. A third arena for conflict is between an organization and its environment.

Interpersonal Conflict Conflict between two or more individuals is almost certain to occur in any organization, given the great variety in perceptions, goals, attitudes, and so forth, among its members. William Gates, founder and CEO of Microsoft, and Kazuhiko Nishi, a former business associate from Japan, ended a long-term business relationship because of interpersonal conflict. Nishi accused Gates of becoming too political, while Gates charged that Nishi became to unpredictable and erratic in his behavior.[25]

A frequent source of interpersonal conflict in organizations is what many people call a personality clash—when two people distrust each others' motives, dislike one another, or for some other reason simply can't get along.[26] Conflict may also arise between people who have different beliefs or perceptions about some aspect of their work or their organization. For example, one manager may want the organization to require that all employees use Microsoft Office software to promote

standardization. Another manager may believe that different software packages should be allowed to recognize individuality. Similarly, a male manager may disagree with his female colleague over whether the organization is guilty of discriminating against women in promotion decisions.

Conflict can also result from excess competitiveness among individuals. Two people vying for the same job, for example, may resort to political behavior in an effort to gain an advantage. If either competitor sees the other's behavior as inappropriate, accusations are likely to result. Even after the "winner" of the job is determined, such conflict may continue to undermine interpersonal relationships, especially if the reasons given in selecting one candidate are ambiguous or open to alternative explanation. Robert Allen resigned as CEO of Delta Airlines because he disagreed with other key executives over how best to reduce the carrier's costs. After he began looking for a replacement for one of his rivals without the approval of the firm's board of directors, the resultant conflict and controversy left him no choice but to leave.[27]

Intergroup Conflict Conflict between two or more organizational groups is also quite common. For example, the members of a firm's marketing group may disagree with the production group over product quality and delivery schedules. Two sales groups may disagree over how to meet sales goals, and two groups of managers may have different ideas about how best to allocate organizational resources.

Many intergroup conflicts arise more from organizational causes than interpersonal causes. In Chapter 11, we described three forms of group interdependence—pooled, sequential, and reciprocal. Just as increased interdependence makes coordination more difficult, it also increases the potential for conflict. For example, recall that in sequential interdependence, work is passed from one unit to another. Intergroup conflict may arise if the first group turns out too much work (the second group will fall behind), too little work (the second group will not meet its own goals), or poor-quality work.

At a J.C. Penney's department store, conflict recently arose between stockroom employees and sales associates. The sales associates claimed that the stockroom employees were slow in delivering merchandise to the sales floor so that it could be priced and shelved. The stockroom employees, in turn, claimed that the sales associates were not giving them enough lead time to get the merchandise delivered and failed to understand that they had additional duties besides carrying merchandise to the sales floor.

Just like people, different departments often have different goals, and these goals may often be incompatible. A marketing goal of maximizing sales, achieved partially by offering many products in a wide variety of sizes, shapes, colors, and models, probably conflicts with a production goal of minimizing costs, achieved partially by long production runs of a few items. Reebok recently confronted this very situation. One group of managers wanted to introduce a new sportswear line as quickly as possible, while other managers wanted to expand more deliberately and cautiously. Because the two groups were not able to reconcile their differences effectively, conflict between the two factions led to quality problems and delivery delays that plagued the firm for months.

Competition for scarce resources can also lead to intergroup conflict. Most organizations—especially universities, hospitals, government agencies, and businesses in depressed industries—have limited resources. In one New England town, for example, the public works department and the library recently battled over funds from a federal construction grant. The Oldsmobile, Pontiac, and Chevrolet divisions of General Motors have frequently fought over the rights to manufacture various new products developed by the company.

Conflict Between Organization and Environment Conflict that arises between one organization and another is called interorganizational conflict. A moderate amount of interorganizational conflict resulting from business competition is, of course, expected, but sometimes conflict becomes more extreme. For example, the owners of Jordache Enterprises Inc. and Guess? Inc. battled in court for years over ownership of the Guess label, allegations of design theft, and several other issues.[28] Similarly, General Motors and Volkswagen went to court to resolve a bitter conflict that spanned more than four years. It all started when a key GM executive, Jose Ignacio Lopez de Arriortua, left for a position at Volkswagen. GM claimed that he took with him key secrets that could benefit its German competitor. After the messy departure, dozens of charges and countercharges were made by the two firms, and only a court settlement was able to put the conflict to an end.[29]

Conflict can also arise between an organization and other elements of its environment. For example, an organization may conflict with a consumer group over claims made about its products. McDonald's faced this problem a few years ago when it published nutritional information about its products that omitted details about fat content. A manufacturer might conflict with a governmental agency such



Conflict can arise for a variety of reasons. This Israeli border guard and Palestinian citizen are experiencing conflict due to both religious and political reasons. The Palestinian was seeking to enter a mosque for Friday prayers; however, the Israeli guard was ordered to keep Palestinians from entering this particular part of Jerusalem because of concerns about political tension and unrest.

as OSHA. For example, the firm's management may believe it is in compliance with OSHA regulations, while officials from the agency itself feel that the firm is not in compliance. Or a firm might conflict with a supplier over the quality of raw materials. The firm may think the supplier is providing inferior materials, while the supplier thinks the materials are adequate. Finally, individual managers may obviously have disagreements with groups of workers. For example, a manager may think her workers are doing poor-quality work and that they are unmotivated. The workers, on the other hand, may believe they are doing a good job and that the manager is doing a poor job of leading them.

MANAGEMENT IMPLICATIONS Managers need to have a thorough understanding of conflict. In particular, they need to understand the nature of conflict and the primary forces that may cause conflict to arise in their organizations.

■ Managing Confilict in Organizations

How do managers cope with all this potential conflict? Fortunately, as Table 19.3 shows, there are ways to stimulate conflict for constructive ends, to control conflict before it gets out of hand, and to resolve it if it does. Below we look at ways of managing conflict.

Stimulating Conflict

In some situations, an organization may stimulate conflict by placing individual employees or groups in competitive situations. Managers can establish sales contests, incentive plans, bonuses, or other competitive stimuli to spark competition. As long as the ground rules are equitable and all participants perceive the contest as fair, the conflict created by the competition is likely to be constructive because each participant will work hard to win (thereby enhancing some aspect of organizational performance).

Stimulating conflict
Increase competition among individuals and teams
Hire outsiders to shake things up
Change established procedures
Controlling conflict
Expand resource base
Enhance coordination of interdependence
Set supraordinate goals
Match personalities and work habits of employees
Resolving and eliminating conflict
Avoid conflict
Convince conflicting parties to compromise
Bring conflicting parties together to confront and negotiate conflict

Table 19.3

Methods for Managing Conflict

Conflict is a powerful force in organizations and has both negative and positive consequences. Thus, managers can draw upon several different techniques to stimulate, control, resolve, or eliminate conflict, depending on their unique circumstances.

Another useful method for stimulating conflict is to bring in one or more outsiders who will shake things up and present a new perspective on organizational practices. Outsiders may be new employees, current employees assigned to an existing work group, or consultants or advisers hired on a temporary basis. Of course, this action can also provoke resentment from insiders who feel they were qualified for the position. The Beecham Group, a British company, once hired an executive from the United States for its CEO position expressly to change how the company did business. His arrival brought with it new ways of doing things and a new enthusiasm for competitiveness. Unfortunately, some valued employees also chose to leave Beecham because they resented some of the changes that were made.

Changing established procedures, especially procedures that have outlived their usefulness, can also stimulate conflict. Such actions cause people to reassess how they perform their jobs and whether they perform them correctly. For example, one university president announced that all vacant staff positions could be filled only after written justification had received his approval. Conflict arose between the president and the department heads who felt they were having to do more paperwork than was necessary. Most requests were okayed, but because department heads now had to think through their staffing needs, a few unnecessary positions were appropriately eliminated.

Controlling Conflict

One method of controlling conflict is to expand the resource base. Suppose a top manager receives two budget requests for $100,000 each. If she has only $180,000 to distribute, the stage is set for conflict because each group will feel its proposal is worth funding and will be unhappy if it is not fully funded. If both proposals are indeed worthwhile, it may be possible for her to come up with the extra $20,000 from some other source and thereby avoid difficulty.

As noted earlier, pooled, sequential, and reciprocal interdependence can all result in conflict. If managers use an appropriate technique for enhancing coordination, they can reduce the probability that conflict will arise. Techniques for coordination (described in Chapter 11) include making use of the managerial hierarchy, relying on rules and procedures, enlisting liaison persons, forming task forces, and integrating departments. At the J.C. Penney store mentioned earlier, the conflict was addressed by providing salespeople with clearer forms on which to specify the merchandise they needed and in what sequence. If one coordination technique does not have the desired effect, a manager might shift to another.

Competing goals can also be a potential source of conflict among individuals and groups. Managers can sometimes focus employee attention on higher-level, or superordinate, goals as a way of eliminating lower-level conflict. When labor unions such as the United Auto Workers make wage concessions to ensure survival of the automobile industry, they are responding to a superordinate goal. Their immediate goal may be higher wages for members, but they realize that without the automobile industry, their members would not even have jobs.

Finally, managers should try to match the personalities and work habits of employees to avoid conflict between individuals. For instance, two valuable subordinates, one a chain smoker and the other a vehement nonsmoker, should probably not be required to work together in an enclosed space. If conflict does arise between incompatible individuals, a manager might seek an equitable transfer for one or both of them to other units.

Resolving and Eliminating Conflict

Despite everyone's best intentions, conflict will sometimes flare up. If it is disrupting the workplace, creating too much hostility and tension, or otherwise harming the organization, attempts must be made to resolve it. Some managers who are uncomfortable dealing with conflict choose to avoid the conflict and hope it will go away. Avoidance may sometimes be effective in the short run for some kinds of interpersonal disagreements, but it does little to resolve long-run or chronic conflict. Even more unadvisable, though, is "smoothing"—minimizing the conflict and telling everyone that things will "get better." Often the conflict will only worsen as people continue to brood over it.

Compromise is striking a middle-range position between two extremes. This approach can work if it is used with care, but in most compromise situations someone wins and someone loses. Budget problems are one of the few areas amenable to compromise because of their objective nature. Assume, for example, that additional resources are not available to the manager mentioned earlier. She has $180,000 to divide, and each of two groups claims to need $100,000. If the manager believes that both projects warrant funding, she can allocate $90,000 to each. The fact that the two groups have at least been treated equally may minimize the potential conflict.

The confrontation approach to conflict resolution—also called interpersonal problem solving—consists of bringing the parties together to confront the conflict. The parties discuss the nature of their conflict and attempt to reach an agreement or a solution. Confrontation requires a reasonable degree of maturity on the part of the participants, and the manager must structure the situation carefully. If handled well, this approach can be an effective means of resolving conflict. In recent years, many organizations have experimented with a technique called alternative dispute resolution, using a team of employees to arbitrate conflict in this way.[30]

Regardless of the approach, organizations and their managers must realize that conflict must be addressed if it is to serve constructive purposes and to prevent destructive consequences. Conflict is inevitable in organizations, but its effects can be constrained with proper attention. For example, Union Carbide once sent two hundred of its managers to a three-day workshop on conflict management. The managers engaged in a variety of exercises and discussions to learn with whom they were most likely to come into conflict and how they should try to resolve it. As a result, managers at the firm later reported that hostility and resentment in the organization had been greatly diminished and that people in the firm reported more pleasant working relationships.[31]

MANAGEMENT Managers need to understand that conflict may need to be stimulated, controlled, and/or resolved and eliminated. They should thus be familiar with the various techniques available to accomplish each of these ends, as well as understanding the benefits and weaknesses of each technique.

Summary of Key Points

A group is two or more people who interact regularly to accomplish a common purpose or goal. General kinds of groups in organizations are functional groups, task groups and teams, and informal or interest groups. A team is a group of workers that functions as a unit, often with little or no supervision, to carry out organizational goals.

People join functional groups and teams to pursue a career. Their reasons for joining informal or interest groups include interpersonal attraction, group activities, group goals, need satisfaction, and potential instrumental benefits. The stages of team development include testing and dependence, intragroup conflict and hostility, development of group cohesion, and focusing on the problem at hand.

Four important characteristics of teams are role structures, behavioral norms, cohesiveness, and informal leadership. Role structures define task and socioemotional specialists and may be weakened by role ambiguity, role conflict, or role overload. Norms are standards of behavior for group members. Cohesiveness is the extent to which members are loyal and committed to the team and to one another. Several factors can increase or reduce team cohesiveness. The relationship between performance norms and cohesiveness is especially important. Informal leaders are those people whom the group members themselves choose to follow.

Conflict is a disagreement between two or more people, groups, and/or organizations. Too little or too much conflict may hurt performance, but an optimal level of conflict may improve performance. Interpersonal and intergroup conflict in organizations may be caused by personality differences or by particular organizational strategies and practices.

Organizations may encounter conflict with one another and with various elements of the environment. Three methods of managing conflict are to stimulate it, control it, or resolve and eliminate it.

Discussion Questions

Questions for Review

1. What is a group? Describe the several different types of groups and indicate the similarities and differences between them.
2. Why do people join groups? Do all teams develop through all the stages discussed in this chapter? Why or why not?
3. Describe the characteristics of teams. How might the management of a mature team differ from the management of teams that are not yet mature?
4. Describe the nature and causes of conflict in organizations. Is conflict always bad? Why or why not?

Questions for Analysis

5. Is it possible for a group to be of more than one type at the same time? If so, under what circumstances? If not, why not?
6. Think of several groups of which you have been a member. Why did you join each? Did each group progress through the stages of development discussed in this chapter? If not, why not?
7. Do you think teams are a valuable new management technique that will endure, or are they just a fad that will be replaced with something else in the near future?

Questions for Application

8. Find local organizations that regularly use groups in their operations. What kinds of groups are being used? How are they being used? Is that use effective? Why or why not?
9. Find out if a local business is using teams. If so, talk to a manager or team participant at the company and learn about her or his experiences.
10. Would a manager want to stimulate conflict in his or her organization? Why or why not? Interview several managers of local business organizations to obtain their views on the use of conflict and compare them to your answer to this question.

BUILDING EFFECTIVE *interpersonal* SKILLS

Exercise Overview

A manager's interpersonal skills refer to her or his ability to understand and motivate individuals and groups. Clearly, then, interpersonal skills play a major role in determining how well a manager can interact with others in a group setting. This exercise will allow you to practice your interpersonal skills in relation to just such a setting.

Exercise Background

You have just been transferred to a new position supervising a group of five employees. The business you work for is fairly small and has few rules and regulations. Unfortunately, the lack of rules and regulations is creating a problem that you must now address.

Specifically, two of the group members are nonsmokers. They are becoming increasingly vocal about the fact that two other members of the group smoke at work. These two workers feel that the secondary smoke in the workplace is endangering their health and want to establish a nonsmoking policy like that of many large businesses today.

The two smokers, however, argue that since the firm did not have such a policy when they started working there, it would be unfair to impose such a policy on them now. One of them, in particular, says that he turned down an attractive job with another company because he wanted to work in a place where he could smoke.

The fifth worker is also a nonsmoker but says that she doesn't care if others smoke. Her husband smokes at home anyway, and so she is used to being around smokers. You suspect that if the two vocal nonsmokers are not appeased, they may leave. At the same time, you also think that the two smokers will leave if you mandate a no-smoking policy. All five workers do good work, and you do not want any of them to leave.

Exercise Task

With this information as context, do the following:

1. Explain the nature of the conflict that exists in this work group.
2. Develop a course of action for dealing with the situation.

BUILDING EFFECTIVE *conceptual* SKILLS

Exercise Overview

Groups and teams are becoming ever more important in organizations. This exercise will allow you to practice your conceptual skills as they apply to work teams in organizations.

Exercise Background

Several highly effective groups exist outside the boundaries of typical business organizations. For example, each of the following represents a team:

1. A basketball team
2. An elite military squadron
3. A government policy group such as the presidential cabinet
4. A student planning committee

Exercise Task

1. Identify an example of a real team, such as one of the above. Choose one that (a) is not part of a normal business and (b) you can argue is highly effective.
2. Determine the reasons for the team's effectiveness.
3. Determine how a manager can learn from this particular team and use its success factors in a business setting.

BUILDING EFFECTIVE *time-management* SKILLS

Exercise Overview

Time-management skills refer to the manager's ability to prioritize work, to work efficiently, and to delegate appropriately. This exercise will enable you to develop time-management skills as they relate to running team meetings.

Exercise Background

While teams and team meetings are becoming more and more common, some managers worry that they waste too much time. Listed below are several suggestions that experts have made for being more efficient in a meeting:

1. Have an agenda.
2. Meet only when there is a reason.
3. Set a clear starting and ending time.
4. Put a clock in front of everyone.
5. Take away all the chairs and make people stand.
6. Lock the door at starting time to "punish" late-comers.
7. Give everyone a role in the meeting.
8. Use visual aids.
9. Have a recording secretary to document what transpires.
10. Have a one-day-a-week meeting "holiday"—a day on which no one can schedule a meeting.

Exercise Task

With the information above as context, do the following:

1. Evaluate the likely effectiveness of each of these suggestions.
2. Rank-order the suggestions in terms of their likely value.
3. Identify at least three other suggestions that you think might improve the efficiency of a team meeting.

CHAPTER CLOSING CASE

TOTAL TEAMWORK SPARKS IMAGINATION

Run more like a circus than a traditional company, Imagination Ltd., a London-based design firm, relies on high-performance teams to create museum exhibitions, design cruise ship lighting, develop product packaging, and much more. Its 350 employees are experts in twenty-six wide-ranging disciplines, including architecture, lighting, graphics, web design, and choreography. Despite this diversity, Imagination is anything but hierarchical: only four employees have official titles such as creative director. How does anything get done? Imagination's answer is total teamwork.

When a client consults with Imagination, the company quickly assembles a cross-functional team of in-house experts to help define the project and determine the goals. Once the client and Imagination agree on the scope of the project, the team members come up with a specific goal statement they use to guide their work. For example, when Imagination was hired to create a pleasant waiting area for people lining up for the Skyscape attraction inside London's Millennium Dome, the goal statement called for creating a climate of "uncomplicated joy." The team for this project started with an architect, lighting expert, graphics expert, and film director, then expanded to include a choreographer. As in other Imagination projects, the Skyscape team met weekly to brainstorm, flesh out the best ideas, and then adjourn to bring the ideas to life. Clients don't attend these meetings, but their views are well represented and their feedback is incorporated into team decisions.

Because personnel in other parts of the company are often affected by team actions, everyone is invited to attend each team's weekly project meetings. This tradition keeps the entire workforce informed of problems and progress and allows non–team members to plan ahead for a later role, such as arranging for printing or transportation at the end of the project. In effect, the entire company functions as a team, with employees monitoring projects and staying up to date so they are ready to get involved when their expertise is needed.

Many organizations assemble teams of free agents who are hired to work on particular projects and then leave after their work is complete. However, one of Imagination's strengths is that its experts are all employees, so their talents are available to any team at any time. Another strength is that Imagination's teams have no formal leadership. Instead, every member accepts responsibility for the project's success and acts accordingly, providing input and tackling tasks that bring the entire team closer to its goal.

Imagination's team members have earned reputations as experts in their fields and have developed respect for each other through the course of multiple team experiences. As a result, they are open to each other's ideas and listen carefully when colleagues make suggestions. Such interaction crosses disciplines, as well, with writers offering advice to lighting specialists, for example. The diversity of a team and the free flow of ideas and information stimulates creativity and enhances the team's effectiveness. Nonetheless, team meetings can be noisy and difficult on occasion, as members staunchly defend their creative ideas and argue over different approaches.

Since Imagination was established in 1978, its talented teams have tackled a wide range of design challenges. One team created the lighting design for Disney cruise ships; another created the dinosaur exhibit for the Natural History Museum in London; yet another designed the Millennium Dome Journey Zone building and exhibit content for corporate sponsor Ford Motor. The company has even worked with clients to train the personnel who staff the places it has designed, to ensure that the entire experience lives up to the goals set at the start of the project. Thanks to total teamwork, Imagination continues to build on its rich internal resources to meet clients' goals in new and exciting ways.

Case Questions

1. What role does conflict play in stimulating creativity at Imagination?
2. Why do Imagination's teams function well without formal leadership?
3. What factors appear to be increasing the cohesiveness of Imagination's teams?

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PART SIX

The Controlling Process



CHAPTER 20

Basic Elements of Control

CHAPTER 21

Managing Operations, Quality, and Productivity

CHAPTER 22

Managing Information and Information Technology





Basic Elements of Control

OPENING INCIDENT

Waste Management, started in 1971, is one of the world's largest private waste management companies. The firm does business in the United States, Canada, and Europe and, in 1998, earned more than $12 billion in revenues. The company has an excellent reputation for handling trash disposal efficiently and for effectively managing recycling programs. Unfortunately, however, Waste Management's own operations are currently in such disarray that its managers are having to focus most of their energies on sorting out the firm's own waste.

The company's problems first became public in 1997 when an interim CEO took over company reins. As it turned out, massive accounting problems had overstated the firm's earnings for years and its stock was taking a nosedive. An intensive audit seemed to rectify the situation, however, and in 1998 senior management at Waste Management agreed to merge with a smaller but fast-growing competitor named USA Waste Services. They also agreed to put USA Waste's respected but inexperienced CEO in charge of the new combined company.

For a while everything seemed to be working out well. The new company, which kept the Waste Management moniker, was attracting new business and reporting optimistic business forecasts for future revenues and profit. But in late 1999 everything came crashing down again. The original problems at Waste Management had not been corrected at all, and as a result of the merger, the situation had quickly gone from bad to worse!

One major problem the firm was experiencing was that, in addition to the big merger between Waste Management and USA Waste, the firm had also acquired literally dozens of other smaller businesses during a short period of time. But the firm did not appoint a senior executive to oversee the integration of these various businesses and, as a result, some operations were being poorly merged, some were being inexplicably shut down, and others remained in competition with one another.

Costs were also not being closely monitored. For example, even though USA Waste had put down a $2 million nonrefundable deposit for a new $30 million corporate jet for the CEO's use, after the merger a new $40 million jet was ordered because the merger would result in even more travel demands for the CEO. And after the firm failed to meet its earning estimates in the second quarter of 1999, no one at

"I'm not proud of the fact that, in retrospect, we didn't know what the hell was going on."

—Roderick M. Hills, Waste Management board member

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Explain the purpose of control, identify different types of control, and describe the steps in the control process.
- Identify and explain the three forms of operations control.
- Describe budgets and other tools of financial control.
- Identify and distinguish between two opposing forms of structural control.
- Discuss the relationship between strategy and control, including international strategic control.
- Identify characteristics of effective control, why people resist control, and how managers can overcome this resistance.

the company could adequately explain why!

Finally, just as the true nature of the crisis was becoming obvious, the CEO was diagnosed with a serious brain tumor. But relying on his assurances that he would return to work shortly, Waste Management's board took no action and allowed the firm to continue to drift. Only after it became clear that he would not be able to resume working did the board take any action to reestablish control. So in early 2000 senior members of the board took control of the firm again and set about straightening out what could only be called a big mess. Indeed, so extensive were the problems at Waste Management that when new audits were called for, Arthur Andersen assigned 1,160 auditors to the account.

As the numbers started rolling in, Waste Management executives began to recognize the severity of their problems—$211 million in uncollectible bills, $305 million in unrecorded expenses, and $226 million in miscellaneous costs. All told, accounting irregularities resulted in $1.76 billion in charges. And finally, Waste Management's board thinks it has identified all the major problems and either corrected them or at least put them on the road to recovery. Of course, it is not the first time they thought they had turned things around, so investors are keeping a wary eye on things.[1]



CHAPTER OUTLINE

- **The Nature of Control in Organizations**
  - The Purpose of Control
  - Types of Control
  - Steps in the Control Process
- **Operations Control**
  - Preliminary Control
  - Screening Control
  - Postaction Control
- **Financial Control**
  - Budgetary Control
  - Other Tools of Financial Control
- **Structural Control**
  - Bureaucratic Control
  - Clan Control
- **Strategic Control**
  - Integrating Strategy and Control
  - International Strategic Control
- **Managing Control in Organizations**
  - Characteristics of Effective Control
  - Resistance to Control
  - Overcoming Resistance to Control

Senior management at Waste Management has failed at one of the most fundamental management responsibilities—control. In general, the CEO did a poor job of monitoring costs and keeping the organization on track, and the board of directors failed to monitor the performance and activities of the CEO and other top managers adequately. Effective control helps managers decide where they want their business to go, point it in that direction, and create systems to keep it on track. Ineffective control, meanwhile, can result in a lack of focus, weak direction, and poor overall performance.

As we discussed in Chapter 1, control is one of the four basic managerial functions that provide the organizing framework for this book. This chapter is the first of three devoted to this important area. In the first section of the chapter, we explain the purpose of control. We then look at types of control and the steps in the control process. The rest of the chapter examines the four levels of control most organizations must employ to remain effective: operations, financial, structural, and strategic control. We conclude by discussing the characteristics of effective control, noting why some people resist control, and describing what organizations can do to overcome this resistance. The remaining two chapters in this part focus on managing operations and managing information.

■ The Nature Control in Organizations

control The regulation of organizational activities so that some targeted element of performance remains within acceptable limits

Control is the regulation of organizational activities so that some targeted element of performance remains within acceptable limits. Without this regulation, organizations have no indication of how well they perform in relation to their goals. Like a ship's rudder, control keeps the organization moving in the proper direction. At any point in time, it compares where the organization is in terms of performance (financial, productive, or otherwise) to where it is supposed to be. Control provides an organization with a mechanism for adjusting its course if performance falls outside acceptable boundaries. For example, Federal Express has a performance goal of delivering 99 percent of its packages on time. If on-time deliveries fall to 97 percent, control systems will signal the problem to managers so they can make necessary adjustments in operations to regain the target level of performance. An organization without effective control procedures is not likely to reach its goals—or if it does reach them, to know that it has! *Today's Management Issues* discusses the nature of control in e-businesses.

The Purpose of Control

As Figure 20.1 illustrates, control provides an organization with ways to adapt to environmental change, to limit the accumulation of error, to cope with organizational complexity, and to minimize costs. These four functions of control are worth a closer look.

TODAY'S MANAGEMENT ISSUES

E-BUSINESSES TIGHTEN UP FOR SURVIVAL

What happens when dot-com pandemonium dies down and e-businesses have to face fiscal reality? In the early stages of Internet fever, many e-businesses spent lavishly on advertising, staffing, offices, and other items. Growth potential seemed unlimited, and venture capitalists were happy to fund promising start-ups. As competition increased and profitability continued out of reach, however, more e-businesses felt pressure to impose or tighten controls to survive. For some firms—even those as young as one or two years old—the control measures were too little and too late.

One common way of minimizing costs, for on-line and off-line businesses alike, is to lower payroll expenses. The search portal AltaVista and the toy retail site KBKids are two of many Internet-based businesses that have taken this approach. During one six-month period, e-businesses laid off nearly 5,400 employees, a trend that is expected to continue as the sector matures. Still, layoffs aren't always enough to save companies that compete in the complex and dynamic on-line environment. Look at the short history of eParties, a party-planning web site. The firm opened for business on the Web in December 1999; by June 2000, it had fired its entire workforce of twenty-nine and agreed to be acquired by eToys, an on-line toy retailer.

E-businesses can target other areas for expense control as well. Streamline.com, an on-line grocer, has tried to avoid layoffs by cutting back spending on facilities, for example. At the same time, the firm has pushed hard to boost sales by bringing its average grocery order up to $120. Pushed to the brink by ongoing financial obligations, however, Streamline.com has publicly said that it needs a major cash infusion to stay afloat. Whether Streamline winds up as a division of a larger company or becomes another dot-com casualty, along with Boo.com, BBQ.com, and other defunct e-businesses, its rocky road emphasizes the critical need for effective control from the very start.

Dot-coms are merely taking the next evolutionary step where the companies that do not produce are sorted out. It seems as if this sector may have reached this stage faster than any other in recent memory.
—John Challenger, CEO of Challenger, Gray & Christmas*

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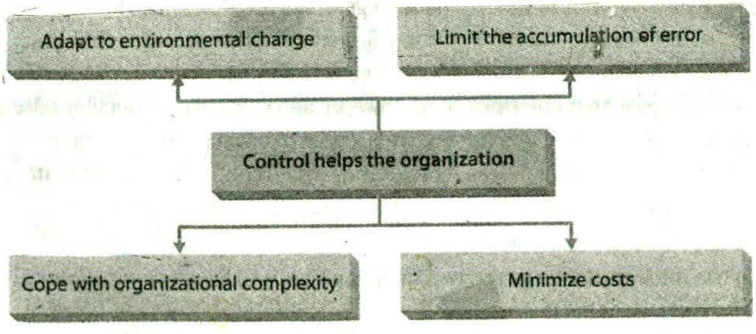
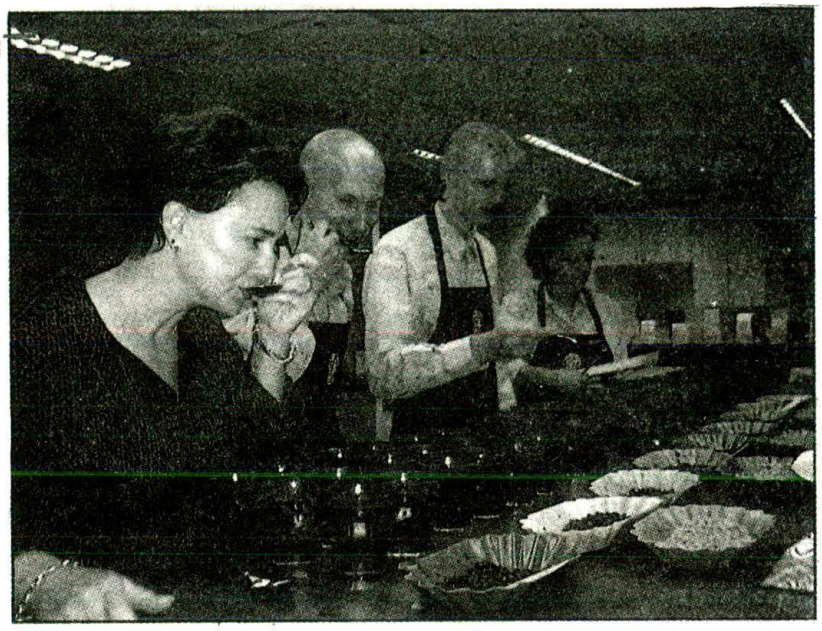


Figure 20.1

The Purpose of Control

Control is one of the four basic management functions in organizations. The control function, in turn, has four basic purposes. Properly designed control systems can fulfill each of these purposes.



Control plays a number of important purposes in organizations. Starbucks, for example, takes pride in the quality of coffees it serves and works to insure that they meet various quality standards for freshness, temperature, taste, and strength. To help uphold these quality standards, coffee tasters like Mary Williams sample as many as 300 cups of coffee a day for Starbucks. This continuous scrutiny helps the firm catch any problems in roasting, grinding, or brewing that may have inadvertently occurred.

Adapting to Environmental Change In today's complex and turbulent business environment, all organizations must contend with change.[2] If managers could establish goals and achieve them instantaneously, control would not be needed. But between the time a goal is established and the time it is reached, many events in the organization and its environment can disrupt movement toward the goal—or even to change the goal itself. A properly designed control system can help managers anticipate, monitor, and respond to changing circumstances.[3] In contrast, an improperly designed system can result in organizational performance that falls far below acceptable levels.

For example, Michigan-based Metalloy, a forty-six-year-old, family-run metal casting company, signed a contract to make engine-seal castings for NOK, a big Japanese auto parts maker. Metalloy was satisfied when its first five-thousand-unit production run yielded 4,985 acceptable castings and only 15 defective ones. NOK was quite unhappy with this performance, however, and insisted that Metalloy raise its standards. In short, global quality standards are such that customers demand near-perfection from their suppliers. A properly designed control system can help managers such as those at Metalloy stay better attuned to rising standards.

Limiting the Accumulation of Error Small mistakes and errors do not often inflict serious damage to the financial health of an organization. Over time, however, small errors may accumulate and become very serious. For example, Whistler Corporation, a large radar detector manufacturer, was once faced with such rapidly

escalating demand that it essentially stopped worrying about quality. The defect rate rose from 4 percent to 9 percent to 15 percent, and eventually reached 25 percent. One day, a manager realized that one hundred of the firm's 250 employees were spending all their time fixing defective units and that $2 million worth of inventory was awaiting repair. Had the company adequately controlled quality as it responded to increased demand, the problem would have never reached such proportions. Similarly, Fleetwood Enterprises, a large manufacturer of recreational vehicles, has suffered because its managers did not adequately address several small accounting and production problems years ago. These small problems have now grown into large ones, and the firm is struggling with how to correct them.[4]

Coping with Organizational Complexity When a firm purchases only one raw material, produces one product, has a simple organization design, and enjoys constant demand for its product, its managers can maintain control with a very basic and simple system. But a business that produces many products from myriad raw materials and has a large market area, a complicated organization design, and many competitors needs a sophisticated system to maintain adequate control. In part, this fact explains what happened at Waste Management—after the firm merged with USA Waste, the new enterprise was so large and complex that the existing control systems were simply inadequate.

Minimizing Costs When it is practiced effectively, control can also help reduce costs and boost output. For example, Georgia-Pacific Corporation, a large wood products company, learned of a new technology that could be used to make thinner blades for its saws. The firm's control system was used to calculate the amount of wood that could be saved from each cut made by the thinner blades relative to the costs used to replace the existing blades. The results have been impressive—the wood that is saved by the new blades each year fills eight hundred railcars. As Georgia-Pacific discovered, effective control systems can eliminate waste, lower labor costs, and improve output per unit of input. Similarly, the CEO of Travelers' Insurance decided that a $60,000 cost for repairing a broken fountain in front of company headquarters was excessive and instead spent only $20,000 to have it filled and planted with a low-maintenance tree.[5] And Coca-Cola recently announced that it would lay off six thousand workers to reduce its labor costs.[6]

Types of Control

The examples of control given thus far have illustrated the regulation of several organizational activities, from producing quality products to coordinating complex organizations. Organizations practice control in several different areas and at different levels, and the responsibility for managing control is widespread.

Areas of Control Control can focus on any area of an organization. Most organizations define areas of control in terms of the four basic types of resources they use: physical, human, information, and financial resources.[7] Control of physical resources includes inventory management (stocking neither too few nor too many

units in inventory), quality control (maintaining appropriate levels of output quality), and equipment control (supplying the necessary facilities and machinery). Control of human resources includes selection and placement, training and development, performance appraisal, and compensation. Control of information resources includes sales and marketing forecasting, environmental analysis, public relations, production scheduling, and economic forecasting. Financial control involves managing the organization's debt so that it does not become excessive, ensuring that the firm always has enough cash on hand to meet its obligations but that it does not have excess cash in a checking account, and that receivables are collected and bills paid on time.

operations control Focuses on the processes the organization uses to transform resources into products or services

financial control Concerned with the organization's financial resources

structural control Concerned with how the elements of the organization's structure are serving their intended purposes

strategic control Focuses on how effectively the organization's corporate, business, and functional strategies are succeeding in helping the organization meet its goals

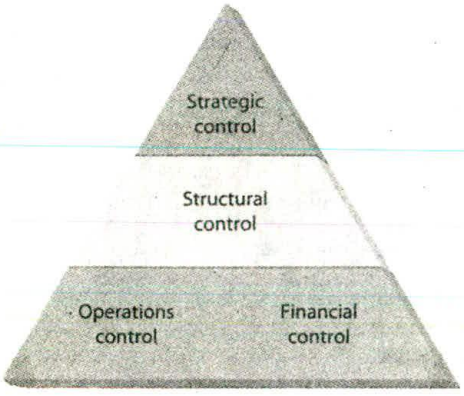
In many ways, the control of financial resources is the most important area because financial resources are related to the control of all the other resources in an organization: too much inventory leads to storage costs; poor selection of personnel leads to termination and rehiring expenses; inaccurate sales forecasts lead to disruptions in cash flows and other financial effects. Financial issues tend to pervade most control-related activities. Indeed, financial issues form the basic problem faced by Waste Management. Various inefficiencies and operating blunders put the company in a position where it was losing money everywhere but lacked sufficient control to pinpoint specific problems.

Levels of Control Control can be broken down by area, as Figure 20.2 shows, and it can also be broken down by level within the organizational system. **Operations control** focuses on the processes the organization uses to transform resources into products or services (quality control is one type of operations control).[8] **Financial control** is concerned with the organization's financial resources. Monitoring receivables to make sure customers are paying their bills on time is an example of financial control. **Structural control** is concerned with how the elements of the organization's structure are serving their intended purposes. Monitoring the administrative ratio to make sure staff expenses do not become excessive is an example of structural control. Finally, **strategic control** focuses on how effectively the organization's corporate, business, and functional strategies are succeeding in helping the organization meet its goals. For example, if a corporation has been unsuccessful in implementing its strategy of related diversification, its managers need to identify the reasons and either change the strategy or renew their efforts to implement it. We discuss these four levels of control more fully later in this chapter.

Figure 20.2

Levels of Control

Managers use control at several different levels. The most basic levels of control in organizations are strategic, structural, operations, and financial control. Each level must be managed properly if control is to be most effective.



Responsibilities for Control Traditionally, managers have been responsible for overseeing the wide array of control systems and concerns in organizations. They decide which types of control the organization will use, and they implement control systems and take actions based on the information provided by control systems. Thus, ultimate responsibility for control rests with all managers throughout an organization.

Most larger organizations also have one or more specialized managerial positions called controller. A **controller** is responsible for helping line managers with their control activities, for coordinating the organization's overall control system, and for gathering and assimilating relevant information. Many businesses that use an H-form or M-form organization design have several controllers: one for the corporation and one for each division. The job of controller is especially important in organizations where control systems are complex.[9] As part of its turnaround effort, Waste Management has established controller positions at each of its locations—some six hundred in all.

controller A position in organizations that helps line managers with their control activities

In addition, many organizations are also beginning to use operating employees to help maintain effective control. Indeed, employee participation is often used as a vehicle for allowing operating employees an opportunity to help facilitate organizational effectiveness. For example, Whistler Corporation increased employee participation in an effort to turn its quality problems around. As a starting point, the quality control unit, formerly responsible for checking product quality at the end of the assembly process, was eliminated. Next, all operating employees were encouraged to check their own work and told that they would be responsible for correcting their own errors. As a result, Whistler has eliminated its quality problems and is now highly profitable once again.

Steps in the Control Process

Regardless of the type or levels of control systems an organization needs, there are four fundamental steps in any control process.[10] These steps are illustrated in Figure 20.3.

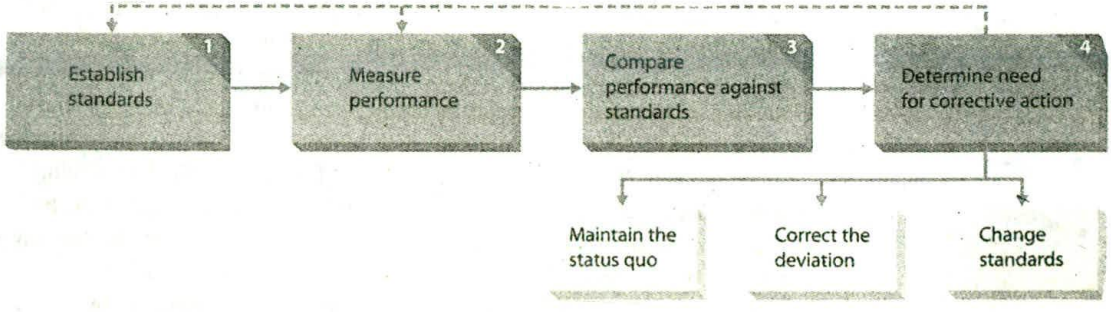
Establish Standards The first step in the control process is establishing standards. A **control standard** is a target against which subsequent performance will

control standard A target against which subsequent performance will be compared

Figure 20.3

Steps in the Control Process

Having an effective control system can help ensure that an organization achieves its goals. Implementing a control system, however, is a systematic process that generally proceeds through four interrelated steps.



be compared.[11] Employees at Taco Bell fast-food restaurant, for example, work toward the following service standards:

1. A minimum of 95 percent of all customers will be greeted within three minutes of their arrival.
2. Preheated tortilla chips will not sit in the warmer more than thirty minutes before they are served to customers.
3. Empty tables will be cleaned within five minutes after being vacated.

Standards established for control purposes should be expressed in measurable terms. Note that standard 1 above has a time limit of three minutes and an objective target of 95 percent of all customers. In standard 3, the objective target is implied: "all" empty tables.

Control standards should also be consistent with the organization's goals. Taco Bell has organizational goals involving customer service, food quality, and restaurant cleanliness. A control standard for a retailer like Home Depot should be consistent with its goal of increasing its annual sales volume by 25 percent within five years. A hospital trying to shorten the average hospital stay by a patient will have control standards that reflect current averages. A university reaffirming its commitment to academics might adopt a standard of graduating 80 percent of its student athletes within five years of their enrollment. Control standards can be as narrow or as broad as the level of activity to which they apply and must follow logically from organizational goals and objectives.

A final aspect of establishing standards is to identify performance indicators. Performance indicators are measures of performance that provide information directly relevant to what is being controlled. For example, suppose an organization is following a tight schedule in building a new plant. Relevant performance indicators could be buying a site, selecting a building contractor, and ordering equipment. Monthly sales increases are not, however, directly relevant. On the other hand, if control is being focused on revenue, monthly sales increases are relevant, whereas buying land for a new plant is less relevant.

Measure Performance The second step in the control process is measuring performance. Performance measurement is a constant, ongoing activity for most organizations. For control to be effective, performance measures must be valid. Daily, weekly, and monthly sales figures measure sales performance, and production performance may be expressed in terms of unit cost, product quality, or volume produced. Employee performance is often measured in terms of quality or quantity of output but, for many jobs, measuring performance is not so straightforward.

A research and development scientist at Merck, for example, may spend years working on a single project before achieving a breakthrough. A manager who takes over a business on the brink of failure may need months or even years to turn the failure around. Valid performance measurement, however difficult to obtain, is nevertheless vital in maintaining effective control, and performance indicators usually can be developed. The scientist's progress, for example, may be partially assessed by peer review, and the manager's success may be evaluated by her ability to convince creditors that she will eventually be able to restore profitability.

Compare Performance Against Standards The third step in the control process is comparing measured performance against established standards. Performance may be higher than, lower than, or identical to the standard. In some cases comparison is easy. The goal of each product manager at General Electric is to make the product either number one or number two (on the basis of total sales) in its market. Since this standard is clear and total sales easy to calculate, it is relatively simple to determine whether this standard has been met. Sometimes, however, comparisons are less clear-cut. If performance is lower than expected, the question is, How much deviation from standards can be allowed before taking remedial action? For example, is increasing sales by 7.9 percent when the standard was 8.0 percent close enough?

The timetable for comparing performance to standards depends on various factors, including the importance and complexity of what is being controlled. For longer-run and higher-level standards, comparisons may be appropriate annually. In other circumstances, more frequent comparisons are necessary. For example, a business with a cash shortage may need to monitor its on-hand cash reserves daily.

Determine Need for Corrective Action The final step in the control process is determining the need for corrective action. Decisions regarding corrective actions draw heavily on a manager's analytic and diagnostic skills. After comparing performance against control standards, one of three actions is appropriate: maintain the status quo (do nothing), correct the deviation, or change the standard. Maintaining the status quo is preferable when performance essentially matches the standard, but it is more likely that some action will be needed to correct a deviation from the standard.

Sometimes, performance that is higher than expected may also cause problems for organizations. For example, when Chry ler first introduced its popular PT Cruiser, demand was so strong there were waiting lists and many customers were willing to pay more than the suggested retail price to obtain a car. The company was reluctant to increase production, primarily because it feared demand would eventually drop. At the same time, however, it didn't want to alienate potential customers. Consequently, Chrysler decided to simply reduce its advertising. This curtailed demand a bit and limited customer frustration.

Changing an established standard usually is necessary if it was set too high or too low at the outset. This requirement is apparent if large numbers of employees routinely beat the standard by a wide margin or if no employees ever meet the standard. Also, standards that seemed perfectly appropriate when they were established may need to be adjusted because circumstances have since changed.

MANAGEMENT IMPLICATIONS Managers should understand the various fundamental purposes of control. In addition, they should be familiar with the types of control in organizations, especially those that are most relevant to their own work. Managers should also accept responsibility for their role in the organization's control functions. Finally, they should be thoroughly knowledgeable about the steps in the control process.

■ Operations Control



Preliminary control focuses on the resources an organization brings in from the environment. Cree, Inc., for instance, is the leading producer of the blue, light-emitting diodes that help backlight car dashboards, cell phone displays, and other electronic devices. This Cree employee is inspecting a new shipment of semiconductors the firm received from one of its suppliers to make sure that they meet the firm's high quality standards.

One of the four levels of control practiced by most organizations, operations control, is concerned with the processes the organization uses to transform resources into products or services. As Figure 20.4 shows, the three forms of operations control—preliminary, screening, and postaction—occur at different points in relation to the transformation processes used by the organization.

Preliminary Control

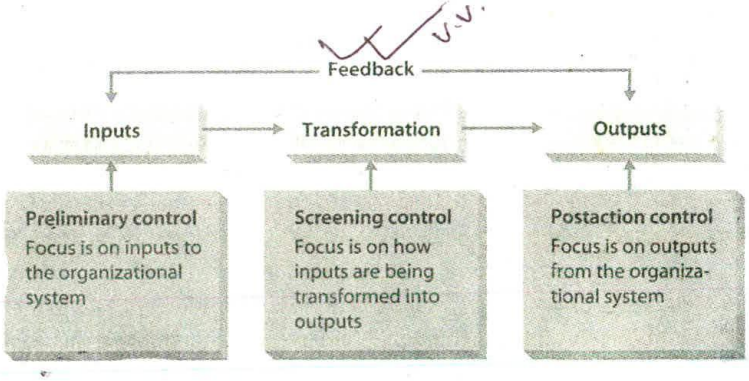
Preliminary control concentrates on the resources—financial, material, human, and information—that the organization brings in from the environment. Preliminary control attempts to monitor the quality or quantity of these resources before they enter the organization. Firms like PepsiCo and General Mills hire only college graduates for their management training program, and even then only after applicants satisfy several interviewers and selection criteria. In this way, they control the quality of the human resources entering the organization. When Sears orders merchandise to be manufactured under its own brand name, it specifies rigid standards of quality, thereby controlling physical inputs. Organizations also control financial and information resources. For example, privately held companies like UPS and Mars limit the extent to which outsiders can buy their stock, and tele-

preliminary control Attempts to monitor the quality or quantity of financial, material, human, and information resources before they actually become part of the system

Figure 20.4

Forms of Operations Control

Most organizations develop multiple control systems that incorporate all three basic forms of control. For example, the publishing company that produced this book screens inputs by hiring only qualified persons, typesetters, and printers (preliminary control). In addition, quality is checked during the transformation process, such as after the manuscript is typeset (screening control), and the outputs—printed and bound books—are checked before they are shipped from the bindery (postaction control).



MANAGEMENT INFOTECH

E-Purchasing Keeps Inputs Under Control

Buying from other businesses is big business. Every year, companies buy more than $7 trillion worth of parts, supplies, and services from suppliers around the world. Not so long ago, purchasing agents and other buyers had to hunt through mountains of supplier catalogs and make dozens of phone calls to track down stock numbers and quotes before writing purchase orders. Now, by using technology to tighten control of the purchasing function, a company can take much of the time and the hassle out of the process of acquiring inputs—and can expand its scope to scour the globe for the lowest prices or the quickest delivery times.

On the CheMatch.com web site, for example, buyers can see current market prices and availability for chemicals such as benzene and order on-line with a few keystrokes. On the Petrocosm Marketplace site, buyers for energy companies can instantly compare competitive prices on drilling machinery and other supplies, then place orders on-line. On FreeMarkets.com, buyers can arrange reverse auctions in which suppliers bid for the right to provide a particular input.

The savings can be enormous, as the following examples show. John Deere's e-purchasing initiative is expected to shave 5 percent off its annual cost of parts and supplies. Over the course of five years, the farm-equipment manufacturer will save a total of $1 billion, giving its bottom line a healthy boost. What's more, Deere is achieving these impressive results while reducing the size of its purchasing department by 25 percent. United Technologies, an energy company, has slashed its input expenses by almost $800 million. IBM now uses the Web to buy 90 percent of its supplies, streamlining its control of a $45 million supply budget. And on-line reverse auctions have helped the Naval Supply Systems Command save 22 percent on bunk units purchased for U.S. Navy ships. Tighter control, increased efficiency, and lower costs—the combination makes e-purchasing an attractive technique for businesses of any size.

With anonymity, you can move in the market Without moving the market. It's a lot easier to click a mouse than call around the world.

—Carl McCutcheon, CEO of CheMatch.com*

References: Del Jones, "E-Purchasing Saves Businesses Billions," *USA Today*, February 7, 2000, pp. 1B, 2B (*quote on p. 2B); "Contract Awarded in NAVSUP's Second Reverse Auction," *NAVICP*, August 3, 2000, http://www.navicp.navy.mil/news/reverseauction2.htm (read on-line October 2, 2000).

vision networks verify the accuracy of news stories before they are broadcast. *Management Infotech* explains how some businesses today are using electronic purchasing as part of their preliminary control processes.

Screening Control

Screening control focuses on meeting standards for product and/or service quality or quantity during the actual transformation process itself. Screening control relies heavily on feedback processes. For example, in a Compaq Computer factory, computer system components are checked periodically as each unit is being assembled. This checking is done to ensure that all the components assembled up to that point are working properly. The periodic quality checks provide feedback to workers so they know what, if any, corrective actions to take. Because they are useful in identifying the cause of problems, screening controls tend to be used more often than other forms of control.

screening control Relies heavily on feedback processes during the transformation process

More and more companies are adopting screening controls because they are an effective way to promote employee participation and catch problems early in the overall transformation process. For example, Corning adopted screening controls for use in manufacturing television glass. In the past, television screens were inspected only after they were finished. Unfortunately, over 4 percent of them were later returned by customers because of defects. Now the glass screens are inspected at each step in the production process rather than at the end, and the return rate from customers has dropped to .03 percent.

Postaction Control

postaction control Monitors the outputs or results of the organization after the transformation process is complete

Postaction control focuses on the outputs or results of the organization after the transformation process is complete. Corning's old system was postaction control—final inspection after the product is completed. While Corning abandoned its postaction control system, it still may be an effective method of control, primarily if a product can be manufactured in only one or two steps or if the service is fairly simple and routine. Although postaction control alone may not be as effective as preliminary or screening control, it can provide management with information for future planning. For example, if a quality check of finished goods indicates an unacceptably high defective rate, the production manager knows that he or she must identify the causes and take steps to eliminate them. Postaction control also provides a basis for rewarding employees. Recognizing that an employee has exceeded personal sales goals by a wide margin, for example, may alert the manager that a bonus or promotion is in order.



Postaction control focuses on the outputs of an organization after the transformation process is complete. These Ford inspectors, for example, are taking a close look at a freshly minted Mustang that has just rolled off the assembly line. While the car received numerous screening control inspections as it was being built, this final inspection is one last step intended to insure that no major defects or other problems have been missed.

Most organizations use more than one form of operations control. For example, Honda's preliminary control includes hiring only qualified employees and specifying strict quality standards when ordering parts from other manufacturers. Honda uses numerous screening controls in checking the quality of components during assembly of cars. A final inspection and test drive as each car rolls off the assembly line is part of the company's postaction control.[12] Indeed, most successful organizations employ a wide variety of techniques to facilitate operations control.

MANAGEMENT IMPLICATIONS Managers should know the four basic levels of control used in organizations. They should also understand that many organizations use more than one level of control simultaneously.

■ Financial Control

Financial control is the control of financial resources as they flow into the organization (i.e., revenues, shareholder investments), are held by the organization (i.e., working capital, retained earnings), and flow out of the organization (i.e., payment of expenses). Businesses must manage their finances so that revenues are sufficient to cover expenses and still return a profit to the firm's owners. Not-for-profit organizations such as universities have the same concerns: their revenues (from tax dollars or tuition) must cover operating expenses and overhead. Dickson Poon is a Chinese investor who has profited by relying heavily on financial control. He buys distressed up-scale retailers like Britain's Harvey Nichols and the U.S.'s Barney's, imposes strict financial controls, and begins generating hefty profits.[13] A complete discussion of financial management is beyond the scope of this book, but we will examine the control provided by budgets and other financial control tools.

financial control Control of financial resources as they flow into the organization, are held by the organization, and flow out of the organization



Well-established and monitored financial regulations in most of today's developed economies ensure that financial control systems can be easily followed and readily interpreted and evaluated. But less certainty exists in some of today's developing economies. The Almaty stock exchange in Kazakhstan is subject to few rules and has no operating procedures. Not surprisingly, the exchange has had difficulty in attracting foreign investors. But as these economies mature and continue to develop, new controls will be created and investors can have more faith in the financial information they are given.

Budgetary Control

A **budget** is a plan expressed in numerical terms.[14] Organizations establish budgets for work groups, departments, divisions, and the whole organization. The usual time period for a budget is one year, although breakdowns of budgets by the quarter or month are also common. Budgets are

budget A plan expressed in numerical terms

generally expressed in financial terms, but they may occasionally be expressed in units of output, time, or other quantifiable factors.

Because of their quantitative nature, budgets provide yardsticks for measuring performance and facilitate comparisons across departments, between levels in the organization, and from one time period to another. Budgets serve four primary purposes. They help managers coordinate resources and projects (because they use a common denominator, usually dollars). They help define the established standards for control. They provide guidelines about the organization's resources and expectations. Finally, budgets enable the organization to evaluate the performance of managers and organizational units.

Types of Budgets Most organizations develop and make use of three different kinds of budgets—financial, operating, and nonmonetary. Table 20.1 summarizes the characteristics of each of these.

A financial budget indicates where the organization expects to get its cash for the coming time period and how it plans to use it. Since financial resources are critically important, the organization needs to know where those resources will be coming from and how they are to be used. The financial budget provides answers to both these questions. Usual sources of cash include sales revenue, short- and long-term loans, the sale of assets, and the issuance of new stock.

For years Exxon Mobil has been very conservative in its capital budgeting. As a result, the firm has amassed a huge financial reserve but has been overtaken in

Table 20.1

Types of Budgets

Organizations use various types of budgets to help manage their control function. The three major categories of budgets are financial, operating, and nonmonetary budgets. There are several different types of budgets in each category. Each budget must be carefully matched with the specific function being controlled to be most effective.

Type of Budget	What Budget Shows
Financial budget	**Sources and uses of cash**
Cash-flow or cash budget	All sources of cash income and cash expenditures in monthly, weekly, or daily periods
Capital expenditures budget	Costs of major assets such as a new plant, machinery, or land
Balance sheet budget	Forecast of the organization's assets and liabilities in the event all other budgets are met
Operating budget	**Planned operations in financial terms**
Sales or revenue budget	Income the organization expects to receive from normal operations
Expense budget	Anticipated expenses for the organization during the coming time period
Profit budget	Anticipated differences between sales or revenues and expenses
Nonmonetary budget	**Planned operations in nonfinancial terms**
Labor budget	Hours of direct labor available for use
Space budget	Square feet or meters of space available for various functions
Production budget	Number of units to be produced during the coming time period

sales by Royal Dutch/Shell. More recently, Exxon Mobil has decided to loosen its purse strings and begin budgeting more for capital expenditures. For example, while Exxon Mobil's capital budget was less than $8 billion in 1994, managers increased this budget to $11 billion in 2000, and plan to increase it to around $14 billion by the year 2002.[15]

An operating budget is concerned with planned operations within the organization. It outlines what quantities of products and/or services the organization intends to create and what resources will be used to create them. IBM creates an operating budget that specifies how many of each model of its personal computer will be produced each quarter.

A nonmonetary budget is simply a budget expressed in nonfinancial terms, such as units of output, hours of direct labor, machine hours, or square-foot allocations. Nonmonetary budgets are most commonly used by managers at the lower levels of an organization. For example, a plant manager can schedule work more effectively knowing that he or she has eight thousand labor hours to allocate in a week, rather than trying to determine how to best spend $76,451 in wages in a week.

Developing Budgets Traditionally, budgets were developed by top management and the controller and then imposed on lower-level managers. Although some organizations still follow this pattern, many contemporary organizations now allow all managers to participate in the budget process. As a starting point, top management generally issues a call for budget requests, accompanied by an indication of overall patterns the budgets may take. For example, if sales are expected to drop in the next year, managers may be told up front to prepare for cuts in operating budgets.

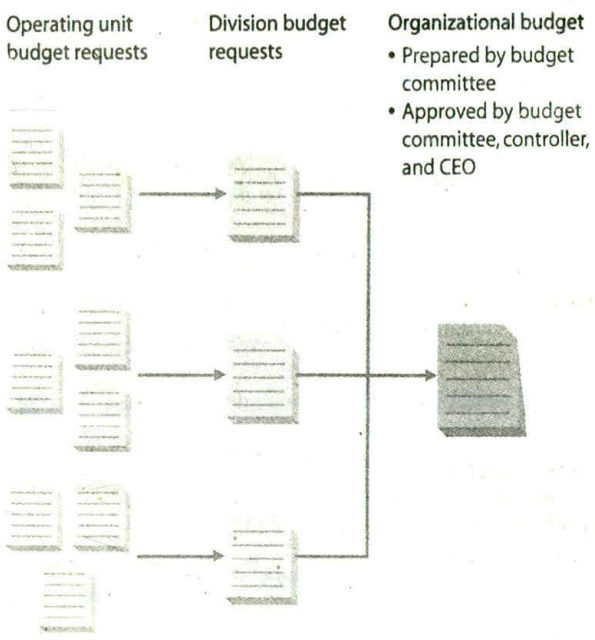
As Figure 20.5 shows, the heads of each operating unit typically submit budget requests to the head of their division. An operating unit head might be a department manager in a manufacturing or wholesaling firm or a program director in a social service agency. The division heads might include plant managers, regional sales managers, or college deans. The division head integrates and consolidates the budget requests from operating unit heads into one overall division budget request. A great deal of interaction among managers usually takes place at this stage, as the division head coordinates the budgetary needs of the various departments.

Division budget requests are then forwarded to a budget committee. The budget committee is usually composed of top managers. The committee reviews budget requests from several divisions and, once again, duplications and inconsistencies are corrected.

Figure 20.5 Im

Developing Budgets in Organizations

Most organizations use the same basic process to develop budgets. Operating units are requested to submit their budget requests to divisions. These divisions, in turn, compile unit budgets and submit their own budgets to the organization. An organizational budget is then compiled for approval by the budget committee, controller, and CEO.



Finally, the budget committee, the controller, and the CEO review and agree on the overall budget for the organization as well as specific budgets for each operating unit. These decisions are then communicated back to each manager.

Strengths and Weaknesses of Budgeting Budgets offer numerous advantages, but they also have weaknesses. On the plus side, budgets facilitate effective control. Placing dollar values on operations enables managers to monitor operations better and to pinpoint problem areas. Budgets also facilitate coordination and communication between departments because they express diverse activities in a common denominator (dollars). Budgets help maintain records of organizational performance and are logical complements to planning; that is, as managers develop plans they should simultaneously consider control measures to accompany them. Organizations can use budgets to link plans and control by first developing budgets as part of the plan and then using those budgets as part of control.

On the other hand, some managers apply budgets too rigidly. Budgets are intended to serve as frameworks, but managers sometimes fail to recognize that changing circumstances may warrant budget adjustments. The process of developing budgets can also be very time consuming. Finally, budgets may limit innovation and change. When all available funds are allocated to specific operating budgets, it may be impossible to procure additional funds to take advantage of an unexpected opportunity.

Indeed, for these very reasons, some organizations are working to scale back their budgeting system. While most organizations are likely to continue to use budgets, the goal is to make them less confining and rigid. For example, Xerox, 3M, and Digital Equipment have all cut back on their budgeting systems by reducing the number of budgets they generate and by injecting more flexibility into the budgeting process.[16]

Other Tools of Financial Control

Although budgets are the most common means of financial control, other useful tools are financial statements, ratio analysis, and financial audits. *Managing in an e-Business World* discusses some of the problems that today's businesses, especially e-commerce enterprises, face in accounting for intangible assets.

financial statement A profile of some aspect of an organization's financial circumstances

Financial Statements A **financial statement** is a profile of some aspect of an organization's financial circumstances. There are commonly accepted and required ways that financial statements should be prepared and presented.[17] The two most basic financial statements prepared and used by virtually all organizations are a balance sheet and an income statement.

balance sheet List of assets and liabilities of an organization at a specific point in time, usually the last day of an organization's fiscal year

The **balance sheet** lists the assets and liabilities of the organization at a specific point in time, usually the last day of an organization's fiscal year. For example, the balance sheet may summarize the financial condition of an organization on December 31, 2000. Most balance sheets are divided into current assets (assets that are relatively liquid, or easily convertible into cash), fixed assets (assets that are longer-term in nature and less liquid), current liabilities (debts and other obligations that must be paid in the near future), long-term liabilities (payable over an extended period of time), and stockholders' equity (the owners' claim against the assets).

MANAGING IN AN e-BUSINESS WORLD

ACCOUNTING FOR ACCOUNTING METHODS

When managers talk about the "bottom line" and the "P and L," they are talking about figures on their firms' financial statements. Managers have long used the income statement and other financial statements as essential tools of control, comparing this quarter's "P" (profit) or "L" (loss) to last quarter's results, for example. However, this static, highly regulated method of accounting for financial performance may need updating to reflect the way companies do business in the Internet age.

Professor Baruch Lev of New York University's Stern School of Business says that conventional financial statements make no allowance for valuable but completely intangible assets. Tangible assets like equipment are routinely listed and valued under the assets section of the balance sheet, but not intangibles such as the innovative methods used for new products, the strength of the brand, or the size of the customer base.

A few years ago, America Online (AOL) tried a new approach to account for the way it acquires new customers, a key asset because customers are the source of monthly subscription revenues. Instead of classifying customer acquisition tactics such as the distribution of free trial disks as expenses—the usual accounting method—AOL capitalized some of the costs to write them off over a longer period. Lower expenses made AOL's profitability look better, but financial analysts objected, and AOL was finally forced to expense the full costs on revised financial statements.

MicroStrategy, a software and Internet firm, faced a different accounting dilemma. After clinching a $50 million, multiyear deal covering programs and services, the company decided to show the revenue on its financial statements all at once rather than year by year. However, the U.S. Securities and Exchange Commission doesn't allow companies to account for revenue before it's actually collected, so MicroStrategy had to restate its sales figures—downward.

We are using a five-hundred-year-old system to make decisions in a complex business environment in which the essential assets that create value have fundamentally changed.

—Professor Baruch Lev of New York University's Stern School of Business*

Professor Lev suggests revamping accounting methods to show the financial value of intangible assets that boost the company's value. This technique would help managers of e-businesses do a better job of controlling those assets and would provide a standard method of presenting financial performance for review by investors and other stakeholders.

References: Alan M. Webber, "New Math for a New Economy," *Fast Company*, January–February 2000, pp. 214–224 (*quote on p. 217); Adam Zagorin, "The E-Numbers Game," *Time*, August 15, 2000, p. 66.

Whereas the balance sheet reflects a snapshot profile of an organization's financial position at a single point in time, the **income statement** summarizes financial performance over a period of time, usually one year. For example, the income statement might be for the period January 1, 2000, through December 31, 2000. The income statement summarizes the firm's revenues less its expenses to report net income (i.e., profit or loss) for the period. Information from the balance sheet and income statement is used in computing important financial ratios.

income statement A summary of financial performance over a period of time, usually one year

Ratio Analysis Financial ratios compare different elements of a balance sheet and/or income statement to one another. **Ratio analysis** is the calculation of one or more financial ratios to assess some aspect of the organization's financial health. Organizations use different financial ratios as part of financial control.

ratio analysis The calculation of one or more financial ratios to assess some aspect of the organization's financial health

For example, *liquidity ratios* indicate how liquid (easily converted into cash) an organization's assets are. *Debt ratios* reflect ability to meet long-term financial obligations. *Return ratios* show managers and investors how much return the organization is generating relative to its assets. *Coverage ratios* help estimate the organization's ability to cover interest expenses on borrowed capital. *Operating ratios* indicate the effectiveness of specific functional areas rather than the total organization. The Walt Disney Company relies heavily on financial ratios to keep its financial operations on track.[18]

audit An independent appraisal of an organization's accounting, financial, and operational systems

Financial Audits **Audits** are independent appraisals of an organization's accounting, financial, and operational systems. The two major types of financial audit are the external audit and the internal audit.

External audits are financial appraisals conducted by experts who are not employees of the organization.[19] External audits are typically concerned with determining that the organization's accounting procedures and financial statements are compiled in an objective and verifiable fashion. The organization contracts with certified public accountants (CPAs) for this service. The CPA's main objective is to verify for stockholders, the IRS, and other interested parties that the methods by which the organization's financial managers and accountants prepare documents and reports are legal and proper. External audits are so important that publicly held corporations are required by law to have external audits regularly, as assurance to investors that the financial reports are reliable. An external audit at U.S. Shoe Corporation once discovered some significant accounting irregularities in one of the firm's divisions. As a result, the firm was fined and had to revamp its entire accounting system.[20]

Some organizations are also starting to employ external auditors to review other aspects of their financial operations. For example, now there are auditing firms that specialize in checking corporate legal bills. An auditor for the Fireman's Fund Insurance Corporation uncovered several thousands of dollars in legal fee errors. Other auditors are beginning to specialize in real estate, employee benefits, and pension plan investments.[21]

Whereas external audits are conducted by external accountants, an *internal audit* is handled by employees of the organization. Its objective is the same as that of an external audit—to verify the accuracy of financial and accounting procedures used by the organization. Internal audits also examine the efficiency and appropriateness of financial and accounting procedures. Because the staff members who conduct them are permanent employees of the organization, internal audits tend to be more expensive than external audits. But employees, who are more familiar with the organization's practices, may also point out significant aspects of the accounting system besides its technical correctness. Large organizations such as Dresser Industries and Ford have internal auditing staffs that spend all their time conducting audits of different divisions and functional areas of the organizations. Smaller organizations may assign accountants to an internal audit group on a temporary or rotating basis.

MANAGEMENT IMPLICATIONS Regardless of their area of responsibility, all managers should understand the basics of financial control. In particular, they

need to know how budgets are used for control and how budgets are developed, and they must know about other tools of financial control.

■ Structural Control

Organizations can create designs for themselves that result in very different approaches to control. Two major forms of structural control, bureaucratic control and clan control, represent opposite ends of a continuum, as shown in Figure 20.6.[22] The six dimensions shown in the figure represent perspectives adopted by the two extreme types of structural control; that is, they have different goals, degrees of formality, performance focus, organization designs, reward systems, and levels of participation. Although a few organizations fall precisely at one extreme or the other, most tend toward one end but may have specific characteristics of either.

Bureaucratic Control

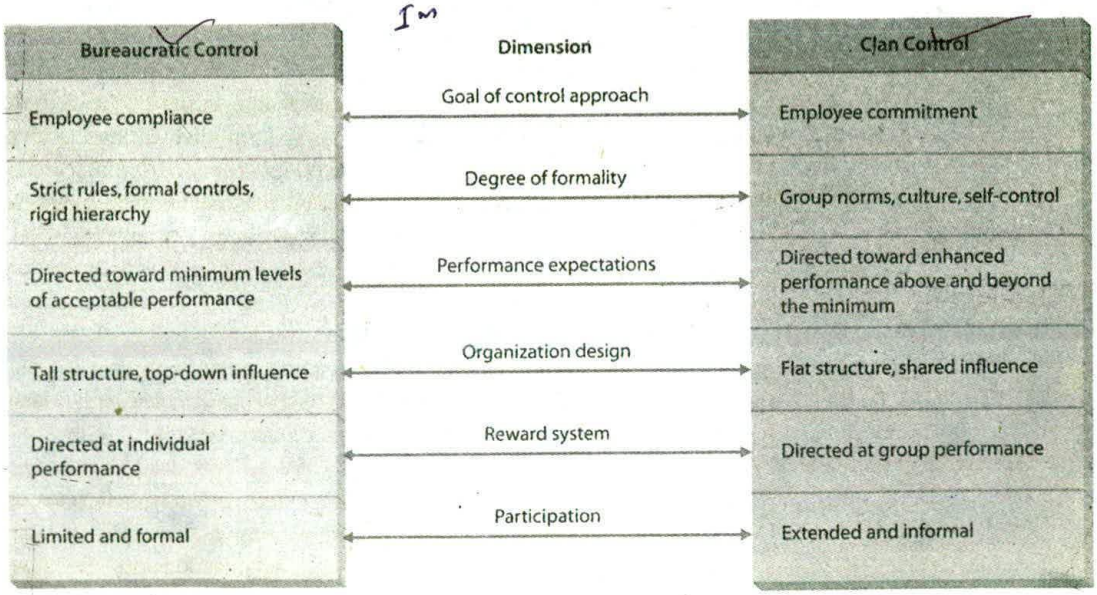
Bureaucratic control is an approach to organization design characterized by formal and mechanistic structural arrangements. As the term suggests, it follows the bureaucratic model. The goal of bureaucratic control is employee compliance.

bureaucratic control A form of organizational control characterized by formal and mechanistic structural arrangements

Figure 20.6

Organizational Control

Organizational control generally falls somewhere between the two extremes of bureaucratic and clan control. NBC television uses bureaucratic control, whereas Levi Strauss uses clan control.



Organizations that use it rely on strict rules and a rigid hierarchy, insist that employees meet minimally acceptable levels of performance, and often have a tall structure. They focus their rewards on individual performance and allow only limited and formal employee participation.

NBC television applies structural controls that reflect many elements of bureaucracy. The organization relies on numerous rules to regulate employee travel, expense accounts, and other costs. A new performance appraisal system precisely specifies minimally acceptable levels of performance for everyone. The organization's structure is considerably taller than those of the other major networks, and rewards are based on individual contributions. Perhaps most significantly, many NBC employees have argued that they have too small a voice in how the organization is managed.

In another example, a large oil company recently made the decision to allow employees to wear casual attire to work. But a committee then spent weeks developing a twenty-page set of guidelines on what was and was not acceptable. For example, denim pants are not allowed. Similarly, athletic shoes may be worn as long as they are not white. And all shirts must have a collar. Nordstrom, the department store chain, is also moving toward bureaucratic control as it works to centralize all its purchasing in an effort to lower costs.[23]

Clan Control

clan control An approach to organizational control characterized by informal and organic structural arrangements

Clan control, in contrast, is an approach to organizational design characterized by informal and organic structural arrangements. As Figure 20.6 shows, its goal is employee commitment to the organization. Accordingly, it relies heavily on group norms and a strong corporate culture, and gives employees the responsibility for controlling themselves. Employees are encouraged to perform beyond minimally acceptable levels. Organizations using this approach are usually relatively flat. They direct reward at group performance and favor widespread employee participation.

Levi Strauss practices clan control. The firm's managers use groups as the basis for work and have created a culture wherein group norms help facilitate high performance. Rewards are subsequently provided to the higher-performing groups and teams. The company's culture also reinforces contributions to the overall team effort, and employees have a strong sense of loyalty to the organization. Levi Strauss has a flat structure and power is widely shared. Employee participation is encouraged in all areas of operation. Another company that uses this approach is Southwest Airlines. When Southwest made the decision to "go casual," the firm resisted the temptation to develop dress guidelines. Instead, managers decided to allow employees to exercise discretion over their attire, and to deal with clearly inappropriate situations on a case-by-case basis as they arise.

MANAGEMENT IMPLICATIONS Managers should be familiar with the two basic forms of structural control used by organizations: bureaucratic and clan. They should also recognize which form their own organization uses, as well as why that particular form of control has evolved.

■ Strategic Control

Given the obvious importance of an organization's strategy, it is also important that the organization assess how effective that strategy is in helping the organization meet its goals.[24] To do so requires that the organization integrate its strategy and control systems. This requirement is especially relevant for the global organization.

Integrating Strategy and Control

Strategic control is aimed at ensuring that the organization is maintaining an effective alignment with its environment and moving toward achieving its strategic goals. Strategic control generally focuses on five aspects of organizations—structure, leadership, technology, human resources, and information and operational control systems. For example, an organization should periodically examine its structure to determine whether or not it is facilitating the attainment of the organization's strategic goals. Suppose a firm using a functional (U-form) design has an established goal of achieving a 20 percent sales growth rate per year. However, performance indicators show it is currently growing only at a rate of 10 percent per year. Detailed analysis might reveal that the current structure is inhibiting growth in some way (for example, by slowing decision making and inhibiting innovation) and that a divisional (M-form) design is more likely to bring about the desired growth (by speeding decision making and promoting innovation).

strategic control Control aimed at ensuring that the organization is maintaining an effective alignment with its environment and moving toward achieving its strategic goals

In this way, strategic control focuses on the extent to which implemented strategy achieves the organization's strategic goals. If, as outlined above, one or more avenues of implementation are inhibiting the attainment of goals, that avenue should be changed. Consequently, the firm might find it necessary to alter its structure, replace key leaders, adopt new technology, modify its human resources, or change its information and operational control systems. For example, Ikea, the Swedish furniture manufacturer, has experienced disappointing performance from its internationalization strategy. As a result, the company has recently announced a major change in how it will manage its international operations.[25] In particular, the firm has closed many of its underperforming outlets and centralized control back to corporate headquarters in Sweden.



Strategic control is critical to the success of many businesses. Take Minnesota-based Fastenal Co. Its CEO, Bob Kierlin, shown here with a team of employees, has made a strategic decision to provide his employees with few perks and no pensions. However, he believes strongly in extreme decentralization. He gives employees tremendous decision-making authority to carry out their jobs. Kierlin thinks that highly motivated employees prefer the power to work with almost total independence over more traditional kinds of rewards like extra vacation time or fitness centers. He ties pay raises and stock ownership to long-term performance and gives employees open access to information, which gives them the opportunity and the motivation to work in the best interests of the firm.

International Strategic Control

Because of both their relatively large size and the increased complexity associated with international business, global organizations must take an especially pronounced strategic view of their control systems. One very basic question that has to be addressed is whether to manage control from a centralized or decentralized perspective.[26] Under a centralized system, each organizational unit around the world is responsible for frequently reporting the results of its performance to headquarters. Managers from the home office often visit foreign branches to observe firsthand how the units are functioning.

BP Amoco, Unilever, Procter & Gamble, and Sony each use this approach. They believe centralized control is effective because it allows the home office to keep better informed of the performance of foreign units and to maintain more control over how decisions are made. For example, BP Amoco discovered that its Australian subsidiary was not billing its customers for charges as quickly as were its competitors. By shortening the billing cycle, BP Amoco now receives customer payments five days faster than before. Managers believe that they discovered this oversight only because of a centralized financial control system.

Organizations that use a decentralized control system require foreign branches to report less frequently and in less detail. For example, each unit may submit summary performance statements on a quarterly basis and provide full statements only once a year. Similarly, visits from the home office are less frequent and less concerned with monitoring and assessing performance. IBM, Ford, and Shell all use this approach. Because Ford practices decentralized control of its design function, European designers have developed several innovative automobile design features. Managers believe that if they had been more centralized, designers would not have had the freedom to develop their new ideas.

MANAGEMENT IMPLICATIONS Managers need to understand how control and strategy are related. In addition, managers in companies with international operations need to be familiar with the special control issues that they face.

■ Managing Control in Organizations

Effective control, whether at the operations, financial, structural, or strategic level, successfully regulates and monitors organizational activities. To use the control process, managers must recognize the characteristics of effective control and understand how to identify and overcome occasional resistance to control.[27]

Characteristics of Effective Control

Control systems tend to be most effective when they are integrated with planning and when they are flexible, accurate, timely, and objective.

Integration with Planning Control should be linked with planning. The more explicit and precise this link, the more effective the control system. The best way to integrate planning and control is to account for control as plans develop. In other words, as goals are set during the planning process, attention should be paid to developing standards that will reflect how well the plan is realized. Managers at Champion Spark Plug Company decided to broaden their product line to include a full range of automotive accessories—a total of twenty-one new products. As part of this plan, managers decided in advance what level of sales they wanted to realize from each product for each of the next five years. They established these sales goals as standards against which actual sales would be compared. Thus, by accounting for their control system as they developed their plan, managers at Champion did an excellent job of integrating planning and control.

Flexiblity The control system itself must be flexible enough to accommodate change. Consider, for example, an organization whose diverse product line requires seventy-five different raw materials. The company's inventory control system must be able to manage and monitor current levels of inventory for all seventy-five materials. When a change in product line changes the number of raw materials needed, or when the required quantities of the existing materials change, the control system should be flexible enough to handle the revised requirements. The alternative—designing and implementing a new control system—is an avoidable expense. Champion's control system includes a mechanism that automatically shipped products to major customers to keep their inventory at predetermined levels. The firm had to adjust this system when one of its biggest customers decided not to stock the full line of Champion products. Because its control system was flexible, modifying it for the customer was relatively simple.

Accuracy Managers make a surprisingly large number of decisions based on inaccurate information. Field representatives may hedge their sales estimates to make themselves look better. Production managers may hide costs to meet their targets. Human resource managers may overestimate their minority recruiting prospects to meet affirmative action goals. In each case the information other managers receive is inaccurate, and the results of inaccurate information may be quite dramatic. If sales projections are inflated, a manager might cut advertising (thinking it is no longer needed) or increase advertising (to build momentum). Similarly, a production manager unaware of hidden costs may quote a sales price much lower than desirable. Or a human resources manager may speak out publicly on the effectiveness of the company's minority recruiting, only to find out later that these prospects have been overestimated. In each case, the result of inaccurate information is inappropriate managerial action.

Timeliness Timeliness does not necessarily mean quickness. Rather, it describes a control system that provides information as often as is necessary. Since Champion has a wealth of historical data on its spark plug sales, it does not need information on spark plugs as frequently as it needs sales feedback for its newer products. Retail organizations usually need sales results daily so that they can

manage cash flow and adjust advertising and promotion. In contrast, they may require information about physical inventory only quarterly or annually. In general, the more uncertain and unstable the circumstances, the more frequently measurement is needed.

Objectivity The control system should provide information that is as objective as possible. To appreciate this detail, imagine the task of a manager responsible for control of his organization's human resources. He asks two plant managers to submit reports. One manager notes that morale at his plant is "okay," that grievances are "about where they should be," and that turnover is "under control." The other reports that absenteeism at her plant is running at 4 percent, that sixteen grievances have been filed this year (compared with twenty-four last year), and that turnover is 12 percent. The second report will almost always be more useful than the first. Of course, managers also need to look beyond the numbers when assessing performance. For example, a plant manager may be boosting productivity and profit margins by putting too much pressure on workers and using poor quality materials. As a result, impressive short-run gains may be overshadowed by longer run increases in employee turnover and customer complaints.

Resistance to Control

Managers may sometimes make the mistake of assuming that the value of an effective control system is self-evident to employees. This assumption is not always accurate, however. Many employees resist control, especially if they feel overcontrolled, if they think control is inappropriately focused or that it rewards inefficiency, or if they are uncomfortable with accountability.

Overcontrol Occasionally, organizations try to control too many details. This situation becomes especially problematic when the control affects employee behavior directly. An organization that instructs its employees when to come to work, where to park, when to have morning coffee, and when to leave for the day exerts considerable control over people's daily activities. Yet many organizations attempt to control not only these but other aspects of work behavior as well. Of particular relevance in recent years is the effort of some companies to control their employees' access to private e-mail and the Internet during work hours. Some companies have no policies governing these activities, some attempt to limit it, and some attempt to forbid it altogether.[28]

Troubles arise when employees perceive these attempts to limit their behavior as being unreasonable. A company that tells its employees how to dress, how to arrange their desks, and how to wear their hair may meet with more resistance. Employees at Chrysler (now a part of DaimlerChrysler) used to complain because they were forced to park in a distant parking lot if they drove a non-Chrysler vehicle. People felt that these efforts to control their personal behavior (i.e., what kind of car to drive) were excessive. Managers eventually removed these controls and now allow open parking. Some employees at Abercrombie & Fitch argue that the firm is guilty of overcontrol because of its strict dress and grooming require-

ments—for example, no necklaces or facial hair for men and only natural nail polish and earrings no larger than a dime for women.

Inappropriate Focus The control system may be too narrow or it may focus too much on quantifiable variables and leave no room for analysis or interpretation. A sales standard that encourages high-pressure tactics to maximize short-run sales may do so at the expense of goodwill from long-term customers. Such a standard is too narrow. A university reward system that encourages faculty members to publish large numbers of articles but fails to consider the quality of the work is also inappropriately focused. Employees resist the intent of the control system by focusing their efforts only at the performance indicators being used. The cartoon features another example of inappropriately focused control.

Rewards for Inefficiency Imagine two operating departments that are approaching the end of the fiscal year. Department 1 expects to have $5,000 of its budget left over; department 2 is already $3,000 in the red. As a result, department 1 is likely to have its budget cut for the next year ("They had money left, so they obviously got too much to begin with") and department 2 is likely to get a budget increase ("They obviously haven't been getting enough money"). Thus, department 1 is punished for being efficient and department 2 is rewarded for being inefficient. (No wonder departments commonly hasten to deplete their budgets as the end of the year approaches!) As with inappropriate focus, people resist the intent of this control and behave in ways that run counter to the organization's original intent.



"You've got to really wonder just how many more cut-backs this department can absorb!"

Cartoon by Bradford Veley

In recent years, many organizations have sought ways to lower their costs through cost-cutting programs. They have reduced their workforces, eliminated perquisites, and outsourced services that independent contractors can do for a lower price. But some experts worry that many organizations have cut too much, increasing pressure and stress on the employees who are left. While it is doubtful that any organization has gone to the lengths illustrated in this cartoon, many employees nevertheless are feeling the consequences of these cutbacks.

Too Much Accountability Effective controls allow managers to determine whether or not employees discharge their responsibilities successfully. If standards are properly set and performance accurately measured, managers know when problems arise and which departments and individuals are responsible. People who do not want to be accountable for their mistakes or who do not want to work as hard as their boss therefore might like to resist control. For example, American Express has a system that provides daily information on how many calls each of its customer service representatives handles. If one representative has typically worked at a slower pace and handled fewer calls than other representatives, that individual's deficient performance can now be pinpointed more easily.

Overcoming Resistance to Control

Perhaps the best way to overcome resistance to control is to create effective control to begin with. If control systems are properly integrated with organizational

planning and if the controls are flexible, accurate, timely, and objective, the organization will be less likely to overcontrol, to focus on inappropriate standards, or to reward inefficiency. Two other ways to overcome resistance are encouraging participation and developing verification procedures.

Encourage Employee Participation Chapter 12 notes that participation can help overcome resistance to change. By the same token, when employees are involved with planning and implementing the control system, they are less likely to resist it. For instance, employee participation in planning, decision making, and quality control at the Chevrolet Gear Axle plant in Detroit has resulted in increased employee concern for quality and a greater commitment to meeting standards.

Develop Verification Procedures Multiple standards and information systems provide checks and balances in control and allow the organization to verify the accuracy of performance indicators. Suppose a production manager argues that she failed to meet a certain cost standard because of increased prices of raw materials. A properly designed inventory control system will either support or contradict her explanation. Suppose that an employee who was fired for excessive absences argues that he was not absent "for a long time." An effective human resource control system should have records that support the termination. Resistance to control declines because these verification procedures protect both employees and management. If the production manager's claim about the rising cost of raw materials is supported by the inventory control records, she will not be held solely accountable for failing to meet the cost standard, and some action will probably be taken to lower the cost of raw materials.

MANAGEMENT IMPLICATIONS Managers should know the basic characteristics of effective control. They should also understand and be familiar with why employees are likely to resist control, as well as techniques that can be used to overcome this resistance.

Summary of Key Points

Control is the regulation of organizational activities so that some targeted element of performance remains within acceptable limits. Control provides ways to adapt to environmental change, to limit the accumulation of errors, to cope with organizational complexity, and to minimize costs. Control can focus on financial, material, information, and human resources and includes operations, financial, structural, and strategic levels. Control is the function of managers, the controller, and increasingly operating employees.

Steps in the control process are (1) establish standards of expected performance, (2) measure

actual performance, (3) compare performance to the standards, and (4) evaluate the comparison and take appropriate action.

Operations control focuses on the processes the organization uses to transform resources into products or services. Preliminary control is concerned with the resources that serve as inputs to the system. Screening control is concerned with the transformation processes used by the organization. Postaction control is concerned with the outputs of the organization. Most organizations need multiple control systems because one system alone cannot provide adequate control.

Financial control focuses on controlling the organization's financial resources. The foundation of financial control is the budget, a plan expressed in numerical terms. Most organizations rely on financial, operating, and nonmonetary budgets. Financial statements, various kinds of ratios, and external and internal audits are also important tools organizations use as part of financial control.

Structural control addresses how well an organization's structural elements serve their intended purpose. Two basic forms of structural control are bureaucratic and clan. Bureaucratic control is relatively formal and mechanistic, whereas clan control is informal and organic. Most organizations use a form of organizational control somewhere between these two extremes.

Strategic control focuses on how effectively the organization's strategies are succeeding in helping the organization meet its goals. The integration of strategy and control is generally achieved through organization structure, leadership, technology, human resources, and information and operational control systems. International strategic control is also important for multinational organizations. The basic issue of international strategic control is whether to practice centralized or decentralized control.

One way to increase the effectiveness of control is to integrate planning and control fully. The control system should also be flexible, accurate, timely, and as objective as possible. Employees may resist organizational controls because of overcontrol, inappropriate focus, rewards for inefficiency, and a desire to avoid accountability. Managers can overcome this resistance by improving the effectiveness of controls, allowing employee participation, and developing verification procedures.

Discussion Questions

Questions for Review

1. What is the purpose of organizational control? Why is it important?
2. What are the steps in the control process? Which step is likely to be the most difficult to perform? Why?
3. What are the similarities and differences between the various forms of operations control? What are the costs and benefits of each form?
4. How can a manager understand and overcome resistance and make control effective?

Questions for Analysis

5. How is the controlling process related to the functions of planning, organizing, and leading?
6. Are the differences in bureaucratic control and clan control related to differences in organization structure? If so, how? If not, why not? (The terms do sound similar to those used to discuss the organizing process.)
7. Do you use a budget for your personal finances? Relate your experiences with budgeting to the discussion in the chapter.

Questions for Application

8. Does your college or university have a controller? If so, find out how the position fits into the organization's design. If not, why do you think such a position has not been created?
9. Interview several local managers to determine which form of operations control—preliminary, screening, postaction, or multiple—is most frequently used by them. How might you account for what you found?
10. Ask managers from different parts of the same organization or from different organizations what makes controls effective. How do their views compare with those presented in this chapter? Why might differences exist?

BUILDING EFFECTIVE *time-management* SKILLS

Exercise Overview

Time-management skills—a manager's abilities to prioritize work, to work efficiently, and to delegate appropriately—play a major role in the control function; that is, a manager can use time-management skills to control his or her own work more effectively. This exercise will help demonstrate the relationship between time-management skills and control.

Exercise Background

You are a middle manager in a small manufacturing plant. Today is Monday and you have just returned from a week of vacation. The first thing you discover is that your secretary will not be in today. His aunt died, and he is out of town at the funeral. He did, however, leave you the following note:

Dear Boss:
Sorry about not being here today. I will be back tomorrow. In the meantime, here are some things you need to know:

1. Ms. Glinski [your boss] wants to see you today at 4:00.
2. The shop steward wants to see you as soon as possible about a labor problem.
3. Mr. Bateman [one of your big customers] has a complaint about a recent shipment.
4. Ms. Ferris [one of your major suppliers] wants to discuss a change in the delivery schedule.
5. Mr. Prescott from the Chamber of Commerce wants you to attend a breakfast meeting on Wednesday to discuss our expansion plans.
6. The legal office wants to discuss our upcoming OSHA inspection.
7. Human resources wants to know when you can interview someone for the new supervisor's position.
8. Jack Williams, the machinist you fired last month, has been hanging around the parking lot and his presence is making some employees uncomfortable.

Exercise Task

With the information above as context, do the following:

1. Prioritize the work that needs to be done to address the information above into three categories: very timely, moderately timely, and less timely.
2. Are importance and timeliness the same thing?
3. What additional information must you acquire before you can begin to prioritize this work?
4. How would your approach differ if your secretary were in today?

BUILDING EFFECTIVE *diagnostic* SKILLS

Exercise Overview

Diagnostic skills enable managers to visualize responses to situations. Because control focuses on regulating organizational activities, diagnostic skills are clearly important to the determination of what activities should be regulated, how to assess activities best, and how to respond to deviations. This exercise helps demonstrate the nature of this relationship.

Exercise Background

You are the manager of a popular, locally owned restaurant. Your restaurant competes with such chains as Chili's, Bennegan's, and Applebee's. However, you have been able to maintain your market share in light of increased competition from these outlets by concentrating on providing exceptional service.

Recently, you have become aware of three trends that concern you. First, your costs are increasing. Monthly charges for food purchases seem to be growing at an exceptionally rapid pace. Second, customer complaints are also increasing. While the actual number of complaints is still quite small, complaints are nevertheless increasing. And finally, turnover among your employees is also increasing. While turnover in the restaurant business is almost always very high, the recent increases are in marked contrast to your historical patterns of turnover.

Exercise Task

Using the information presented above, do the following:

1. Identify as many potential causes as possible for each of the three problem areas.
2. Group each cause into one of two categories: "more likely" and "less likely."
3. Develop at least one potential action that you might take to address each cause.

BUILDING EFFECTIVE *decision-making* SKILLS

Exercise Overview

Decision-making skills refer to the manager's ability to recognize and define problems and opportunities correctly and then to select an appropriate course of action to solve problems and capitalize on opportunities. This exercise will enable you to practice your decision-making skills in relation to organizational control.

Exercise Background

Assume that you are the top manager of a medium-size manufacturing company. The company is family-owned, and several family members work in various managerial positions. Because of your own special skills and abilities, you have just been brought in from outside to run the company. The company has a long-standing tradition of avoiding debt and owns several smaller businesses in related industries.

Over the last few years the company has lagged in productivity and efficiency and now finds itself in desperate straits. Profits have just about disappeared and one of your bigger competitors may be planning to take over the business. You have hired a consulting firm to help you identify alternatives for turning the situation around. The primary options are:

1. Issue a public stock offering (an Initial Public Offering, or IPO) to raise funds.
2. Borrow money from a bank to finance a turnaround.

3. Sell several of the smaller operations to fund a turnaround.
4. Seek a buyer for the entire firm.

Exercise Task

With the background information above as context, do the following:

1. Evaluate each of the options from a strategic standpoint.
2. How does each option relate to control?
3. Select the one that appeals to you most.
4. Describe the likely barriers you will encounter with the option you have chosen.

CHAPTER CLOSING CASE

CONTROL KEEPS SIEBEL SYSTEMS ON THE FAST TRACK

Control is paying off for Siebel Systems, a fast-growing U.S. company that rings up $1.6 billion in annual sales of sophisticated software to corporations such as British Telecom and Sun Microsystems. Siebel's software helps corporate customers better manage sales and other critical functions, allowing more effective monitoring and control of activities and results. Tom Siebel, the founder and CEO of Siebel, is a strong believer in control. He enforces standards for almost everything in the organization, from employee performance to customer service to service response. This enforcment helps him maintain control over operations, finances, structure, and strategy covering 5,200-plus employees in one hundred offices worldwide.

Siebel needs peak performance day in and day out to fuel the company's torrid rate of growth, which is more than 117 percent a year. So every six months, the company ranks the employees in each department. Those who fall in the lowest 5 percent are terminated, while top performers are rewarded. Still, Siebel's turnover is lower than that of other high-tech firms. This control process will help Siebel maintain high performance while doubling its global workforce to more than ten thousand and adding two million square feet of office space in the coming years.

Operations are another area where Siebel exerts strict control. Too often, software companies announce plans to introduce updated or new programs, then miss the launch date by months or even years. Not Siebel. Customers know that the company can be depended on to release updated versions of its software every spring. They also know they can get speedy, knowledgeable help if they have problems installing or operating some of the complex programs Siebel sells. The CEO and his management team set an example for all employees by spending considerable time working with customers. Seibel, for example, devotes about 60 percent of his working day meeting with customers, learning about their problems, offering advice, and showing how his firm's products can provide solutions.

Wall Street appreciates public companies with strong financial controls, so it's not surprising that investors have flocked to Siebel. The company's habit of beating analysts' expectations every quarter since the company first offered its stock in 1996—and the upward trend of its stock price—has definitely pleased investors. Although some competitors have been caught in accounting scandals through the years, Siebel's tight controls have kept its finances running smoothly, another reason for its investor appeal. Until recently, the CEO was the only manager who could sign off on expenses over $10,000; now two senior managers have been given the authority to approve expenses up to $50,000, with higher amounts going to Siebel's desk for review and approval.

Unlike many high-tech firms, Siebel has an unwritten dress code mandating professional business wear at work. Male employees are expected to appear in suits and ties; female employees are expected to wear skirts or pants suits. This dress code supports the air of professionalism that pervades the entire company. Every Siebel office is decorated in the same way, with blue carpeting and off-white walls, gray desktops, and maple furniture. Every desk is neat, with no empty soda cans or empty pizza cartons (eating at the desk is forbidden). In another departure from Silicon Valley norms, Siebel doesn't allow the basketball games and beer blasts that

are so common in many high-tech firms. In short, Siebel is all business, an approach that impresses customers and adds, in a small way, to Siebel's ability to compete against Oracle, PeopleSoft, Baan, and other rivals.

As CEO, Siebel holds tight rein on his company, but he has lately begun sharing some control with other top executives. For example, he appointed a chief operating officer to oversee day-to-day issues in marketing and sales, engineering, and services. Still, he expects managers and employees to move quickly when he asks questions or requests action. After Siebel met with a customer one Friday, he promised a complete proposal by Monday—impossible for many companies but a normal reaction time for the people at Siebel.

Case Questions

1. Identify as many forms of control as possible in this case.
2. What are the advantages and disadvantages of concentrating control in the hands of one top manager?
3. Does Siebel sound like a good working environment for you? Why or why not?

Case Reference

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CHAPTER 21

Managing Operations, Quality, and Productivity

OPENING INCIDENT

Young Joseph Hartmann immigrated to the United States from Bavaria in 1877. Soon after arriving he started a small trunk-making company and used the skills he had learned in his homeland. Today, Hartmann Luggage, a division of Brown-Forman Corporation and based in Lebanon, Tennessee, is among the most respected names in the luggage industry.

The firm makes a full line of luggage products, ranging from business cases to suitcases to computer cases. Hartmann bags are also among the most expensive in the industry, with even a small bag costing hundreds of dollars. So why are consumers willing to pay such a premium price for a suitcase? One of the reasons is the quality that characterizes Hartmann bags. Hartmann luggage has a lifetime guarantee—the company will repair or replace any damaged product for as long as it's in the possession of its original owner. It honors warranties even when it's apparent that product damage is attributable to owner neglect, and it has repaired bags as old as forty years.

Why is the firm able to offer such a strong guarantee? In large part it's due to the quality construction used to make the bags and the rigorous testing to which they are subjected before being placed on the market. For example, almost all the work on a Hartmann bag is done by hand by trained workers who excel at their craft. The company also uses only the highest quality materials, ranging from industrial strength belting leather to the strongest cloth and metal hinges. And its manufacturing systems are among the most efficient in the industry.

But it is in the quality control testing lab that Hartmann truly excels. For example, every new case or bag Hartmann intends to make is first tested for a lifetime of use before being placed into production. And most of this testing is done with special machines that Hartmann managers have conceptualized and constructed and that are a fundamental part of its operations systems.

One of its machines, for example, is call the "tumble tester." This large machine resembles a ferris wheel with a cage. A bag is put inside the cage, and the wheel slowly begins to turn. The bag tumbles like a towel in a clothes dryer, crashing against metal protrusions made to resemble the baggage handling system in an airport. The machine simulates the treatment the bags will receive in just such an airport. Each test run is for seven thousand turns, simulating five years' worth of bouncing.

"We have repaired or refurbished bags that are forty years old."

—Gail Jamison, Hartmann repair section chief

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Describe and explain the nature of operations management.
- Identify and discuss the components involved in designing effective operations systems.
- Discuss organizational technologies and their role in operations management.
- Identify and discuss the components involved in implementing operations systems and supply chain management.
- Explain the meaning and importance of managing quality and total quality management.
- Explain the meaning and importance of managing productivity, productivity trends, and ways to improve productivity.

CHAPTER OUTLINE

- **The Nature of Operations Management**
  - The Importance of Operations
  - Manufacturing and Production
  - Service Operations
  - The Role of Operations in Organizational Strategy
- **Designing Operations Systems**
  - Determining Product-Service Mix
  - Capacity Decisions
  - Facilities Decisions
- **Organizational Technologies**
  - Manufacturing Technology
  - Service Technology
- **Implementing Operations Systems Through Supply Chain Management**
  - Operations Management as Control
  - Purchasing Management
  - Inventory Management
- **Managing Total Quality**
  - The Meaning of Quality
  - The Importance of Quality
  - Total Quality Management
  - TQM Tools and Techniques
- **Managing Productivity**
  - The Meaning of Productivity
  - The Importance of Productivity
  - Productivity Trends
  - Improving Productivity

Another machine Hartmann uses lifts a briefcase up and down every few seconds, as many as one hundred thousand times in all. This machine assesses the wear and tear lifting creates on the briefcase handle. If the wear is excessive, stronger leather will be used. Another machine tests the amount of energy or tension needed to pull apart the stitches that hold a bag together. Among the most interesting machines Hartmann uses is a treadmill-like device that simulates asphalt, tile, and carpet—testing how a bag holds up to being dragged or pulled from an airport to a parking lot. Other machines test wheel strength or the durability of shoulder straps, or how well a bag holds up to ultraviolet rays, rain, humidity, heat, and ice.



Given the extensive battery of tests that Hartmann bags must pass, it's little wonder that the firm backs them with such a praiseworthy guarantee. And there's little wonder that consumers who can afford to pay the price are eager to own the firm's products.[1]

Managers at Hartmann Luggage have made quality a hallmark of their company's operations. This quality, in turn, has allowed them to charge premium prices and earn superior profits. But to be successful with this strategy, the firm must also have the confidence that its products can withstand the demands of consumers and hold up to the rigors of daily and business use. And they must use operations management effectively as part of their overall strategy.

In this chapter, we explore operations management, quality, and productivity. We first introduce operations management and discuss its role in general management and organizational strategy. The next three sections discuss designing operations systems, organizational technologies, and implementing operations systems. We then introduce and discuss various issues in managing for total quality. Finally, we discuss productivity, which is closely related to quality.

■ The Nature of Operations Management

operations management The set of managerial activities used by an organization to transform resource inputs into products, services, or both

Operations management is at the core of what organizations do as they add value and create products and services. But what exactly are operations? And how are they managed? **Operations management** is the set of managerial activities used by an organization to transform resource inputs into products, services, or both. When Dell Computer buys electronic components, assembles them into PCs, and then ships them to customers, it is engaging in operations management. When a Pizza Hut employee orders food and paper products and then combines dough, cheese, and tomato paste to create a pizza, he or she is engaging in operations management.



Manufacturing and production are frequently key components of a company's quality management efforts. IGT Corporation makes electronic slot machines that are sold to casinos and other gambling operations around the world. Because of the stringent government regulations that affect this industry, and the potential costs that errors might create, it is extremely important that all machines be of the highest quality. Thus this inspector is closely examining a transparent cover sheet that will announce whether or not the gambler has struck it rich!

The Importance of Operations

Operations is an important functional concern for organizations because efficient and effective management of operations goes a long way toward ensuring competitiveness and overall organizational performance, as well as quality and productivity. Inefficient or ineffective operations management, on the other hand, will almost inevitably lead to poorer performance and lower levels of both quality and productivity. Indeed, *Management Infotech* illustrates how Hershey Foods learned what can happen when operations go awry.

MANAGEMENT INFOTECH

MANAGING OPERATIONS MANAGEMENT SYSTEMS

Hershey Foods got quite a scare during one recent Halloween candy-selling season. Over the summer months, Hershey had installed new software and computers to manage its ordering and fulfillment functions. By fall, however, the system was still not running as it should. Stores waited and waited for the Reese's Peanut Butter Cups, Hershey's Kisses, and other varieties of Hershey's 3,300 candies they had ordered for trick or treat. As Halloween approached, Hershey was quoting a twelve-day turnaround on orders—twice as long as its usual fulfillment period—and filling only part of most orders.

Even when shipments moved out of its warehouses, Hershey couldn't find out from the new system what had been shipped or where; sales representatives wound up calling customers to find out what they had received. To fulfill orders placed by larger customers such as Kmart, Hershey sent some shipments by truck and some by air, absorbing the extra cost to get its candies onto store shelves as quickly as possible. Meanwhile, worried retailers began placing extra orders with other candy manufacturers to fill their shelves and meet consumer demand. By the time Halloween arrived, Hershey's sales were $100 million lower than expected and its profits were down by 19 percent.

Hershey's experiences emphasize the challenges of implementing state-of-the-art operations systems. Although detailed planning and exhaustive testing will smooth the way toward successful implementation, software bugs and even the smallest incompatibilities can derail a system. Fear of system slowdowns or breakdowns haunt many organizations. The two computers that process electronic payments between the world's banks at the New York Clearing House, for example, run on software that is as bug-free as possible because a breakdown would disrupt the entire international financial network. Thanks to constant vigilance, the computers have been operational an astounding 99.99 percent of the time. Not every organization requires this level of quality, but because companies are increasingly dependent on automated systems for managing purchasing, inventory, and other key operations, managers must use extra care and allow extra time when upgrading or installing operations systems software.

Improvements in some quarters are followed by increased risks in others. And new systems introduce more problems than the systems they replace.

*—Peter G. Neumann, a computer scientist with SRI International **

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In an economic sense, operations management creates value and utility of one type or another, depending on the nature of the firm's products or services. If the product is a physical good, such as a Harley-Davidson motorcycle, operations creates value and provides form utility by combining many dissimilar inputs (sheet metal, rubber, paint, combustion engines, and human skills) to make something (e.g., a motorcycle) that is more valuable than the actual cost of the inputs used to create it. The inputs are converted from their incoming forms into a new physical form. This conversion is typical of manufacturing operations and essentially reflects the organization's technology.

In contrast, the operations activities of American Airlines create value and provide time and place utility through its services. The airline transports passengers

and freight according to agreed-on departure and arrival places and times. Other service operations, such as a Coors Brothers Beer distributorship or The Gap retail chain, create value and provide place and possession utility by bringing the customer and products made by others together. Although the organizations in these examples produce different kinds of products or services, their operations processes share many important features.[2]

Manufacturing and Production

manufacturing A form of business that combines and transforms resource inputs into tangible outcomes that are then sold to others

Because manufacturing once dominated U.S. industry, the entire area of operations management used to be called production management. **Manufacturing** is a form of business that combines and transforms resource inputs into tangible outcomes that are then sold to others. The Goodyear Tire and Rubber Company is a manufacturer because it combines rubber and chemical compounds and uses blending equipment and molding machines to create tires. Broyhill is a manufacturer because it buys wood and metal components, pads, and fabric and then combines them into furniture.

During the 1970s, manufacturing entered a long period of decline in the United States, primarily because of foreign competition. U.S. firms had grown lax and sluggish, and new foreign competitors came into the market with better equipment and much higher levels of efficiency. For example, steel companies in the Far East were able to produce high-quality steel for much lower prices than were U.S. companies like Bethlehem Steel and U.S. Steel (now USX Corporation). Faced with a battle for survival, many companies underwent a long and difficult period of change by eliminating waste and transforming themselves into leaner and more efficient and responsive entities. They reduced their workforces dramatically, closed antiquated or unnecessary plants, and modernized their remaining plants. In the last decade, their efforts have started to pay dividends because U.S. business has regained its competitive position in many different industries. Although manufacturers from other parts of the world are still formidable competitors and U.S. firms may never again be competitive in some markets, the overall picture is much better than it was just a few years ago. And prospects continue to look bright.[3]

Service Operations

service organization An organization that transforms resources into an intangible output and creates time or place utility for its customers

During the decline of the manufacturing sector, a tremendous growth in the service sector kept the U.S. economy from declining at the same rate. A **service organization** is one that transforms resources into an intangible output and creates time or place utility for its customers. For example, Merrill Lynch makes stock transactions for its customers, Avis leases cars to its customers, and your local hairdresser cuts your hair. In 1947, the service sector was responsible for less than half of the U.S. gross national product (GNP). By 1975, however, this figure reached 65 percent, and by 1999 it was over 75 percent. The service sector has been responsible for almost 90 percent of all new jobs created in the United States during the 1990s. Managers have come to see that many of the tools, techniques, and methods used in a factory are also useful to a service firm. For example, managers of

automobile plants and hair salons each have to decide how to design their facility, identify the best location for it, determine optimal capacity, make decisions about inventory storage, set procedures for purchasing raw materials, and set standards for productivity and quality.

The Role of Operations in Organizational Strategy

It should be clear by this point that operations management is very important to organizations. Beyond its direct impact on intangibles such as competitiveness, quality, and productivity, it also directly influences the organization's overall level of effectiveness. For example, the deceptively simple strategic decision about whether to stress high quality regardless of cost, lowest possible cost regardless of quality, or some combination of the two has numerous important implications. A highest possible quality strategy will dictate state-of-the-art technology and rigorous control of product design and materials specifications. A combination strategy might call for lower-grade technology and less concern about product design and materials specifications. Just as strategy affects operations management, so too does operations management affect strategy. Suppose that a firm decides to upgrade the quality of its products or services. The organization's ability to implement the decision depends in part on current production capabilities and other resources. If existing technology will not permit higher-quality work and if the organization lacks the resources to replace its technology, increasing quality to the desired new standards will be difficult.

MANAGEMENT IMPLICATIONS The importance of operations management should be obvious to all managers. They should also have an understanding of the similarities and differences between manufacturing and service businesses. Finally, managers need to know the role of operations management in their firm's strategy.

■ *Designing Operations Systems*

The problems, challenges, and opportunities faced by operations managers revolve around the acquisition and utilization of resources for conversion. Their goals include both efficiency and effectiveness. Several issues and decisions must be addressed as operations systems are designed. The most basic ones are product-service mix, capacity, and facilities.

Determining Product-Service Mix

A natural starting point in designing operations systems is determining the **product-service mix**. This decision flows from corporate, business, and marketing strategies. Managers have to make several decisions about their products and services, starting with how many and what kinds to offer.[4] Procter & Gamble, for

product-service mix How many and what kinds of products or services (or both) to offer

example, makes regular, tartar-control, gel, and various other formulas of Crest toothpaste and packages them in several different sizes of tubes, pumps, and other dispensers. Similarly, workers at Subway sandwich stores can combine different breads, vegetables, meats, and condiments in hundreds of different kinds of sandwiches. Decisions also have to be made regarding the level of quality desired, the optimal cost of each product or service, and exactly how each is to be designed. GE, for example, recently reduced the number of parts in its industrial circuit breakers from 28,000 to 1,275. The whole process was achieved by carefully analyzing product design and production methods.

Capacity Decisions

capacity The amount of products, services, or both that can be produced by an organization

The **capacity** decision involves choosing the amount of products, services, or both that can be produced by the organization. Determining whether to build a factory capable of making five thousand or eight thousand units per day is a capacity decision. So, too, is deciding whether to build a restaurant with one hundred or one hundred fifty seats or a bank with five or ten teller stations. The capacity decision is truly a high-risk one because of the uncertainties of future product demand and the large monetary stakes involved. An organization that builds capacity exceeding its needs may commit resources (capital investment) that will never be recovered. Alternatively, an organization can build a facility with a smaller capacity than expected demand. Doing so may result in lost market opportunities, but it may also free capital resources for use elsewhere in the organization.

A major consideration in determining capacity is demand. A company operating with fairly constant monthly demand might build a plant capable of producing an amount each month roughly equivalent to its demand. But if its market is characterized by seasonal fluctuations, building a smaller plant to meet normal demand and then adding extra shifts staffed with temporary workers and/or paying permanent workers extra to work more hours during peak periods might be the most effective choice. Likewise, a restaurant that needs one hundred fifty seats for Saturday night but never needs more than one hundred at any other time during the week would probably be foolish to expand to one hundred fifty seats. During the rest of the week, it must still pay to light, heat, cool, and clean the excess capacity.

Facilities Decisions

facilities The physical locations where products or services are created, stored, and distributed

Facilities are the physical locations where products or services are created, stored, and distributed. Major decisions pertain to facilities location and facilities layout.

location The physical positioning or geographic site of facilities

Location **Location** is the physical positioning or geographic site of facilities and must be determined by the needs and requirements of the organization. A company that relies heavily on railroads for transportation needs to be located close to rail facilities. GE decided that it did not need six plants to make circuit breakers, so it invested heavily in automating one plant and closed the other five. Different organizations in the same industry may have different facilities requirements.

Benetton uses only one distribution center for the entire world, whereas Wal-Mart has several distribution centers in the United States alone. A retail business must choose its location very carefully to be convenient for consumers.

Layout The choice of physical configuration, or the **layout**, of facilities is closely related to other operations decisions. The three entirely different layout alternatives shown in Figure 21.1 help demonstrate the importance of the layout decision. A **product layout** is appropriate when large quantities of a single product are needed. It makes sense to custom design a straight-line flow of work for a product when a specific task is performed at each workstation as each unit flows past. Most assembly lines use this format. For example, Dell's personal computer factories use a product layout.

layout The physical configuration of facilities, the arrangement of equipment within facilities, or both

product layout A physical configuration of facilities arranged around the product; used when large quantities of a single product are needed

Process layouts are used in operations settings that create or process a variety of products. Auto repair shops and health-care clinics are good examples. Each car and each person is a separate "product." The needs of each incoming job are diagnosed as it enters the operations system, and the job is routed through the unique sequence of workstations needed to create the desired finished product. In a process layout, each type of conversion task is centralized in a single workstation or department. All welding is done in one designated shop location, and any car that requires welding is moved to that area. This setup is in contrast to the product

process layout A physical configuration of facilities arranged around the process; used in facilities that create or process a variety of products

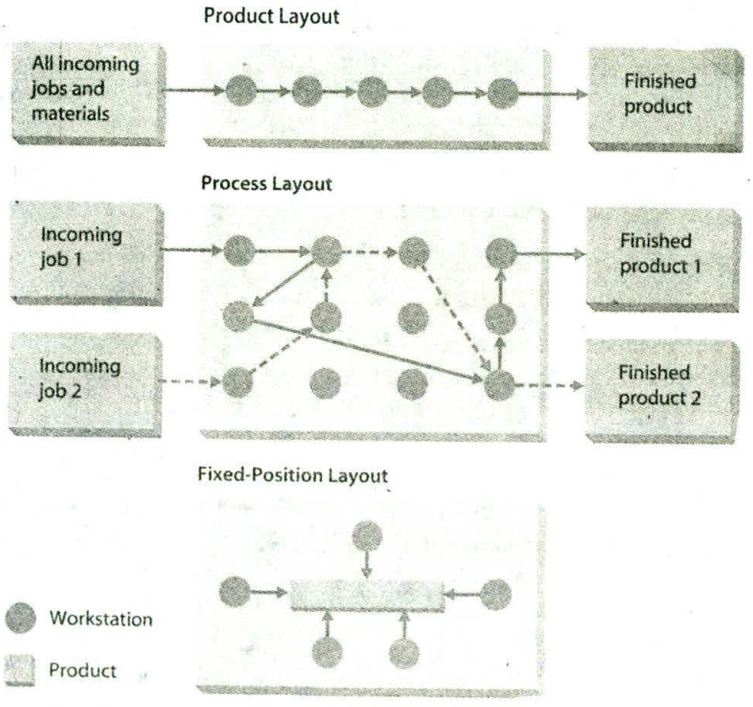


Figure 21.1

Approaches to Facilities Layout

When a manufacturer produces large quantities of a product (such as cars or computers), it may arrange its facilities into an assembly line (product layout). In a process layout, the work (such as patients in a hospital or custom pieces of furniture) moves through various workstations. Locomotives and bridges are both manufactured in a fixed-position layout.

layout, in which several different workstations may perform welding operations if the conversion task sequence so dictates. In a hospital, all X-rays are done in one location, all surgeries in another, and all physical therapy in yet another. Patients are moved from location to location to get the services they need.

fixed-position layout A physical configuration of facilities arranged around a single work area; used for the manufacture of large and complex products such as airplanes

The **fixed-position layout** is used when the organization is creating a few very large and complex products. Aircraft manufacturers like Boeing and shipbuilders like Newport News use this method. An assembly line capable of moving a 747 would require an enormous plant, so instead the airplane itself remains stationary and people and machines move around it as it is assembled.

cellular layout A physical configuration of facilities used when families of products can follow similar flow paths

The cellular layout is a relatively new approach to facilities design. **Cellular layouts** are used when families of products can follow similar flow paths. A clothing manufacturer, for example, might create a cell, or designated area, dedicated to making a family of pockets, such as pockets for shirts, coats, blouses, and slacks. Although each kind of pocket is unique, the same basic equipment and methods are used to make all of them. Hence, all pockets might be made in the same area and then delivered directly to different product layout assembly areas where the shirts, coats, blouses, and slacks are being assembled.

MANAGEMENT IMPLICATIONS Managers need to be familiar with how the product-service mix, capacity, and facilities decisions and issues all contribute to organizational effectiveness, quality, and productivity.

■ Organizational Technologies

technology The set of processes and systems used by organizations to convert resources into products or services

One central element of effective operations management is technology. In Chapter 3 we defined **technology** as the set of processes and systems used by organizations to convert resources into products or services.

Manufacturing Technology

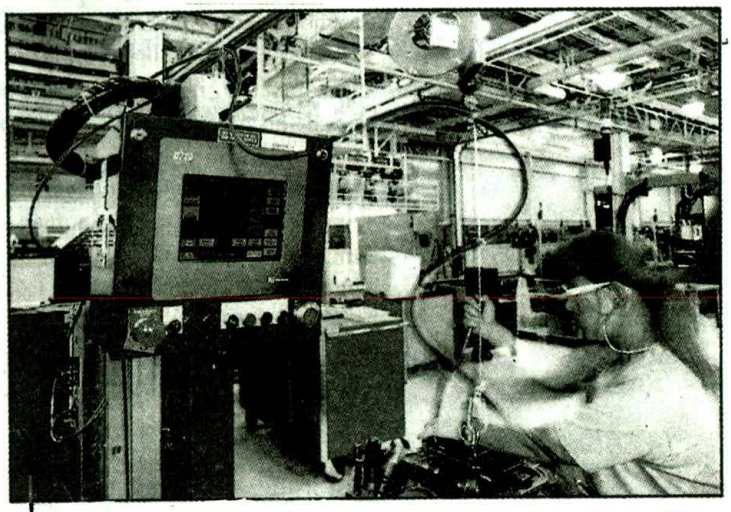
Numerous forms of manufacturing technology are used in organizations. In Chapter 11 we discussed the research of Joan Woodward. Recall that Woodward identified three forms of technology—unit or small batch, large batch or mass production, and continuous process.[5] Each form of technology was thought to be associated with a specific type of organization structure. Of course, newer forms of technology not considered by Woodward also warrant attention. Two of these are automation and computer-assisted manufacturing.

automation The process of designing work so that it can be completely or almost completely performed by machines

Automation **Automation** is the process of designing work so that it can be completely or almost completely performed by machines. Because automated machines operate quickly and make few errors, they increase the amount of work that can be done. Thus, automation helps to improve products and services, and it fosters innovation. Automation is the most recent step in the development of machines and machine-controlling devices. Machine-controlling devices have been around since the 1700s. James Watt, a Scottish engineer, invented a mechanical

speed control to regulate the speed of steam engines in 1787. The Jacquard loom, developed by a French inventor, was controlled by paper cards with holes punched in them. Early accounting and computing equipment was controlled by similar punched cards.

Automation relies on feedback, information, sensors, and a control mechanism. Feedback is the flow of information from the machine back to the sensor. Sensors are the parts of the system that gather information and compare it to some preset standards. The control mechanism is the device that sends instructions to the automatic machine. Early automatic machines were primitive, and the use of automation was relatively slow to develop. These elements are illustrated by the example in Figure 21.2. A thermostat has sensors that monitor air temperature and compare it to a preset low value. If the air temperature falls below the preset value, the thermostat sends an electrical signal to the furnace, turning it on. The furnace heats the air. When the sensors detect that the air temperature has reached a value higher than the low preset value, the thermostat stops the furnace. The last step (shutting off the furnace) is known as feedback, a critical component of any automated operation.



Manufacturing technology continues to become increasingly sophisticated. Take this DaimlerChrysler automobile factory in Indiana, for instance. The machinist is using traditional assembly-line technology and equipment to perform a basic job. In addition, though, the PC monitor is also providing the machinist with information about how well the job is being performed. This allows the machinist to do both faster and higher-quality work.

The big move to automate factories began during World War II. The shortage of skilled workers and the development of high-speed computers combined to bring about a tremendous interest in automation. Programmable automation (the use of computers to control machines) was introduced during this era and far outstripped conventional automation (the use of mechanical or electromechanical devices to

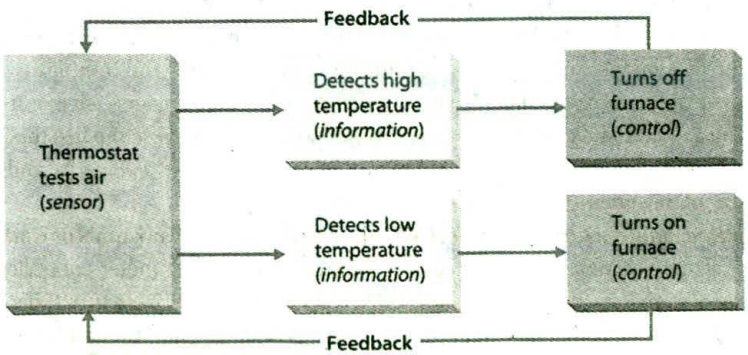


Figure 21.2

A Simple Automatic Control Mechanism

All automation includes feedback, information, sensors, and a control mechanism. A simple thermostat is an example of automation. Another example is Benetton's distribution center in Italy. Orders are received, items pulled from stock and packaged for shipment, and invoices are prepared and transmitted with no human intervention.

control machines). The automobile industry began to use automatic machines for a variety of jobs. In fact, the term *automation* came into use in the 1950s in the automobile industry. The chemical and oil-refining industries also began to use computers to regulate production. During the 1990s automation became a major element in the manufacture of computers and computer components such as electronic chips and circuits. This computerized, or programmable, automation presents the greatest opportunities and challenges for management today.

The impact of automation on people in the workplace is complex. In the short term, people whose jobs are automated may find themselves without jobs. In the long term, however, more jobs are created than are lost. Nevertheless, not all companies are able to help displaced workers find new jobs, so the human costs are sometimes high. In the coal industry, for instance, automation has been used primarily in mining. The output per miner has risen dramatically from the 1950s on. The demand for coal, however, has decreased, and productivity gains resulting from automation have lessened the need for miners. Consequently, a lot of workers have lost their jobs, and the industry has not been able to absorb them. In contrast, in the electronics industry, the rising demand for products has led to increasing employment opportunities despite the use of automation.[6]

Computer-Assisted Manufacturing Current extensions of automation generally revolve around computer-assisted manufacturing. **Computer-assisted manufacturing** is technology that relies on computers to design or manufacture products. One type of computer-assisted manufacturing is *computer-aided design (CAD)*—the use of computers to design parts and complete products and to simulate performance so that prototypes need not be constructed. Boeing uses CAD technology to study hydraulic tubing in its commercial aircraft. Japan's automotive industry uses it to speed up car design. GE used CAD to change the design of circuit breakers, and Benetton uses CAD to design new styles and products. Oneida Ltd., the table flatware firm, used CAD to design a new spoon in only two days.[7] CAD is usually combined with *computer-aided manufacturing (CAM)* to ensure that the design moves smoothly to production. The production computer shares the design computer's information and can have machines with the proper settings ready when production is needed. A CAM system is especially useful when re-orders come in because the computer can quickly produce the desired product, prepare labels and copies of orders, and send the product out.

computer-assisted manufacturing Technology that relies on computers to design or manufacture products

Closely aligned with this approach is *computer-integrated manufacturing (CIM)*. In CIM, CAD and CAM are linked together and computer networks adjust machine placements and settings automatically to enhance both the complexity and the flexibility of scheduling. In settings that use these technologies, all manufacturing activities are controlled by the computer network. Because the network can access the company's other information systems, CIM is both a powerful and a complex management control tool.

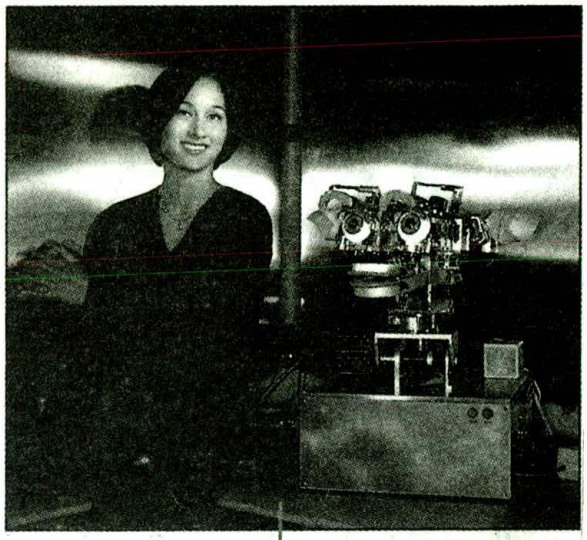
Flexible manufacturing systems (FMS) usually have robotic work units or workstations, assembly lines, and robotic carts or some other form of computer-controlled transport system to move material as needed from one part of the system to another. FMS such as the one at IBM's manufacturing facility in Lexington, Kentucky, rely on computers to coordinate and integrate automated production and materials-handling

facilities. And Ford Motor Company recently used FMS to transform an English factory producing Ford Escorts into a Jaguar plant making its new Jaguar X-Type luxury cars. With traditional methods, the plant would have been closed, its workers laid off, and the factory practically rebuilt from the ground up. But by using FMS, Ford was able to keep the plant open and running continuously while new equipment was being installed and its workers were being retrained in small groups.[8]

robot Any artificial device that can perform functions ordinarily thought to be appropriate for human beings

These systems are not without disadvantages, however. For example, because they represent fundamental change, they also generate resistance. And because of their tremendous complexity, CAD systems are not always reliable. CIM systems are so expensive that they raise the breakeven point for firms using them. This change means that the firm must operate at high levels of production and sales to be able to afford the systems.

Robotics Another trend in manufacturing technology is computerized robotics. A **robot** is any artificial device that can perform functions ordinarily thought to be appropriate for human beings. Robotics refers to the science and technology of the construction, maintenance, and use of robots. The use of industrial robots has steadily increased since 1980 and is expected to continue to increase slowly as more companies recognize the benefits that accrue to users of industrial robots.[9]



Organizational technologies are becoming increasingly more complex and complicated, especially as they relate to automation and robotics. Automobile manufacturers, for example, have used robots for years to perform such tasks as welding automotive body parts together. For the most part, though, robots lack the ability to think or to simulate human emotion. Cynthia Breazeal and her colleagues at M.I.T., however, are trying to change that. Dr. Breazeal recently introduced a new robot called Kismet. Kismet has the capacity to simulate human emotion and to change its "facial" expression to match its "mood." If such technology can be perfected, robots may be able to play a greater role in the future as service providers for customers in such settings as restaurants and other retail establishments.

Welding was one of the first applications for robots, and it continues to be the area for most applications. In second place and close behind is materials handling. Other applications include machine loading and unloading; painting and finishing; assembly; casting; and machining applications such as cutting, grinding, polishing, drilling, sanding, buffing, and deburring. DaimlerChrysler, for instance, recently replaced about two hundred welders with fifty robots on an assembly line and increased productivity about 20 percent. The use of robots in inspection work is increasing. They can check for cracks and holes, and they can be equipped with vision systems to perform visual inspections.

Robots are also beginning to move from the factory floor to lots of other applications. The Dallas police used a robot to apprehend a suspect who had barricaded himself in an apartment building. The robot smashed a window and reached with its mechanical arm into the building. The suspect panicked and ran outside. At the Long Beach Memorial Hospital in California, brain surgeons are assisted by a robot arm that drills into the patient's skull with excellent precision. Some newer applications involve remote work. For example, the use of robot submersibles controlled from the surface can help divers in remote locations. Surveillance robots fitted with microwave sensors can do what a human guard cannot, such as "seeing" through nonmetallic walls and in the dark. In other applications, automated farming (agrimation) uses robot harvesters to pick fruit from a variety of trees.

Robots are also used by small manufacturers. One robot slices carpeting to fit the inside of custom vans in an upholstery shop. Another stretches balloons flat so that

they can be spray-painted with slogans at a novelties company. At a jewelry company, a robot holds class rings while they are engraved by a laser. These robots are lighter, faster, stronger, and more intelligent than those used in heavy manufacturing and are the types that more and more organizations will be using in the future.

Service Technology

Service technology is also changing rapidly, and it is also moving more and more toward automated systems and procedures. In banking, for example, new technological breakthroughs have led to automated teller machines and have made it much easier to move funds between accounts or between different banks. Many people now have their paychecks deposited directly into a checking account, from which many of their bills are then automatically paid. And credit card transactions by Visa customers are recorded and billed electronically. *Today's Management Issues*

TODAY'S MANAGEMENT ISSUES

MANAGING SERVICE QUALITY FROM AFAR

What happens to quality when services are delivered by a loose-knit network of far-flung offices? As U-Haul International has found out, managing service quality from afar is far from easy. Based in Phoenix, Arizona, U-Haul is the original rent-a-truck company targeting do-it-yourself movers. With 15,800 local offices stretching across the United States and Canada, U-Haul maintains a fleet of ninety-three thousand rental trucks that are driven a total of 850 million miles every year, as customers criss-cross the continent with possessions in tow.

Although U-Haul has direct control over service quality in the 1,100 rental locations it owns, it has much less influence over service in the thousands of locations operated by independent dealers. All dealers are required to keep up with truck maintenance every five thousand miles, but that's about the only mandate U-Haul sets. The company does not require independent dealers to maintain standard hours of operation, achieve a minimum cleanliness level, or enforce an employee dress code.

What's more, U-Haul provides little formal training for independent dealers and their employees, apart from explaining how to arrange for truck rentals and returns. Dealers use the company's automated system for logging truck reservations, but a new system—long delayed—will help the corporate office manage the movement of trucks more effectively. The new system is also expected to streamline the customer registration and payment process, which will cut the time needed to complete each transaction by one-fifth. Without the system, however, U-Haul has no central customer database. So when customers call the main U-Haul number to complain about poor service, the corporate office can only write down the details and forward the information to a regional director or to the dealer involved. Action to resolve complaints sometimes takes months, customers say.

We don't insist [independent dealers] answer the phone a standard way.

*—Edward J. Shoen, president of U-Haul International**

Still, U-Haul continues to outpace competitors, holding a much higher market share than Ryder/Budget, the second largest moving truck rental firm. CEO Edward J. Shoen stresses that the majority of U-Haul's customers are satisfied and that the company works to resolve every problem. Ensuring consistently high service quality is not an easy task, as U-Haul's management knows.

References: Joanne Gordon, "U-Hell," *Forbes*, March 20, 2000, pp. 70–72 (*quote on p. 72); *Hoover's Handbook of American Business 2001* (Austin, Texas: Hoover's Business Press, 2001), pp. 126–127.

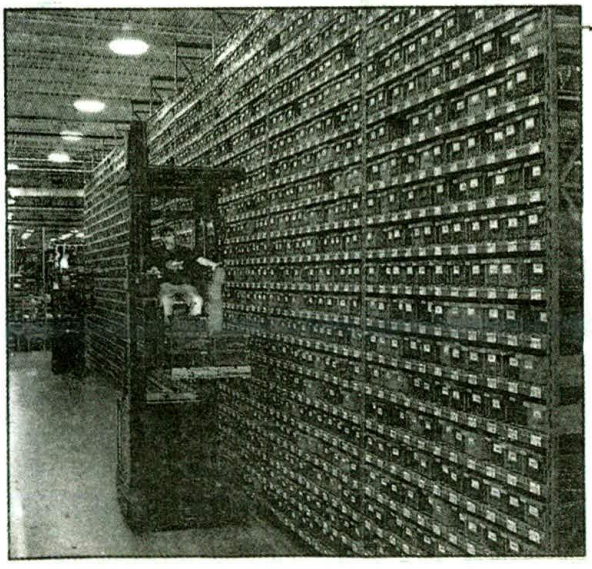
provides an interesting example of how one firm, U-Haul, uses decentralized service technology to lease its trucks.

Hotels use increasingly sophisticated technology to accept and record room reservations. Universities use new technologies to store and provide access electronically to all manner of books, scientific journals, government reports, and articles. Hospitals and other health-care organizations use new forms of service technology to manage patient records, dispatch ambulances, and monitor vital signs. Restaurants use technology to record and fill customer orders, order food and supplies, and prepare food. Given the increased role that service organizations are playing in today's economy, even more technological innovations are likely to be developed in the years to come.[10]

MANAGEMENT IMPLICATIONS Managers should be knowledgeable about the basic forms and dimensions of manufacturing technology, both those that their organizations currently use and those their organizations might use in the future. In addition, they should also be familiar with service technology and its relevance to operations management.

■ *Implementing Operations Systems Through Supply Chain Management*

After operations systems have been properly designed and technologies developed, they must then be put into use by the organization. Their basic functional purpose is to control transformation processes to ensure that relevant goals are achieved in areas such as quality and costs. Operations management has numerous special



Businesses are continuously looking for new ways to improve their supply chain management technology so as to be more efficient and more competitive. Take Aeroquip, for example. The Ohio firm makes a variety of metal connectors, fittings, adapters, and rubber hoses. Aeroquip has improved its effectiveness dramatically in recent years by changing its whole approach to inventory management and control. This 210,000-square-foot distribution center adjoins Aeroquip's main factory. A combination of human labor and automation can get parts to their needed locations in the factory within just a few minutes of an order being placed. This speed, in turn, allows the plant to supply many high-priority orders to customers within four hours.

purposes within this control framework, including purchasing and inventory management. Indeed, this area of management has become so important in recent years that a new term—supply chain management—has been coined. Specifically, **supply chain management** can be defined as the process of managing operations control, resource acquisition and purchasing, and inventory so as to improve overall efficiency and effectiveness.[11]

supply chain management The process of managing operations control, resource acquisition and purchasing, and inventory so as to improve overall efficiency and effectiveness

Operations Management as Control

One way of using operations management as control is to coordinate it with other functions. Monsanto Company, for example, established a consumer products division that produces and distributes fertilizers and lawn chemicals. To facilitate control, the operations function was organized as an autonomous profit center. Monsanto finds this arrangement effective because its manufacturing division is given the authority to determine not only the costs of creating the product but also the product price and the marketing programs.

In terms of overall organizational control, a division like the one used by Monsanto should be held accountable only for the activities over which it has decision-making authority. It would be inappropriate, of course, to make operations accountable for profitability in an organization that stresses sales and market share over quality and productivity. Misplaced accountability results in ineffective organizational control, to say nothing of hostility and conflict. Depending on the strategic role of operations then, operations managers are accountable for different kinds of results. For example, in an organization using bureaucratic control, accountability will be spelled out in rules and regulations. In a clan system, it is likely to be understood and accepted by everyone.

Within operations, managerial control ensures that resources and activities achieve primary goals such as a high percentage of on-time deliveries, low unit-production cost, or high product reliability. Any control system should focus on the elements that are most crucial to goal attainment. For example, firms in which product quality is a major concern (as it is at Rolex) might adopt a screening control system to monitor the product as it is being created. If quantity is a pressing issue (as it is at Timex), a postaction system might be used to identify defects at the end of the system without disrupting the manufacturing process itself.

Purchasing Management

purchasing management Buying the materials and resources needed to create products and services

Purchasing management is concerned with buying the materials and resources needed to create products and services. In many ways, purchasing is at the very heart of effective supply chain management. The purchasing manager for a retailer like Sears, Roebuck is responsible for buying the merchandise that the store will sell. The purchasing manager for a manufacturer buys raw materials, parts, and machines needed by the organization. Large companies like GE, IBM, and Siemens have large purchasing departments.[12] The manager responsible for purchasing must balance numerous constraints. Buying too much ties up capital and in-

creases storage costs. Buying too little might lead to shortages and high reordering costs. The manager must also make sure that the quality of what is purchased meets the organization's needs, that the supplier is reliable, and that the best financial terms are negotiated.

Many firms have recently changed their approach to purchasing as a means to lower costs and improve quality and productivity. Rather than relying on hundreds or even thousands of suppliers, many companies are reducing their number of suppliers and negotiating special production-delivery arrangements.[13] For example, the Honda plant in Marysville, Ohio, found a local business owner looking for a new opportunity. They negotiated an agreement whereby he would start a new company to mount car stereo speakers into plastic moldings. He delivers finished goods to the plant three times a day, and Honda buys all he can manufacture. Thus, he has a stable sales base, Honda has a local and reliable supplier, and both companies benefit.

Inventory Management

Inventory control, also called materials control, is essential for effective operations management. The four basic kinds of inventories are *raw materials*, *work-in-process*, *finished-goods*, and *in-transit* inventories. As shown in Table 21.1, the sources of control over these inventories are as different as their purposes. Work-in-process inventories, for example, are made up of partially completed products that need further processing; they are controlled by the shop-floor system. In contrast, the quantities and costs of finished-goods inventories are under the control of the overall production scheduling system, which is determined by high-level planning decisions. In-transit inventories are controlled by the transportation and distribution systems.

inventory control Managing the organization's raw materials, work-in-process, finished goods, and products in-transit

Like most other areas of operations management, inventory management changed notably in recent years. One particularly important breakthrough is the **just-in-time (JIT) method**. First popularized by the Japanese, the JIT system reduces the organization's investment in storage space for raw materials and in the materials themselves. Historically, manufacturers built large storage areas and filled them with materials, parts, and supplies that would be needed days, weeks, and even months in the future. A manager using the JIT approach orders materials

just-in-time (JIT) method An inventory system that has necessary materials arriving as soon as they are needed (just in time) so that the production process is not interrupted

Type	Purpose	Source of Control
Raw materials	Provide the materials needed to make the product	Purchasing models and systems
Work-in-process	Enables overall production to be divided into stages of manageable size	Shop-floor control systems
Finished goods	Provide ready supply of products on customer demand and enable long, efficient production runs	High-level production scheduling systems in conjunction with marketing
In-transit (pipeline)	Distributes products to customers	Transportation and distribution control systems

Table 21.1

Inventory Types, Purposes, and Sources of Control

JIT is a recent breakthrough in inventory management. With JIT inventory systems, materials arrive just as they are needed. JIT therefore helps an organization control its raw materials inventory by reducing the amount of space it must devote to storage.

and parts more often and in smaller quantities, thereby reducing investment in both storage space and actual inventory. The ideal arrangement is for materials to arrive just as they are needed—or just in time.[14]

Recall our example about the small firm that assembles stereo speakers for Honda. That firm delivers stereo speakers in plastic molding three times a day, making it unnecessary for Honda to carry large quantities of the speakers in inventory. In an even more striking example, Johnson Controls makes automobile seats for DaimlerChrysler and ships them by small truckloads to a DaimlerChrysler plant seventy-five miles away. Each shipment is scheduled to arrive two hours before it is needed. Clearly, the JIT approach requires high levels of coordination and cooperation between the company and its suppliers. If shipments arrive too early, DaimlerChrysler has no place to store them. If they arrive too late, the entire assembly line may have to be shut down, resulting in enormous expense. When properly designed and used, the JIT method controls inventory very effectively.

MANAGEMENT IMPLICATIONS Managers should understand how operations systems can be used to enhance quality. In particular, they should be familiar with the role of operations management as control and the importance of purchasing and inventory management as elements of effective supply chain management.

■ Managing Total Quality

Quality and productivity have become major determinants of business success or failure today and have become central issues in managing organizations.[15] But as we will see, achieving higher levels of quality is not an easy accomplishment. Simply ordering that quality be improved is about as effective as waving a magic wand.[16] The catalyst for its emergence as a mainstream management concern was foreign business, especially Japanese business. And nowhere was it more visible than in the auto industry. During the energy crisis in the late 1970s, many people bought Toyotas, Hondas, and Nissans because they were more fuel-efficient than U.S. cars. Consumers soon found, however, that not only were the Japanese cars more fuel efficient, they were also of higher quality than U.S. cars. Parts fit together better, the trim work was neater, and the cars were more reliable. Thus, after the energy crisis subsided, Japanese cars remained formidable competitors because of their reputations for quality.

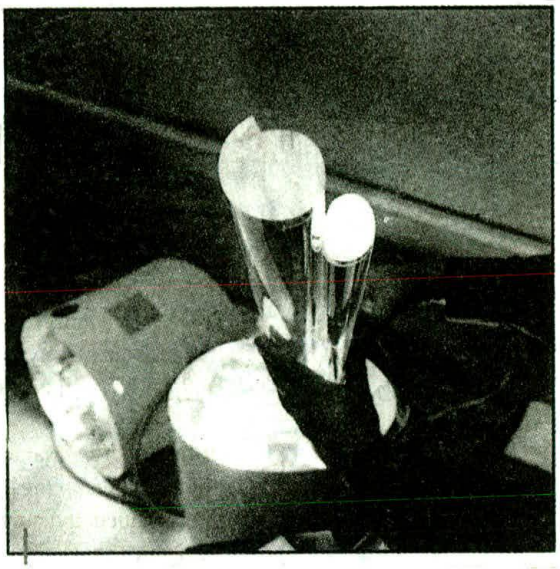
The Meaning of Quality

quality The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

The American Society for Quality Control defines **quality** as the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.[17] Quality has several different attributes. Table 21.2 lists eight basic dimensions that determine the quality of a particular product or service. For example, a product that has durability and is reliable is of higher quality than a product with less durability and reliability.

Quality is also relative. For example, a Lincoln is a higher-grade car than a Ford Taurus, which in turn is a higher-grade car than a Ford Focus. The difference in quality stems from differences in design and other features. The Focus, however, is considered a high-quality car relative to its engineering specifications and price. Likewise, the Taurus and Lincoln may also be high-quality cars, given their standards and prices. Thus, quality is both an absolute and a relative concept.

Quality is relevant for both products and services. While its importance for products like cars and computers was perhaps recognized first, service firms ranging from airlines to restaurants have also come to see that quality is a vitally important determinant of their success or failure. Service quality, as we will discuss later in this chapter, has thus also become a major competitive issue in U.S. industry today.



Quality improvement has become a major challenge for most companies today. One interesting area where quality has become especially important is what insiders call "green chemistry"—preventing pollution by better product engineering. 3M, for example, is dedicated to reducing the amount of polluting solvents it uses in its various products. Perhaps surprisingly, however, green chemistry has also helped the firm develop new products, many of which can be produced at lower cost and /or higher quality. This new plastic film, for example, serves as an iridescent reflector in products such as lamps and lights.

The Importance of Quality

To help underscore the importance of quality, the U.S. government created the **Malcolm Baldrige Award**, named after the former secretary of commerce who championed quality in U.S. industry. The award, administered by an agency of the Commerce Department, is given annually to firms that achieve major improvements in the quality of their products or services; that is, the award is based on changes in quality as opposed to absolute quality.

Recent winners of the Baldrige Award include Motorola; the Cadillac Division of General Motors; and

1. **Performance.** A product's primary operating characteristic. Examples are automobile acceleration and a television's picture clarity.
2. **Features.** Supplements to a product's basic functioning characteristics, such as power windows on a car.
3. **Reliability.** A probability of not malfunctioning during a specified period.
4. **Conformance.** The degree to which a product's design and operating characteristics meet established standards.
5. **Durability.** A measure of product life.
6. **Serviceability.** The speed and ease of repair.
7. **Aesthetics.** How a product looks, feels, tastes, and smells.
8. **Perceived quality.** As seen by a customer.

Source: Adapted and reprinted by permission of *Harvard Business Review*, from "Competing on the Eight Dimensions of Quality," by David A. Garvin, November/December 1987. Copyright © 1987 by Harvard Business School Publishing Corporation.

Table 21.2

Eight Dimensions of Quality

These eight dimensions generally capture the meaning of quality, which is a critically important ingredient to organizational success today. Understanding the basic meaning of quality is a good first step to managing it more effectively.

Malcolm Baldrige Award Named after a former secretary of commerce, this prestigious award is given to firms that achieve major quality improvements

divisions of Texas Instruments, AT&T, Xerox, and Ritz-Carlton. In addition, numerous other quality awards have also been created. For example, The Rochester Institute of Technology and *USA Today* give their Quality Cup award not to entire organizations but to individual teams of workers within organizations. Quality is also an important concern for individual managers and organizations for three very specific reasons: competition, productivity, and costs.[18]

Competition Quality has become one of the most competitive points in business today. Ford, DaimlerChrysler, General Motors, and Toyota, for example, each argue that its cars and trucks are higher in quality than the cars and trucks of the others. And American, United, and Continental airlines each claim that it provides the best and most reliable service. Indeed, it seems that almost every U.S. business has adopted quality as a major point of competition. Thus, a business that fails to keep pace may find itself falling behind foreign competition *and* other U.S. firms.[19]

Productivity Managers have also come to recognize that quality and productivity are related. In the past, many managers thought that they could increase output (productivity) only by decreasing quality. Managers today have learned the hard way that such an assumption is almost always wrong. If a firm installs a meaningful quality enhancement program, three events are likely to result. First, the number of defects is likely to decrease, causing fewer returns from customers. Second, because the number of defects goes down, resources (materials and people) dedicated to reworking flawed output will be decreased. Third, because making employees responsible for quality reduces the need for quality inspectors, the organization can produce more units with fewer resources.

Costs Improved quality also lowers costs. Poor quality results in higher returns from customers, high warranty costs, and lawsuits from customers injured by faulty products. Future sales are lost because of disgruntled customers. An organization with quality problems often has to increase inspection expenses just to catch defective products. We noted in Chapter 20, for example, how Whistler Corporation was using one hundred of its two hundred fifty employees just to fix poorly assembled radar detectors.[20]

Total Quality Management

total quality management (TQM) A strategic commitment by top management to change its whole approach to business and to make quality a guiding factor in everything the organization does

Once an organization makes a decision to enhance the quality of its products and services, it must then decide how to implement this decision. The most pervasive approach to managing quality has been called **total quality management**, or **TQM**—a real and meaningful effort by an organization to change its whole approach to business and to make quality a guiding factor in everything the organization does.[21] Figure 21.3 highlights the major characteristics of TQM.

Strategic Commitment The starting point for TQM is a strategic commitment by top management. Such commitment is important for several reasons. First, the organizational culture must change to recognize that quality is not just an ideal but is

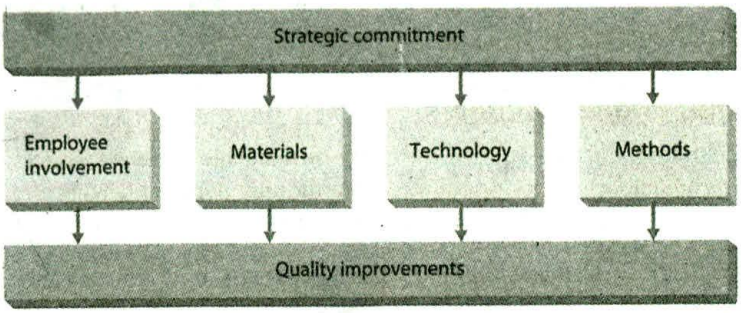


Figure 21.3

Total Quality Management

Quality is one of the most important issues facing organizations today. Total quality management, or TQM, is a comprehensive effort to enhance an organization's product or service quality. TQM involves the five basic dimensions shown here. Each is important and must be addressed effectively if the organization truly expects to increase quality.

instead an objective goal that must be pursued.[22] Second, a decision to pursue the goal of quality carries with it some real costs—for expenditures such as new equipment and facilities. Thus, without a commitment from top management, quality improvement will prove to be just a slogan or gimmick, with little or no real change.

Employee Involvement Employee involvement is another critical ingredient in TQM. Almost all successful quality enhancement programs involve making the person responsible for doing the job responsible for making sure it is done right.[23] By definition, then, employee involvement is a critical component in improving quality. Work teams, discussed in Chapter 19, are common vehicles for increasing employee involvement.

Technology New forms of technology are also useful in TQM programs. Automation and robots, for example, can often make products with higher precision and better consistency than can people. Investing in higher-grade machines capable of doing jobs more precisely and reliably often improves quality. For example, Nokia has achieved notable improvements in product quality by replacing many of its machines with new equipment. Similarly, most U.S. auto and electronics firms have all made significant investments in technology to help boost quality.

Materials Another important part of TQM is improving the quality of the materials that organizations use. Suppose that a company that assembles stereos buys chips and circuits from another company. If the chips have a high failure rate, consumers will return defective stereos to the company whose nameplate appears on them, not to the company that made the chips. The stereo firm then loses in two ways: refunds to customers and a damaged reputation. As a result, many firms have increased the quality requirements they impose on their suppliers as a way of improving the quality of their own products. Recall from our opening incident that Hartmann uses only high-quality materials in its luggage.

Methods Improved methods can improve product and service quality. Methods are operating systems used by the organization during the actual transformation process. For example, American Express Company has found ways to cut its

approval time for new credit cards from twenty-two to only five days. This cut results in improved service quality.

TQM Tools and Techniques

Beyond the strategic context of quality, managers can also rely on several specific tools and techniques for improving quality. Among the most popular today are benchmarking, outsourcing, speed, ISO 9000, and statistical quality control.

Benchmarking **Benchmarking** is the process of learning how other firms do things in an exceptionally high-quality manner. Some approaches to benchmarking are simple and straightforward. For example, Xerox routinely buys copiers made by other firms and takes them apart to see how they work. This practice enables the firm to stay abreast of improvements and changes its competitors are using. When Ford was planning the newest version of the Taurus, it identified the four hundred features that customers identified as being most important to them. It then found the competing cars that did the best job on each feature. Ford's goal was to equal or surpass each of its competitors on those four hundred features. Other benchmarking strategies are more indirect. For example, many firms study how L.L.Bean manages its mail-order business, how Disney recruits and trains employees, and how Federal Express tracks packages for applications they can employ in their own businesses.[24]



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Effective total quality management requires major commitments from an organization. Thorough and rigorous quality checks and inspections are often a fundamental part of quality management. But managers who pay only lip service to inspections, such as the managers illustrated here checking water quality, should not be surprised later when they discover major quality problems throughout their organizations. Only by using objective and rigorous statistical quality control measures can the firm be assured of high-quality products and services.

Outsourcing Another innovation for improving quality is outsourcing. **Outsourcing** is the process of subcontracting services and operations to other firms that can do them cheaper and/or better. If a business performs each and every one of its own administrative and business services and operations, it is almost certain to be doing at least some of them in an inefficient and/or low-quality manner. If those areas can be identified and outsourced, the firm will save money and realize a higher-quality service or operation.[25] Until recently, for example, Eastman Kodak handled all its own computing operations. Now, however, those operations are subcontracted to IBM, which handles all of Kodak's computing. The result is higher-quality computing systems and operations for Kodak at lower cost than before.

Speed A third popular TQM technique is speed. **Speed** is the time needed by the organization to get something accomplished, and it can be emphasized in any area, including developing, making, and distributing products or services.[26] A good illustration of the power of speed comes from General Electric. At one point, the firm needed six plants and three weeks to produce and deliver custom-made industrial circuit-breaker boxes. By emphasizing speed, the same product can now

1. Start from scratch (it's usually easier than trying to do what the organization does now faster).
2. Minimize the number of approvals needed to do something (the fewer people who have to approve something, the faster approval will get done).
3. Use work teams as a basis for organization (teamwork and cooperation work better than individual effort and conflict).
4. Develop and adhere to a schedule (a properly designed schedule can greatly increase speed).
5. Don't ignore distribution (making something faster is only part of the battle).
6. Integrate speed into the organization's culture (if everyone understands the importance of speed, things will naturally get done quicker).

Source: Adapted from Brian Dumaine, "How Managers Can Succeed Through Speed," *Fortune*, February 13, 1989, pp. 54–59. © 1989 Time Inc. All rights reserved.

Table 21.3

Guidelines for Increasing the Speed of Operations

Many organizations today are using speed for competitive advantage. Listed in the table are six common guidelines that organizations follow when they want to shorten the time they need to get things accomplished. Although not every manager can do each of these things, most managers can do at least some of them.

be delivered in three days, and only a single plant is involved. Table 21.3 identifies several basic suggestions that have helped companies increase the speed of their operations. For example, GE found it better to start from scratch with a remodeled plant. GE also wiped out the need for approvals by eliminating most managerial positions and set up teams as a basis for organizing work. Stressing the importance of the schedule helped Motorola build a new plant and start production of a new product in only eighteen months.

ISO 9000 Still another useful technique for improving quality is ISO 9000. **ISO 9000** refers to a set of quality standards created by the International Organization for Standardization. Five such standards, numbered 9000 to 9001; cover areas such as product testing, employee training, record keeping, supplier relations, and repair polices and procedures. Firms that want to meet these standards apply for certification and are audited by a firm chosen by the organization's domestic affiliate (in the United States, the American National Standards Institute). These auditors review every aspect of the firm's business operations in relation to the standards. Many firms report that merely preparing for an ISO 9000 audit has been helpful. Many firms today, including General Electric, Du Pont, Eastman Kodak, British Telecom, and Philips Electronics, are urging—or in some cases requiring—that their suppliers achieve ISO 9000 certification.[27]

benchmarking The process of learning how other firms do things in an exceptionally high-quality manner

outsourcing The process of subcontracting services and operations to other firms that can do them cheaper and/or better

speed The time needed by the organization to get something accomplished; it can be emphasized in any area, including developing, making, and distributing products or services

ISO 9000 A set of quality standards created by the International Organization for Standardization

Statistical Quality Control A final quality control technique is **statistical quality control (SQC)**. As the term suggests, SQC is primarily concerned with managing quality.[28] It is a set of specific statistical techniques that can be used to monitor quality. *Acceptance sampling* involves sampling finished goods to ensure that quality standards have been met. Acceptance sampling is effective only when the correct percentage of products that should be tested (for example, 2, 5, or 25 percent) is determined. This decision is especially important when the test renders the product useless. Flashcubes, wine, and collapsible steering wheels, for example, are consumed or destroyed during testing. Another SQC method is *in-process sampling*. In-process sampling involves evaluating products during production so that

statistical quality control (SQC) A set of specific statistical techniques that can be used to monitor quality; includes acceptance sampling and in-process sampling

needed changes can be made. The painting department of a furniture company might periodically check the tint of the paint it is using. The company can then adjust the color as necessary to conform to customer standards. The advantage of in-process sampling is that it allows problems to be detected before they accumulate.

MANAGEMENT IMPLICATIONS All managers today need to understand and appreciate the importance of total quality. Specifically, they need to understand the meaning of quality as well as its importance. The ingredients of total quality management are important in many organizations today. Various TQM tools and techniques are also important.

■ Managing Productivity

While the current focus on quality by U.S. companies is a relatively recent phenomenon, managers have been aware of the importance of productivity for several years. The stimulus for this attention was a recognition that the gap between productivity in the United States and productivity in other industrialized countries was narrowing. This section describes the meaning of productivity and underscores its importance. After summarizing recent productivity trends, we suggest ways that organizations can increase their productivity.

The Meaning of Productivity

productivity An economic measure of efficiency that summarizes the value of outputs relative to the value of the inputs used to create them

In a general sense, **productivity** is an economic measure of efficiency that summarizes the value of outputs relative to the value of the inputs used to create them.[29] Productivity can be and often is assessed at different levels and in different forms.

Levels of Productivity By level of productivity, we mean the units of analysis used to calculate or define productivity. For example, aggregate productivity is the total level of productivity achieved by a country. Industry productivity is the total productivity achieved by all the firms in a particular industry. Company productivity, as the term suggests, is the level of productivity achieved by an individual company. Unit productivity and individual productivity refer to the productivity achieved by a unit or department within an organization and the level of productivity attained by a single person, respectively.

Forms of Productivity There are many different forms of productivity. Total factor productivity is defined by the following formula:

$$\text{Productivity} = \frac{\text{Outputs}}{\text{Inputs}}$$

Total factor productivity is an overall indicator of how well an organization uses all its resources, such as labor, capital, materials, and energy, to create all its products and services. The biggest problem with total factor productivity is that all the in-

gredients must be expressed in the same terms—dollars (it is difficult to add hours of labor to the number of units of a raw material in a meaningful way). Total factor productivity also gives little insight into how a situation can be changed to improve productivity. Consequently, most organizations find it more useful to calculate a partial productivity ratio. Such a ratio uses only one category of resource. For example, labor productivity can be calculated by the following simple formula:

$$\text{Labor productivity} = \frac{\text{Outputs}}{\text{Direct labor}}$$

This method has two advantages. First, it is not necessary to transform the units of input into another unit. Second, this method provides managers with specific insights into how changing different resource inputs affects productivity. Suppose that an organization can manufacture one hundred units of a particular product with twenty hours of direct labor. The organization's labor productivity index is 5 (or 5 units per labor hour). Now suppose that worker efficiency is increased (through one of the ways to be discussed later in this chapter) so that the same twenty hours of labor results in the manufacture of 120 units of the product. The labor productivity index increases to 6 (6 units per labor hour), and the firm can see the direct results of a specific managerial action.

The Importance of Productivity

Managers consider it important that their firms maintain high levels of productivity for various reasons. Firm productivity is a primary determinant of an organization's level of profitability and, ultimately, its ability to survive. If one organization is more productive than another, it will have more products to sell at lower prices and have more profits to reinvest in other areas. Productivity also partially determines people's standards of living within a particular country. At an economic level, businesses consume resources and produce goods and services. The goods and services created within a country can be used by that country's citizens or exported for sale in other countries. The more goods and services the businesses within a country can produce, the more goods and services the country's citizens will have. Even goods that are exported result in financial resources flowing back into the home country. Thus, the citizens of a highly productive country are likely to have noticeably higher standards of living than are the citizens of a country with low productivity.

Productivity Trends

The United States has the highest level of productivity in the world. For example, Japanese workers produce only about 76 percent as much as U.S. workers, while German workers produce about 84 percent as much.[30] But in recent years, other countries have been closing the gap.[31] This trend was a primary factor in the decisions made by U.S. businesses to retrench, retool, and become more competitive in the world marketplace. For example, General Electric's dishwasher plant in Louisville has cut its inventory requirements by 50 percent, reduced labor costs

from 15 percent to only 10 percent of total manufacturing costs, and cut product development time in half. As a result of these kinds of efforts, productivity trends have now leveled out and U.S. workers are generally maintaining their lead in most industries.[32]

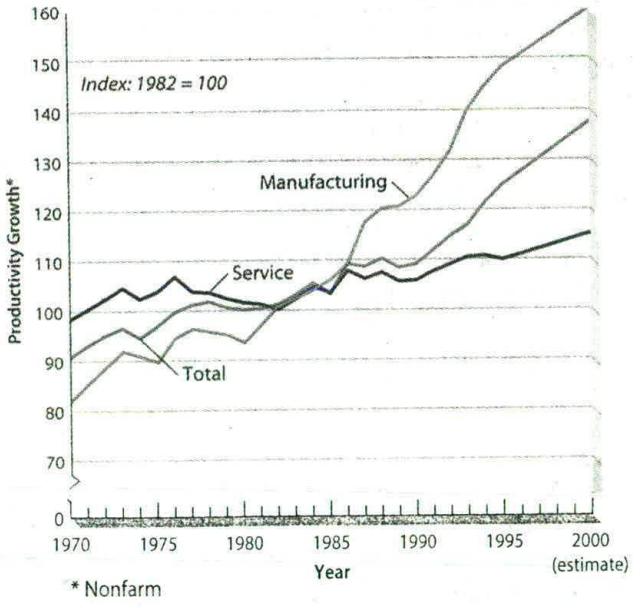
One important factor that has hurt U.S. productivity indices has been the tremendous growth of the service sector in the United States. While this sector grew, its productivity levels did not. One part of this problem relates to measurement. For example, it is fairly easy to calculate the number of tons of steel produced at a Bethlehem Steel mill and divide it by the number of labor hours used; it is more difficult to determine the output of an attorney or a certified public accountant. Still, almost everyone agrees that improving service-sector productivity is the next major hurdle facing U.S. business.[33]

Figure 21.4 shows manufacturing productivity growth since 1960 in terms of annual average percentage of increase. As you can see, that growth slowed during the 1970s but began to rise again in the late 1980s. Some experts believe that productivity both in the United States and abroad will continue to improve at even more impressive rates. Their confidence rests on the potential ability of technology to improve operations. For example, Ford Motor Company has unveiled plans for a comprehensive purchasing network it calls AutoXchange. This system will replace all of its current purchasing arrangements, eliminating the need for personal contracts, paper and telephone ordering, and the like—saving billions of dollars and sharply boosting productivity in the process. Ford projects that this part of its business may well achieve annual productivity growth rates of up to 10 percent.[34]

Figure 21.4

Manufacturing and Service Productivity Growth Trends (1970–2000)

Both manufacturing productivity and service productivity in the United States continue to grow, although manufacturing productivity is growing at a faster pace. Total productivity, therefore, also continues to grow.



Source: U.S. Bureau of Labor Statistics.

Improving Productivity

How does a business or industry improve its productivity? Numerous specific suggestions made by experts generally fall into two broad categories: improving operations and increasing employee involvement.

Improving Operations One way that firms can improve operations is by spending more on research and development (R&D). R&D spending helps identify new products, new uses for existing products, and new methods for making products. Each of these research activities contributes to productivity. For example, Bausch & Lomb almost

missed the boat on extended-wear contact lenses because the company had neglected R&D. When it became apparent that its major competitors were almost a year ahead of Bausch & Lomb in developing the new lenses, management made R&D a top priority. As a result, the company made several scientific breakthroughs, shortened the time needed to introduce new products, and greatly enhanced both total sales and profits—and all with a smaller workforce than the company used to employ. Even though other countries are greatly increasing their R&D spending, the United States continues to be the world leader in this area.

Another way firms can boost productivity through operations is by reassessing and revamping their transformation facilities. We noted earlier how one of GE's modernized plants does a better job than six antiquated ones. Just building a new factory is no guarantee of success, but IBM, Ford, Caterpillar, and many other businesses have achieved dramatic productivity gains by revamping their production facilities. Facility refinements are not limited to manufacturers. Most McDonald's restaurants now have drive-through windows, and many have moved soft-drink dispensers out to the restaurant floor so customers can get their own drinks. Each of these moves is an attempt to increase the speed with which customers can be served and thus is an increase in productivity.

Increasing Employee Involvement The other major thrust in productivity enhancement has been toward employee involvement. We noted earlier that participation can enhance quality; it can also boost productivity. Examples of this involvement are an individual worker being given a bigger voice in how she does her job, a formal agreement of cooperation between management and labor, and total involvement throughout the organization. GE eliminated most of the supervisors at its one new circuit-breaker plant and put control in the hands of workers.

Another method popular in the United States is increasing the flexibility of an organization's workforce by training employees to perform several different jobs. Such cross-training allows the firm to function with fewer workers because workers can be transferred easily to areas where they are most needed. For example, the Lechmere department store in Sarasota, Florida, encourages workers to learn numerous jobs within the store. One person in the store can operate a forklift in the stockroom, serve as a cashier, or provide customer service on the sales floor. At one Motorola plant, 397 of 400 employees have learned at least two skills under a similar program. *Working with Diversity* discusses the importance of computer literacy in enhancing productivity in the sawmill business today.

Rewards are essential to making employee involvement work. Firms must reward people for learning new skills and using them proficiently. At Motorola, for example, workers who master a new skill are assigned for five days to a job requiring them to use that skill. If they perform with no errors, they are moved to a higher pay grade and then they move back and forth between jobs as they are needed. If there is a performance problem, they receive more training and practice. This approach is fairly new, but preliminary indicators suggest that it can

WORKING WITH DIVERSITY

COMPUTER-LITERATE WORKERS NEEDED AT THE MILL

Sawmills have come into the computer age, leading to more diversity in their workforces. Although strength was once a primary qualification for mill workers, sawmills like Willamette Industries now put a premium on computer literacy. During the process of sawing giant logs into straight pieces of lumber, sawmills traditionally wasted a lot of wood. These days, however, mills have improved productivity and quality by computerizing many operations and adding technology to assist employees in moving raw materials through the mill. As a result, Oregon-based Willamette and its counterparts around the country are on the lookout for employees who know how to work with computers.

At Willamette, laser sensors analyze the dimensions of each 2,500-pound log and determine how to slice it and thus yield the most saleable lumber with the least waste. If the computer finds that a log is too long to move easily through the saw, it signals employees to cut the log shorter; if the computer detects a curve in the log, it automatically adjusts the saw blade to compensate. The computer can even examine the latest market prices for boards of various sizes and determine which cuts will extract the most profitable sizes and shapes from a particular log. Logs that need finishing touchups move through additional sensors that guide computerized saws to square off ragged ends. Within a few years, the mill may install ultrasound or other advanced technologies for identifying problems such as rot inside logs, which laser equipment can't detect.

Thanks to all these enhancements, Willamette has been able to continue producing the same amount of lumber with 12 percent fewer logs and 20 percent fewer employees. Higher productivity helps the mill cope with another problem. Like so many of its competitors and companies in numerous other industries, Willamette can't always find a large enough pool of qualified job candidates during high-employment periods. Thus, computerizing operations helps the mill operate at full capacity with a smaller workforce—but a workforce that is computer-savvy.

I've just been amazed at the technological improvements.

– Mark Elston, plant manager for Willamette Industries*

Reference: George Hager, "Sawmill Illustrates the Buzz About Productivity," *USA Today*, March 21, 2000, pp. 1B, 2B (*quote on p. 2B).

increase productivity significantly. Many unions resist such programs because they threaten job security and reduce a person's identification with one skill or craft.

MANAGEMENT IMPLICATIONS Managers should understand the nature and meaning of productivity. They should also appreciate its importance. In addition, they should be familiar with productivity trends and be acquainted with common methods for improving productivity.

Summary of Key Points

Operations management is the set of managerial activities that organizations use in creating their products and services. Operations management is important to both manufacturing and service organizations. It plays an important role in an organization's strategy.

The starting point in using operations management is designing appropriate operations systems. Key decisions that must be made as part of operations systems design relate to product and service mix, capacity, and facilities.

Technology plays an important role in quality. Automation is especially important today. Numerous computer-aided manufacturing techniques are widely practiced. Robotics in particular is a growing area. Technology is as relevant to service organizations as it is to manufacturing organizations.

After an operations system has been designed, it must then be implemented. Major areas of interest during the use of operations systems are purchasing and inventory management.

Quality is a major consideration for all managers today. Quality is important because it affects competition, productivity, and costs. Total quality management is a comprehensive, organization wide effort to enhance quality through various avenues.

Productivity is also a major concern to managers. Productivity is a measure of how efficiently an organization is using its resources to create products or services. The United States still leads the world in individual productivity, but other industrialized nations are catching up.

Discussion Questions

Questions for Review

1. What is the relationship of operations management to overall organizational strategy? Where do productivity and quality fit into that relationship?
2. What are the major components of operations systems? How are they designed?
3. What is quality? Why is it so important today?
4. What is productivity? How can it be increased?

Questions for Analysis

5. Is operations management linked most closely to corporate-level, business-level, or functional strategies? Why or in what way?
6. How might the management functions of planning, organizing, and leading relate to the management of quality and productivity?
7. Some people argue that quality and productivity are inversely related; as one goes up, the other goes down. How can that argument be refuted?

Questions for Application

8. Research information on several different organizations' uses of operations management. What similarities and differences do you find? Why do you think those similarities and differences exist?
9. Interview local managers in different kinds of organizations (business, service, religious) to determine how they deal with quality and productivity.
10. Consider your college or university as an organization. How might it develop a TQM program?

BUILDING EFFECTIVE *conceptual* SKILLS

Exercise Overview

A manager's conceptual skills are her or his ability to think in the abstract. As this exercise will demonstrate, a relationship often exists between the conceptual skills of key managers in an organization and that organization's ability to implement total quality initiatives.

Exercise Background

Conceptual skills may be useful in helping managers see opportunities for improving some aspect of their own operations in observations or experiences gleaned from dealings with other organizations.

To begin this exercise, carefully recall the last time you ate in a restaurant that involved some degree of self-service. Examples might include a fast-food restaurant like McDonald's, a cafeteria, or even a traditional restaurant with a salad bar. Recall as much about the experience as possible and develop some ideas about why the restaurant is organized and laid out as it is.

Now carefully recall the last time you purchased something in a retail outlet. Possible examples might be an article of clothing from a specialty store, a book from a bookstore, or some software from a computer store. Again recall as much about the experience as possible and develop some ideas about why the store is organized and laid out as it is.

Exercise Task

Using the two examples you developed above, do the following:

1. Identify three or four elements of the service received at each location that you think most directly influenced—either positively or negatively—the quality and efficiency of the experience there.
2. Analyze the service elements from one organization and see if they can somehow be used by the other.
3. Now repeat the process for the second organization.

BUILDING EFFECTIVE *diagnostic* SKILLS

Exercise Overview

As noted in the chapter, the quality of a product or service is relative to price and expectations. A manager's diagnostic skills—the ability to visualize responses to a situation—can be useful in helping to position quality relative to price and expectations.

Exercise Background

Think of a recent occasion in which you purchased a tangible product, for example, clothing, electronic equipment, luggage, or professional supplies, that you subsequently came to feel was of especially high quality. Now recall another product that you evaluated as having appropriate or adequate quality, and a third that you felt had low or poor quality. Next, recall parallel experiences involving purchases of services. Examples might include an airline, train, or bus trip; a meal in a restaurant; a haircut; or an oil change for your car.

Finally, recall three experiences in which both products and services were involved. Examples might include having questions answered by someone about a product you were buying or returning a defective or broken product for a refund or warranty repair. Try to recall instances in which there was an apparent disparity between product and service quality (i.e., a poor-quality product accompanied by outstanding service or a high-quality product accompanied by mediocre service).

Exercise Task

Using the nine examples identified above, do the following:

1. Assess the extent to which the quality you associated with each was a function of price and your expectations.
2. Could the quality of each be improved without greatly affecting price? If so, how?
3. Can high-quality service offset only adequate or even poor product quality? Can outstanding product quality offset only adequate or even poor-quality service?

BUILDING EFFECTIVE *technical* SKILLS

Exercise Overview

Technical skills are the skills necessary to accomplish or understand the specific kind of work being done in an organization. This exercise will help you see how technical skills relate to quality, productivity, and operations management.

Exercise Background

Select a product that you use regularly. Examples might include computers, compact disks, books, or apparel. Next, do some research to learn as much as you can about how the product you chose is designed, produced, and distributed to consumers.

Assume that you have decided to go into business to make the product selected. Create two columns on a sheet of paper. In one column list all the activities necessary to produce the product that you know how to do (i.e., install software on a computer, sew two pieces of fabric together). Then list in the next column the activities that you do not know how to do.

Exercise Task

With the background information above as context, do the following:

1. Specify where people might learn the skills necessary to perform all the activities for the product you intend to make.
2. Rank-order the importance of the skills regarding the product.
3. Determine how many different people you will likely need to employ and thus have a full skill set available.

CHAPTER CLOSING CASE

BUILDING BETTER CARS IN BRAZIL

Better in Brazil? DaimlerChrysler, Volkswagen, Ford, General Motors, and Toyota are just some of the auto manufacturers that have opened factories in Brazil to turn out cars, vans, and trucks. These auto makers and their suppliers have been pioneering productivity-boosting methods that save money and streamline the assembly process.

One innovation is the combination of just-in-time (JIT) and just-in-sequence (JIS) methods. Here's how DaimlerChrysler and its suppliers are using these methods to make Dakota pickup trucks in a manufacturing center south of São Paulo. Dana Corp., a key supplier, is responsible for procuring 205 parts from sixty-seven suppliers to build chassis subassemblies (complete with

fuel tank, brakes, suspension, and wheels). Dana's trucks haul three subassemblies down the road to the Chrysler factory a few miles away every forty-two minutes. The subassemblies arrive in time to be combined with engines and incorporated into the pickup truck cabs rolling down the assembly line at that moment. Thanks to JIT and JIS methods, a new Dakota truck rolls off the end of the line every fourteen minutes. DaimlerChrysler saves space because the subassemblies are put together in Dana's facility. It also saves time and effort because Dana, not DaimlerChrysler, has to locate and purchase all the parts for the subassemblies.

The Dakota plant is home to another money-saving idea: outsourcing an activity that is still performed on the premises. Supplier PPG Industries provides the paints as well as the employees to prime and paint each Dakota truck within DaimlerChrysler's factory. As a result, DaimlerChrysler doesn't have to invest in raw materials or hire employees for this part of the manufacturing process—and it benefits from PPG's expertise in developing new paints and painting practices.

Even the assembly lines look different. In the newer VW-Audi and Mercedes factories in Brazil, for example, cars move through the first half of the assembly line mounted on large wooden platforms. Workers stand on these platforms and complete their assembly tasks, then dismount and walk back to the car behind to go through the routine again. In contrast, workers in traditional plants generally have to work as they walk to keep up with cars moving down the assembly lines. VW-Audi also tracks vehicles as they progress through the factory by posting a transmitter on each car's roof and monitoring the signals to identify slowdowns and to keep output on schedule.

Suppliers like Dana Corp. play a critical role in maintaining productivity in these plants. Johnson Controls, which makes car seats, instrument panels, and other components, has five production centers in Brazil and is thinking of building additional facilities to give its factory customers what they want, when they want it. Yet suppliers still have to juggle their own purchasing, inventory, and production functions to achieve productivity goals by minimizing costs while maximizing output. Dana, for example, needs sufficient capacity to keep up with its customers' manufacturing capacity; anticipating future demand, the Dana facility has excess capacity right now, as does the Dakota plant it serves. And locating near a particular plant to provide JIT and JIS benefits effectively ties the supplier to that customer, which can cause problems if the customer reduces output or withdraws from the market.

Competitive pressures also affect what suppliers decide to do in Brazil. After all, no supplier wants to say no to a customer—and then watch as a rival says yes and takes away a significant chunk of business. At the same time, suppliers are making hefty investments in plant, equipment, and personnel to accommodate their automaker customers. Although experts are projecting increased demand for cars and other vehicles, which should translate into higher sales for auto makers and their suppliers, an economic turndown or a currency crisis could hurt. On the other hand, with little increase in demand in the United States, Japan, and Europe, the auto makers are looking toward South American markets for future growth—and advances in productivity.

Case Questions

1. What issues do operations managers for the auto makers and their suppliers face in Brazil?
2. What total quality management tools and techniques are being applied in these Brazilian operations?
3. Which of the three approaches to facilities layout do the auto makers appear to be using in Brazil? Why is this approach appropriate?

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CHAPTER 22

Managing Information and Information Technology

OPENING INCIDENT

Highsmith Inc., based in Fort Atkinson, Wisconsin, is one of the largest mail-order suppliers of library and school equipment (book displays, audio-visual equipment), furniture, and supplies (educational software) in the United States. Indeed, its current catalog includes over twenty-five thousand items. One fundamental key to Highsmith's business success has been its strategic approach to managing information.

A central resource in Highsmith's information system is its corporate library. Internal information resources include books, magazines, over seven hundred journals, CD-ROM sources, and support software. Its networked computerized information system also provides electronic links to external information sources such as commercial databases and numerous interlibrary systems. In addition, Highsmith librarians maintain an informal network of information providers throughout the country. The library staff itself plays an essential role because of its expertise and experience in identifying and locating information requests from any of Highsmith's activity areas and on business processes ranging from corporate planning to self-improvement.

President and CEO Duncan Highsmith believes that external events—even some that seem remote and unrelated to the business—can create threats and opportunities for companies. He believes that if employees are focused only on internal operations, they won't see the bigger picture, so he encourages a more eclectic approach of information gathering from a broad range of sources. New cultural trends and political forces eventually change the way a society functions, and Highsmith doesn't want to get caught short when they do. He wants to anticipate changes that can reshape the social environment and he wants to be prepared in advance rather than be forced to react after the fact.

Highsmith is also convinced that if the right data is assembled in the right way, information gleaned from various sources—from seemingly eclectic sources—is the only way to get a clear picture of the future. He believes that, with access to the right information, his employees can anticipate changes and then turn them to the company's advantage. However, he does not believe that focusing on the future comes naturally to most people. That approach, he contends, doesn't work when you need to make strategic-level decisions.

"The right information can help create strategic choices for a business."

—Duncan Highsmith, CEO of Highsmith, Inc.

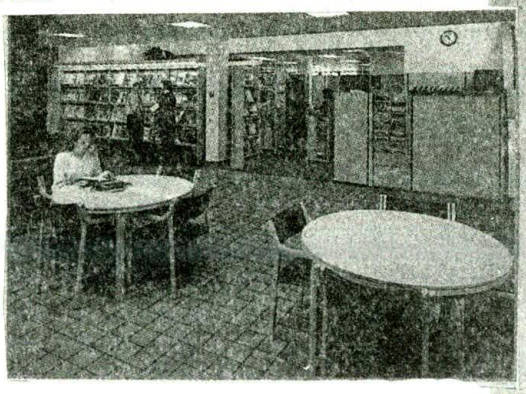
LEARNING OBJECTIVES

After studying this chapter, you should be able to:

1. Describe the role and importance of information in the manager's job and identify the basic building blocks of information technology.
2. Discuss the basic factors that determine an organization's information technology needs and describe the basic kinds of information systems used by organizations.
3. Discuss how information systems can be managed.
4. Describe how information systems affect organizations.

One interesting characteristic of Highsmith's organization chart is that the library is portrayed at the same level as the firm's other important functions, including marketing, human resources, and accounting. And Lisa Gueda Carreño, the firm's senior librarian, plays the role of senior manager. Carreño is also responsible for maintaining the firm's information system so that its usefulness is maximized for everyone in the organization.

The strength of the system is its role as a knowledge-management tool. Specifically, Highsmith's information system allows anyone in the firm to access any information they need in whatever form is most useful to them. And although Carreño relies on the Internet, she also realizes that, as an information source, it isn't always perfect. Indeed, she argues that it's full of potentially misleading hype and promises, and it's unfamiliar territory to new users. Web-search services—Internet search directories, web browsers, and search engines—often provide spotty information, ranging from full-disclosure sites to sites that offer the truth but not the whole truth. Some web services report information only for sites that pay to be listed and ignore others. Even among those that report on a huge number of companies, some may give preferential treatment—that is, more favorable reports—to business partners.[1]



CHAPTER OUTLINE

- **Information and the Manager**
  - Role of Information in the Manager's Job
  - Characteristics of Useful Information
  - Information Management as Control
  - Building Blocks of Information Technology
- **Types of Information Systems**
  - User Groups and System Requirements
  - Major Systems by Level
  - The Internet
- **Managing Information Systems**
  - Creating Information Systems
  - Integrating Information Systems
  - Using Information Systems
  - Managing Information Security
  - Understanding Information System Limitations
- **The Impact of Information Systems on Organizations**
  - Leaner Organizations
  - More Flexible Operations
  - Increased Collaboration
  - More Flexible Work Sites
  - Improved Management Processes
  - Changed Employee Behaviors

As the Highsmith experience illustrates, information systems and communication networks can have a dramatic effect on the firm's culture and its performance. Indeed, today's businesses rely on information management in ways that could not have been foreseen as recently as a decade ago. Managers now turn to digital technology as an integral part of organizational resources and as a means of conducting everyday business. Every major firm's business activities—such as designing services, ensuring product delivery and cash flow, evaluating employees, and creating advertising—are linked to information systems. Effective information management requires a commitment of resources to establish, maintain, and upgrade as new technologies emerge.

This chapter is about advances made by organizations in establishing, maintaining, and upgrading information technology. We describe the role and importance of information to managers, the characteristics of useful information, and information management as control, and we identify the basic building blocks of information systems. We discuss the general and specific determinants of information technology needs. We then discuss the primary kinds of information technology used in organizations and describe how this technology is managed.

■ Information and the Manager

Information has always been an integral part of every manager's job. Its importance and therefore the need to manage it continue to grow at a rapid clip. To appreciate this trend, we need to understand the role of information in the manager's job, the characteristics of useful information, and the nature of information management as control.

Role of Information in the Manager's Job

In Chapters 1 and 18, we highlighted the role of communication in the manager's job. Information is a vital part of communication, so management and information are closely related. Indeed, it is possible to conceptualize management itself as a series of steps involving the reception, processing, and dissemination of information. As illustrated in Figure 22.1, the manager is constantly bombarded with data and information (the difference between the two is noted later).

Suppose that Bob Henderson is an operations manager for a large manufacturing firm. During the course of a normal day, Bob receives many different pieces of information from formal and informal conversations and meetings, telephone calls, personal observations, e-mails, letters, reports, memos, the Internet, and trade publications. He gets a report from a subordinate that explains exactly how to solve a pressing problem, so he calls the subordinate and tells him to put the solution into effect immediately. He scans a copy of a report prepared for another manager, sees that it has no relevance to him, and discards it. He sees a *Wall Street Journal* article that he knows Sara Ferris in marketing should see, so he passes it on to her. He gets an electronic summary of yesterday's production report, but since

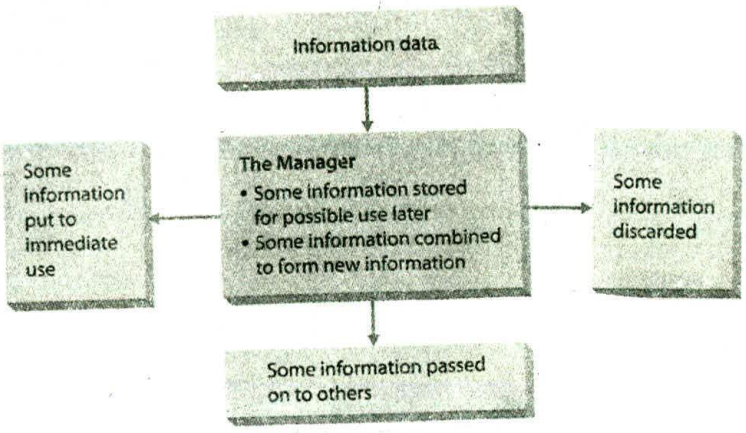


Figure 22.1

Managers as Information Processors

Managers who receive information and data must decide what to do with it. Some is stored for possible later use, and other information is combined to form new information. Subsequently, some is used immediately, some is passed on to others, and some is discarded.

he knows he won't need to analyze it for another week, he stores it. He observes a worker doing a job incorrectly and realizes that the incorrect method is associated with a mysterious quality problem that someone told him about last week.

A key part of information-processing activity is differentiating between data and information. **Data** are raw figures and facts reflecting a single aspect of reality. The facts that a plant has thirty-five machines, that each machine is capable of producing one thousand units of output per day, that current and projected future demand for the units is thirty thousand per day, and that workers sufficiently skilled to run the machines make $20 an hour are data.

data Raw figures and facts reflecting a single aspect of reality

Information is data presented in a way or form that has meaning.[2] Thus, combining and summarizing the four pieces of data given above provides information—the plant has excess capacity and is therefore incurring unnecessary costs. Information has meaning to a manager and provides a basis for action. The plant manager might use the information and decide to sell four machines (perhaps keeping one as a backup) and transfer five operators to other jobs.

information Data presented in a way or form that has meaning

A related term is **information technology (IT)**. Information technology refers to the resources used by an organization to manage information that it needs to carry out its mission. IT may consist of computers, computer networks, telephones, facsimile machines, and other pieces of hardware. In addition, IT also involves software that facilitates the system's abilities to manage information in a way that is useful for managers.[3]

information technology (IT) The resources used by an organization to manage information that it needs to carry out its mission

The grocery industry uses data, information, and information technology to automate inventory and checkout facilities. The average Kroger store, for example, carries over twenty-one thousand items in each of its stores. Computerized scanning machines at the checkout counters can provide daily sales figures for any product. These numbers alone are data and have little meaning in their pure form. But information is created from this data by another computerized system. Using this IT system, managers can identify how any given product or product line is selling in any number of stores over any meaningful period of time.

Characteristics of Useful Information

What factors differentiate between information that is useful and information that is not useful? In general, information is useful if it is accurate, timely, complete, and relevant. *Management Infotech* describes part of the role that less-than-useful information played in recent events at Ford and Firestone.

accurate information Provides a valid and reliable reflection of reality

Accurate For information to be of real value to a manager, it must be accurate. Accuracy means that the information must provide a valid and reliable reflection of reality. A Japanese construction company once bought information from a consulting firm about a possible building site in London. The Japanese were told that the land, which would be sold in a sealed bid auction, would attract bids of close to $250 million. They were also told that the land currently held an old building

MANAGEMENT INFOTECH

DATABASE DECISIONS

The pattern of problems that led to the second-largest tire recall in U.S. history might have been detected earlier if Ford had received and analyzed data about the tires used as original equipment on Explorer vehicles. More than 6.5 million Firestone tires were recalled in 2000 because of unexpected tread separation that, in some cases, led to accidents. Ford got involved because millions of its Explorer sport-utility vehicles rolled out of dealerships equipped with Firestone tires, as did some of its Mercury Mountaineer SUVs and Ford Ranger pickups.

Problems with Firestone tires on Ford Explorers first surfaced in the early 1990s, when attorneys began filing lawsuits over deaths that occurred after tire treads separated and vehicles flipped over. By 1999, Ford was receiving reports from the Persian Gulf and Latin America that some Firestone tires were failing without warning on Ford vehicles. The company replaced tires on nearly forty-seven thousand SUVs in those countries, but managers didn't distinguish these incidents as part of a broader pattern. Ford engineers dissected a sample of used tires from Explorer models and invited Firestone to conduct its own tests, but neither company found any evidence of problems.

Although Ford routinely received complaints about parts under warranty, it did not receive warranty data about the tires on its vehicles. Instead, Firestone, as the manufacturer, was responsible for handling the warranty claims on its tires, so it collected the data when necessary. Without a database of information about problems on various brands and types of tires, Ford couldn't compare the frequency of problems involving Firestone tires on Explorers with problems involving other tires.

As the National Highway Traffic Safety Administration began looking into the issue, Ford undertook an intensive investigation to find out whether other brands of tires had experienced separation problems on its vehicles. It also worked with Firestone to analyze tire warranty data and determine where most of the problems had occurred and which plants had manufactured the problem tires. By the time the tires were recalled, Ford personnel had pored over countless records—and built a database the company planned to share with the tire manufacturers.

Taken across the aggregate number of vehicles out there, the incident reports involved a very minuscule number.

—Unnamed Ford executive.*

Reference: Robert L. Simison, Karen Lundegaard, Norihiko Shirouzu, and Jenny Heller, "Blowout: How the Tire Problem Turned into a Crisis for Firestone and Ford," *Wall Street Journal*, August 10, 2000, pp. A1, A12 (*quote on A12).

that could easily be demolished. Thus, the Japanese bid $255 million—which ended up being $90 million more than the next-highest bid. And to make matters worse, a few days later the British government declared the building historic, preempting any thought of demolition. Clearly, the Japanese acted on information that was less than accurate.



Organizations rely on information that needs to be accurate, timely, complete, and relevant. Consider, for example, Sameday.com, an Internet firm based in Southern California. Sameday.com handles inventory and delivery for a roster of web businesses in the Los Angeles area. The firm prides itself on getting shipments to customers as close to "now" as possible. But in order to do this, these Sameday.com drivers must have information that tells them exactly what needs to be delivered, where, when, and in what sequence.

Timely Information also needs to be timely. Timeliness does not necessarily mean speediness; it means only that information needs to be available in time for appropriate managerial action. What constitutes timeliness is a function of the situation facing the manager. When Marriott was gathering information for its Fairfield Inn project, managers projected a six-month window for data collection. They felt this amount of time would give them an opportunity to do a good job of getting the information they needed while not delaying the project too much. In contrast, Marriott's computerized reservation and accounting system can provide a manager today with last night's occupancy level at any Marriott facility.[4]

Complete Information must tell a complete story for it to be useful to a manager. If it is less than complete, the manager is likely to get an inaccurate or distorted picture of reality. For example, managers at Kroger used to think that house-brand products were more profitable than national brands because they yielded higher unit profits. On the basis of this information, they gave house brands a lot of shelf space and centered a lot of promotional activities around them. As Kroger's managers became more sophisticated in understanding their information, however, they realized that national brands were actually more profitable over time because they sold many more units than house brands during any given period of time. Hence, while a store might sell ten cans of Kroger coffee in a day with a profit of fifty cents per can (total profit of $5.00), it would also sell fifteen cans of Maxwell House with a profit of forty cents per can (total profit of $6.00) and ten vacuum bags of Starbucks coffee with a profit of $1.00 per bag (total profit of $10.00). With this more complete picture, managers can do a better job of selecting the right mix of Kroger, Maxwell House, and Starbucks coffee to display and promote.

Relevant Finally, information must be relevant if it is to be useful to managers. Relevance, like timeliness, is defined according to the needs and circumstances of a particular manager. Operations managers need information on costs and productivity, human resource managers need information on hiring needs and

timely information Available in time for appropriate managerial action

complete information Provides the manager with all the information he or she needs

relevant information Assures managers that the information is useful to them in their particular circumstances for their particular needs

turnover rates, and marketing managers need information on sales projections and advertising rates. As Wal-Mart contemplates countries for possible expansion opportunities, it gathers information about local regulations, customs, and so forth. But the information about any given country isn't really relevant until the decision is made to enter that market.

Information Management as Control

The manager also needs to appreciate the role of information in control—indeed, to see information management as a vital part of the control process in the organization.[5] As already noted, managers receive much more data and information than they need or can use. Accordingly, deciding how to handle each piece of data and information involves a form of control.[6]

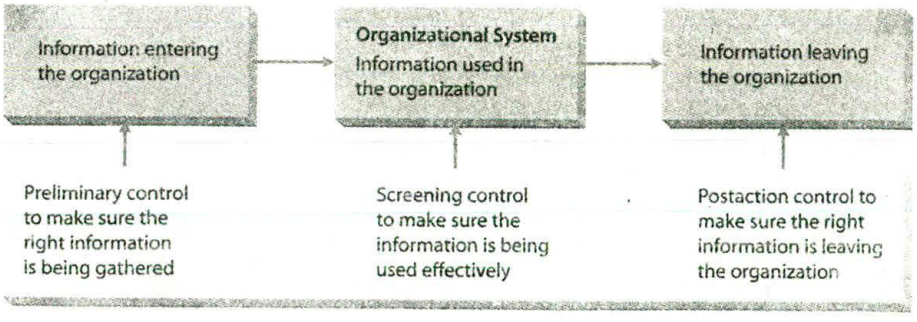
The control perspective on information management is illustrated in Figure 22.2. Information enters, is used by, and leaves the organization. For example, Marriott took great pains to make sure it got all the information it needed to plan for and enter the economy lodging business. Once this preliminary information was gathered, it was necessary to ensure that the information was made available in the proper form to everyone who needed it. In general, the effort to ensure that information is accurate, timely, complete, and relevant is a form of screening control. Finally, Marriott wanted to make sure that its competitors did not learn about its plans until the last possible minute. It also wanted to time and orchestrate news releases, public announcements, and advertising for maximum benefit. These efforts thus served a postaction control function.

MANAGEMENT IMPLICATIONS Managers need to understand and appreciate the role of information in their jobs. In addition, they should know the characteristics that typify useful information and understand the control function served by effective information management.

Figure 22.2

Information Management as Control

Information management can be part of the control system via preliminary, screening, and/or postaction control mechanisms. Because information from the environment is just as much a resource as raw materials or finances, it must be monitored and managed to promote its efficient and effective utilization.



Building Blocks of Information Technology

Information technology is generally of two types—manual or computer-based. All information technology, and the systems that it defines, has five basic parts. Figure 22.3 diagrams these parts for a computer-based information technology system. The *input medium* is the device used to add data and information into the system. For example, the optical scanner at Kroger enters point-of-sale information. Likewise, someone can also enter data through a keyboard, with a mouse, or from other computers or the Internet.

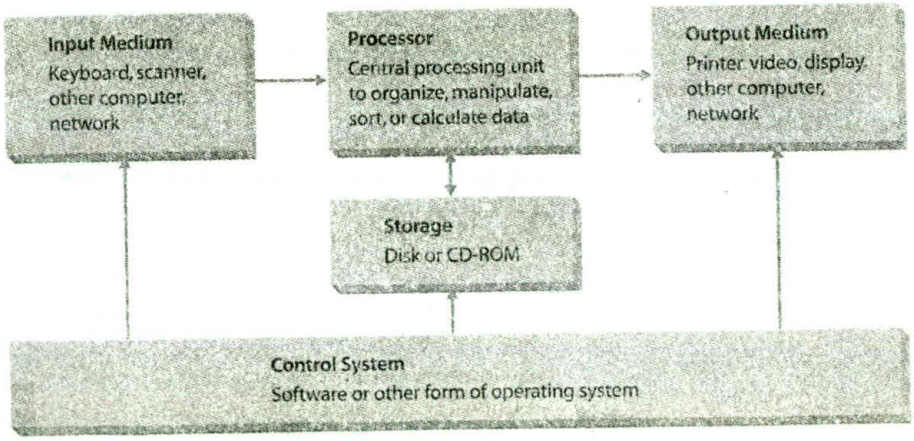
The data entered into the system typically flow first to a processor. The *processor* is the part of the system capable of organizing, manipulating, sorting, or performing calculations or other transformations with the data. Most systems also have one or more *storage devices*—places where data can be stored for later use. Floppy disks, hard drives, CD-ROM disks, magnetic tapes, and optical disks are common forms of storage devices. As data are transformed into useable information, the resultant information must be communicated to the appropriate person by means of an *output medium*. Common ways to display output are video displays, printers, and facsimile machines, as well as by transmission to other computers or web pages.

Finally, the entire information technology system is operated by a *control system*—most often software of one form or another. Simple systems in smaller organizations can use off-the-shelf software. Microsoft Windows and DOS are general operating systems that control other more specialized types of software. Microsoft Word and WordPerfect are popular systems for word processing. Lotus 1-2-3 and Excel are popular spreadsheet programs, and dBase and Access are frequently used for database management. Of course, elaborate systems of the type used by large

Figure 22.3

Building Blocks of a Computer-Based Information System

Computer-based information systems generally have five basic components—an input medium, a processor, an output medium, a storage device, and a control system. Non-computer-based systems use parallel components for the same basic purposes.



businesses require a special customized operating system. When organizations start to link computers together into a network, the operating system must be even more complex.

As we noted earlier, information technology systems need not be computerized. Many small organizations still function quite well with a manual system using paper documents, routing slips, paper clips, file folders, file cabinets, and a single personal computer. Increasingly, however, even small businesses are abandoning their manual systems for computerized ones. As hardware prices continue to drop and software becomes more and more powerful, computerized information systems will likely be within the reach of any business that wants to have one.

MANAGEMENT IMPLICATIONS Managers should be familiar with the basic components that comprise an information system and how they relate to one another.

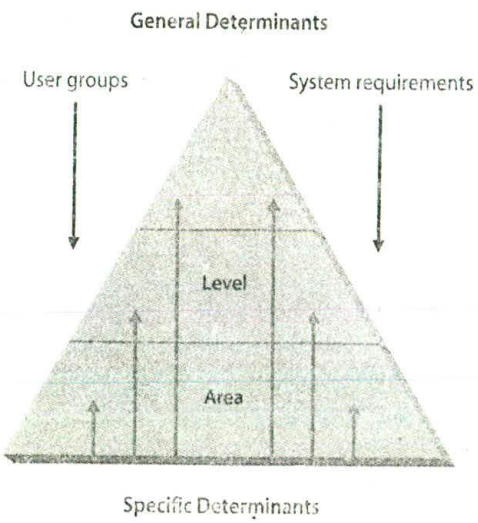
■ Types of Information Systems

In a sense, the phrase *information system* may be a misnomer: it suggests that there is one system when, in fact, a firm's employees will have different interests, job responsibilities, and decision-making requirements. One information system cannot accommodate such a variety of information requirements. Instead, "the information system" is several complex information systems that share information while serving different levels of the organization, different departments, or different operations.

Figure 22.4

Determinants of an Organization's Information-Processing Needs

Information-processing needs are determined by user groups and system requirements and such specific managerial factors as their area and level in the organization.



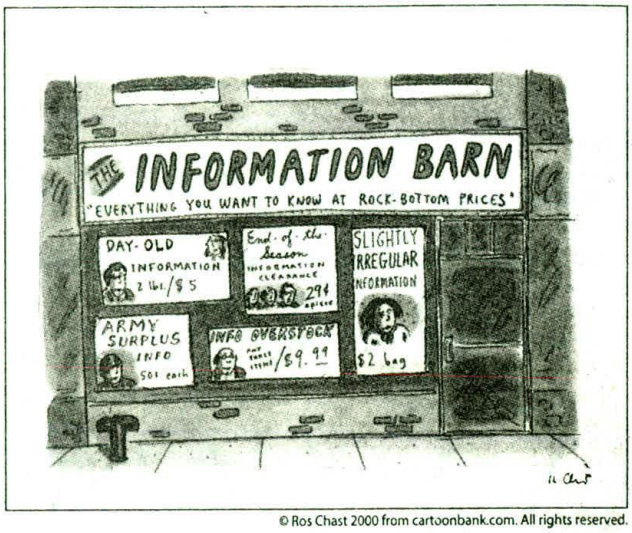
User Groups and System Requirements

To understand the different kinds of information systems that organizations use, it is instructive first to consider user groups and system requirements. This perspective is illustrated in Figure 22.4. In general, there are four user groups, each with different system requirements. Knowledge workers represent a special user category. **Knowledge workers** are specialists, usually professionally trained and certified (engineers, scientists, information technology specialists, psychologists), who rely on information technology to design new products or create new business processes.

Managers at Different Levels Because they work on different kinds of problems, top managers, middle managers, knowledge workers, and first-line managers have different information needs. First-line (or operational) managers, for example, need information to oversee the day-to-day details of their departments or projects. Knowledge workers need special information for conducting

technical projects. Meanwhile, middle managers need summaries and analyses for setting intermediate and long-range goals for the departments or projects under their supervision. Finally, top management analyzes broader trends in the economy, the business environment, and overall company performance for conducting long-range planning for the entire organization.

Consider the various information needs for a flooring manufacturer. Sales managers (first-level managers) supervise salespeople, assign territories to the sales force, and handle customer service and delivery problems. They need current information on the sales and delivery of products: lists of incoming customer orders and daily delivery schedules to customers in their territories. Regional managers (middle managers) set sales quotas for each sales manager, prepare budgets, and plan staffing needs for the upcoming year. They need information on monthly sales by product and region. Knowledge workers developing new flooring materials need information on the chemical properties of adhesives and compression strengths for floor structures. Finally, top managers need both external and internal information. Internally, they use sales data summarized by product, customer type, and geographic region, along with comparisons to previous years. Equally important is external information on consumer behavior patterns, the competition's performance, and economic forecasts.



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Information has become a major component in the work of all managers and the activities of all organizations. Indeed, new and exciting methods and sources for gathering and analyzing information are appearing almost daily. Of course, as shown here in this cartoon, managers must ensure that they are getting the information they truly need and that it is of sufficient quality to meet their needs. Flawed or old information may do more harm than no information at all!

Functional Areas and Business Processes Each business function—marketing, human resources, accounting, operations, finance—has its own information requirements. In addition, many businesses are organized according to various business processes, and these process groups also need special information. Each of these user groups and departments, then, is represented by an information system. When organizations add to these systems the four systems needed by the four levels of users discussed above, the total number of information systems and applications increases significantly. Top-level finance managers, for example, are concerned with long-range planning for capital expenditures on future facilities and equipment and with determining sources of capital funds.

In contrast, a business-process group will include users—both managers and employees—drawn from all organizational levels. The supply chain management group, for instance, may be in the process of trimming back the number of suppliers. The information system supporting this project would contain information ranging across different organization functions and management levels: the group will need information and expert knowledge on marketing, warehousing and distribution, production, communications technology, purchasing, suppliers, and finance. It will also need different perspectives on operational, technical, and managerial issues: determining technical requirements for new suppliers, specifying task responsibilities for participating firms, and determining future financial requirements.

knowledge workers Specialists, usually professionally trained and certified (engineers, scientists, information technology specialists, psychologists), who rely on information technology to design new products or create new business processes

Major Systems by Level

In this section, we discuss different kinds of systems that provide applications at some organizational levels but not at others. For any routine, repetitive, highly structured decision, a specialized application will suffice. System requirements for knowledge workers, however, will probably vary because knowledge workers often face varied and specialized problems. Applications of information systems for middle- or top-level management decisions must also be flexible, although for different reasons. In particular, they will use a broader range of information collected from various sources, both external and internal.

transaction-processing system (TPS) Applications of information processing for basic day-to-day business transactions

Transaction-Processing Systems **Transaction-processing systems (TPS)** are applications of information processing for basic day-to-day business transactions. Taking customer orders from on-line retailers, approval of claims at insurance companies, receiving and confirming reservations by airlines, payroll processing and bill payment at almost every company—all are routine business processes. Typically, the TPS for first-level (operational) activities is well defined, with predetermined data requirements, and follows the same steps to complete all transactions in the system.

Systems for Knowledge Workers and Office Applications Systems for knowledge workers and office applications support the activities of both knowledge workers and employees in clerical positions. They provide assistance for data processing and other office activities, including the creation of communications documents. Like other departments, the information systems (IS) department includes both knowledge workers and data workers.



Many different kinds of information systems exist today. Microsoft is hoping one of its newest, Venus, catches on. Venus is designed for the Chinese market where there are over 20,000 different language characters. The complexity of the Chinese language, meanwhile, makes it difficult to write software for navigating the Internet and communicating with other computers. Venus relies on arrows rather than characters to navigate the Internet; it also works with a television set rather than a PC. Microsoft hopes that Venus will become the standard information system in China, linking together millions of users.

Needless to say, the explosion of new support systems—word processing, document imaging, desktop publishing, computer-aided design, simulation modeling—has increased the productivity of both office and knowledge workers. Desktop publishing combines graphics and word-processing text to produce professional-quality print and web documents. Document-imaging systems can scan paper documents and images, convert them into digital form for storage on disks, retrieve them, and transmit them electronically to workstations throughout the network.

Systems for Operations/Data Workers People who run the company's computer equipment are usually called system operations workers. They make sure that the right programs are run in the correct sequence and they monitor equipment to ensure that it is operating properly. Many organizations also have employees for entering data into the system for processing.

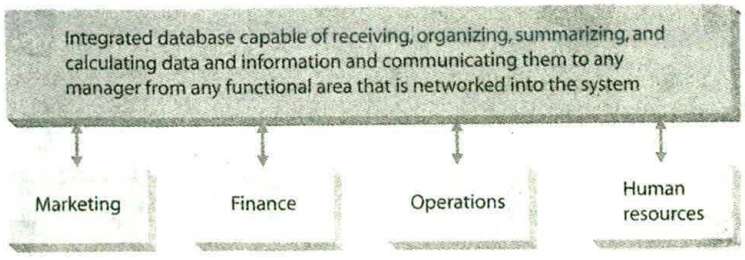
Management Information Systems **Management information systems (MIS)** support an organization's managers by providing daily reports, schedules, plans, and budgets. A simple MIS is shown in Figure 22.5. Each manager's information activities vary according to his or her functional area (say, accounting or marketing) and management level. Whereas middle-level managers focus mostly on internal activities and information, higher-level managers are engaged in both internal and external activities. Middle managers, the largest MIS user group, need networked information to plan such upcoming activities as personnel training, materials movement, and cash flows. They also need to know the current status of the jobs and projects carried out in their departments: What stage is it at now? When will it be finished? Is there an opening so we can start the next job? Many of a firm's management information systems—cash flow, sales, production scheduling, shipping—are indispensable for helping managers find answers to such questions.

management information system (MIS) Supports an organization's managers by providing daily reports, schedules, plans, and budgets

Figure 22.5

A Basic Management Information System

A basic management information system relies on an integrated database. Managers in various functional areas can access the database and get information they need to make decisions. For example, operations managers can access the system to determine sales forecasts by marketing managers, and financial managers can check human resource files to identify possible candidates for promotions into the finance department.



decision support system (DSS) An interactive system that locates and presents information needed to support the decision-making process

Decision Support Systems Middle-and top-level managers receive decision-making assistance from a **decision support system (DSS)**: an interactive system that locates and presents information needed to support the decision-making process. Whereas some DSSs are devoted to specific problems, others serve more general purposes, allowing managers to analyze different types of problems. Thus, a firm that often faces decisions on plant capacity, for example, may have a capacity DSS. The manager inputs data on anticipated levels of sales, working capital, and customer-delivery requirements. Then the DSS's built-in transaction processors manipulate the data and make recommendations on the best levels of plant capacity for each future time period. In contrast, a general-purpose system, such as a marketing DSS, might respond to various marketing-related problems. It may be programmed to handle what-if questions such as, "When is the best time to introduce a new product if my main competitor introduces one in three months, our new product has an eighteen-month expected life, demand is seasonal with a peak in the autumn, and my goal is to gain the largest possible market share?" The DSS can assist in decisions for which predetermined solutions are unknown by using sophisticated modeling tools and data analysis.

executive support system (ESS) A quick-reference, easy-access application of information systems specially designed for instant access by upper-level managers

Executive Support Systems An **executive support system (ESS)** is a quick-reference, easy-access application of information systems specially designed for instant access by upper-level managers. ESSs are designed to assist with executive-level decisions and problems, rangingfrom "What lines of business should we be in five years from now?" to "Based on forecasted developments in electronic technologies, to what extent should our firm be globalized in five years? In ten years?" The ESS also uses a wide range of both internal information and external sources, such as industry reports, global economic forecasts, and reports on competitors' capabilities. Because senior-level managers do not usually possess advanced computer skills, they prefer systems that are easily accessible and adaptable. Accordingly, ESSs are not designed to address only specific, predetermined problems. Instead, they allow the user some flexibility in attacking different problem situations. They are easily accessible by means of simple keyboard strokes or even voice commands.

artificial intelligence (AI) The construction of computer systems, both hardware and software, to imitate human behavior—in other words, systems that perform physical tasks, use thought processes, and learn

Artificial Intelligence and Expert Systems **Artificial intelligence (AI)** can be defined as the construction of computer systems, both hardware and software, to imitate human behavior—in other words, systems that perform physical tasks, use thought processes, and learn. In developing AI systems, knowledge workers—business specialists, modelers, information-technology experts—try to design computer-based systems capable of reasoning so that computers, instead of people, can perform certain business activities.

One example is a credit-evaluation system that decides which loan applicants are creditworthy and which are risky and then composes acceptance and rejection letters accordingly. Another example is an applicant-selection system that receives interviewees' job applications, screens them, and then decides which applicants are the best matches for each of several job openings. AI systems are also designed with sensory capabilities, such as lasers that "see," "hear," and "feel." In addition,

as machines become more sophisticated in processing natural languages, humans can give instructions and ask questions merely by speaking to a computer.

A special form of AI program, the expert system, is designed to imitate the thought processes of human experts in a particular field. Expert systems incorporate the rules that an expert applies to specific types of problems, such as the judgments that a physician makes for diagnosing illnesses. In effect, expert systems supply everyday users with "instant expertise." General Electric's Socrates Quick Quote, for example, imitates the decisions of a real estate expert and then places a package of recommendations about real estate transactions at the fingertips of real estate dealers on GE's private computer network. A system called MOCA (Maintenance Operations Center Advisor) schedules routine maintenance for American Airlines' entire fleet by imitating the thought processes of a maintenance manager.

The Internet

While not everyone would automatically think of it this way, the Internet is also an information system, and one that is becoming more and more important to business every day. The **Internet** (or the "**Net**," for short)—the largest public data communications network—is a gigantic network of networks serving millions of computers and offers information on business, science, and government and provides communication flows among more than 170,000 separate networks around the world. Originally commissioned by the Pentagon as a communication tool for use during war, the Internet now allows personal computers in almost any location to be linked together. The Net has gained in popularity because it is an efficient tool for information retrieval and makes available an immense store of academic, technical, and business information.

Internet (Net) A gigantic network of networks serving millions of computers and offering information on business, science, and government and providing communication flows among more than 170,000 separate networks around the world

Because it can transmit information fast and at low cost—lower than long-distance phone service, postal delivery, and overnight delivery—the Net has also become the most important e-mail system in the world. For thousands of businesses, therefore, the Net has joined—and is even replacing—the telephone, fax machine, and express mail as a standard means of communication. Although individuals cannot connect directly to the Internet, they can subscribe, for small monthly usage fees, to the Net via an **Internet service provider** (**ISP**) such as Prodigy, America Online, or Earthlink. An ISP is a commercial firm that maintains a permanent connection to the Net and sells temporary connections to subscribers.[7]

Internet service provider (ISP) A commercial firm that maintains a permanent connection to the Net and sells temporary connections to subscribers

The Internet's popularity continues to grow for both business and personal applications. In 2000, more than 302 million Net users were active on links connecting more than 180 countries. In the United States alone, more than fifty million users were on the Net every day. Its power to change the way business is conducted has been amply demonstrated in both large and small firms. Digital Equipment Corp. (DEC), for instance, is a heavy Internet user. With more than thirty-one thousand computers connected to the Net, DEC's monthly e-mail volume has passed the one-million-message mark. DEC also linked its Alpha AXP high-speed business computer to the Internet so that potential buyers and software developers could spend time using and evaluating it. Almost instantly, 2,500 computer users in twenty-seven countries used the Net to explore the Alpha AXP.

The Net has also benefited small companies, especially as a means of expanding market research and improving customer service and as a source of information. In San Leandro, California, for example, TriNet Employer Group subscribes to Ernst & Young's on-line consulting program, called Ernie. For $3,500 a year, TriNet controller Lyle DeWitt sends questions from his computer and gets an answer from an Ernst & Young expert within forty-eight hours. Aiming for small clients who cannot afford big-name consulting advice, Ernie answers questions on health insurance, benefit plans, immigration issues, and payroll taxes.

World Wide Web (WWW) A system with universally accepted standards for storing, retrieving, formatting, and displaying information

The World Wide Web Thanks to the **World Wide Web** (**WWW**, or simply "the Web"), the Internet is easy to use and allows users around the world to communicate electronically with little effort. The World Wide Web is a system with universally accepted standards for storing, retrieving, formatting, and displaying information.[8] It provides the "common language" that enables us to "surf" the Net and makes the Internet available to a general audience, rather than only to technical users such as computer programmers. To access a web site, for example, the user must specify the uniform resource locator (URL) that points to the resource's unique address on the web.

Servers and Browsers Each web site opens with a home page—a screen display that welcomes the visitor with a greeting that may include graphics, sound, and visual enhancements introducing the user to the site. Additional pages give details on the sponsor's products and explain how to contact help in using the site. Often, they furnish URLs for related web sites that the user can link to simply by pointing and clicking. The person who is responsible for maintaining an organization's web site is usually called a *webmaster*. Large web sites use dedicated workstations—large computers known as *web servers*—that are customized for managing, maintaining, and supporting web sites.

web browser The software that enables the user to access information on the Web

With hundreds of thousands of new web pages appearing each day, cyberspace is now providing billions of pages of publicly accessible information. Sorting through this maze would be frustrating and inefficient without access to a **web browser**—the software that enables the user to access information on the web. A browser runs on the user's PC and supports the graphics and linking capabilities needed to navigate the Web. Netscape Navigator has enjoyed as much as an 80 percent market share, although its dominance is now being challenged by other browsers, including its own Netscape Communicator and Microsoft's Internet Explorer.

Directories and Search Engines The web browser offers additional tools—web site directories and search engines—for navigating on the Web. Among the most successful cyberspace enterprises are companies such as Yahoo!, which maintains free-to-use directories of web content. When Yahoo! is notified about new web sites, it classifies them in its directory. The user enters one or two keywords (say, "compact disk") and the directory responds by retrieving from the directory a list of web sites with titles containing those words.

In contrast to a directory, a search engine will search millions of web pages without preclassifying them into a directory. It searches for web pages that contain the same words as the user's search terms. Then it displays addresses for those that

come closest to matching, then the next closest to matching, and so on. A search engine, such as AltaVista, Radar, or Lycos, may respond to more than ten million inquiries per day. Thus, it shouldn't be a surprise that both directories and search engines are packed with paid ads.[9] At the beginning of 2000, Yahoo! was the leader in portal sites—sites used by Net surfers as primary home pages—although Lycos was closing fast in the race for most users.

Intranets The success of the Internet has led some companies to extend the Net's technology internally, for browsing internal web sites containing information throughout the company. These private networks, or **intranets**, are accessible only to employees via entry through electronic firewalls. Firewalls (discussed later) are used to limit access to an intranet. At Compaq Computer, the intranet allows employees to shuffle their retirement savings among various investment funds. Ford's intranet connects 120,000 workstations in Asia, Europe, and the United States to thousands of Ford web sites containing private information on Ford activities in production, engineering, distribution, and marketing. Sharing such information has helped reduce the lead-time for getting car models into production from thirty-six to twenty-four months. Ford's latest project in improving customer service through internal information sharing is called manufacturing on demand. For example, the Mustang that required fifty days' delivery time in 1996 is available in less than two weeks. The savings to Ford, of course, will be billions of dollars in inventory and fixed costs.[10]

intranet A communication network similar to the Internet but operating within the boundaries of a single organization

Extranets Sometimes firms allow outsiders access to their intranets. These so-called **extranets** allow selectd outsiders limited access to an organization's internal information system, or intranet. The most common application allows buyers to enter the seller's system to see which products are available for sale and delivery, thus providing product-availability information quickly to outside buyers. Industrial suppliers, too, are often linked into their customers' intranets so that they can see planned production schedules and ready supplies as needed for customers' upcoming operations.

extranet A communication network that allows selected outsiders limited access to an organization's internal information system, or intranet

MANAGEMENT IMPLICATIONS Managers must always understand the importance of matching information systems with the needs and requirements of their users. To do so, of course, they need to have a fundamental understanding of both user groups and system requirements as well as the different kinds of information systems that can be used. And all managers, of course, need to understand the Internet and its role in information and information technology.

■ *Managing Information Systems*

At this point, the value and importance of information systems should be apparent. There are still important questions to be answered, however. How are such systems developed, and how are they used on a day-to-day basis? This section provides insights into these issues and related areas.

Creating Information Systems

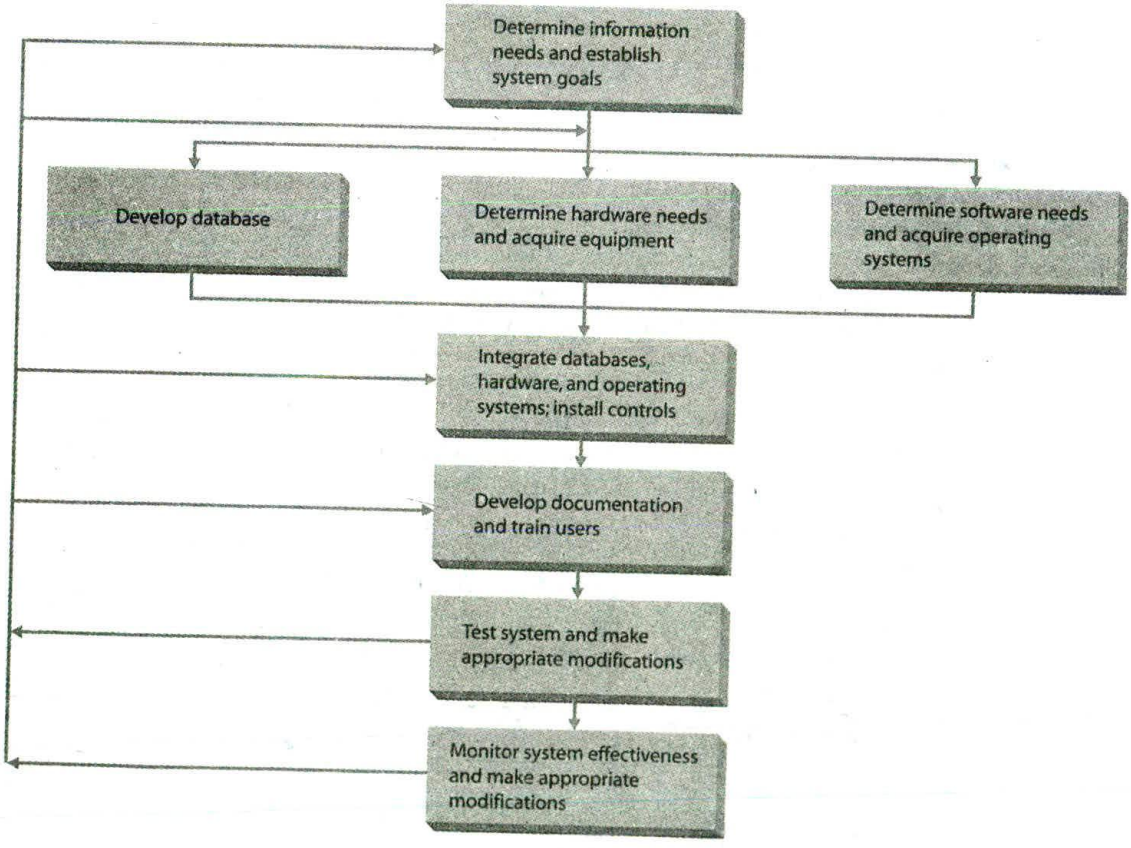
The basic steps involved in creating an information system are outlined in Figure 22.6. The first step is to determine the information needs of the organization and to establish goals for what is to be achieved with the proposed system. It is absolutely imperative that the project have full support and an appropriate financial commitment from top management if it is to be successful. Once the decision has been made to develop and install an information system, a task force is usually assembled to oversee everything. As discussed earlier, target users must be well represented on such a task force.

Next, three tasks can be done simultaneously. One task is to assemble a database. Most organizations already possess the information they need for an information

Figure 22.6

Establishing an Information System

Establishing an information system is a complex procedure. Managers must realize, however, that the organization's information management needs will change over time, and some steps of the process may have to be repeated in the future.



system, but it is often not in the correct form. The Pentagon has spent large sums of money to transform all its paper records into computer records. Many other branches of the government are also working hard to computerize their data.[11]

While the database is being assembled, the organization must also determine its hardware needs and acquire the appropriate equipment. Some systems rely solely on one large mainframe computer; others are increasingly using personal computers. Equipment is usually obtained from large manufacturers like IBM, Compaq, Sun, and Dell. Finally, software requirements must also be determined and an appropriate operating system obtained. Again, off-the-shelf packages will sometimes work, although most companies find it necessary to do some customization to suit their needs.[12]

The actual information system is created by integrating the databases, the hardware, and the software. Obviously, the mechanics of doing this task are beyond the scope of this discussion. The company usually has to rely on the expertise of outside consulting firms along with the vendors who provided the other parts of the system to put it all together. During this phase, the equipment is installed, cables are strung between units, the data are entered into the system, the operating system is installed and tested, and so forth. System controls are also installed at the same time. A control is simply a characteristic of the system that limits certain forms of access or limits what a person can do with the system. For example, top managers may want to limit access to certain sensitive data to a few key people. These people may be given private codes that must be entered before the data is made available. It is important to make sure that data cannot be accidentally erased by someone who happens to press the wrong key.

The next step is to develop documentation of how the system works and train people to use it. Documentation refers to manuals, computerized help programs, diagrams, and instruction sheets. Essentially, it tells people how to use the system for different purposes. Beyond pure documentation, however, training sessions are also common. Such sessions allow people to practice using the system under the watchful eye of experts.

The system must then be tested and appropriate modifications made. Regardless of how well planned an information system is, there will almost certainly be glitches. For example, the system may be unable to generate a report that needs to be made available to certain managers. Or the report may not be in the appropriate format. Or certain people may be unable to access data that they need and thus obtain other information from the system. In most cases, the consultants or internal group that installed the system will be able to make such modifications as the need arises.

The organization must recognize that information management needs will change over time. Even though the glitches are straightened out and the information system is put into normal operation, modifications may still be needed in the future. For example, after Black & Decker acquired General Electric's small-appliance business, it had to overhaul its own information system to accommodate all the new information associated with its new business. Information management is a continuous process. Even if an effective information system can be created and put into use, there is still a good chance that it will need to be modified occasionally to fit changing circumstances.

Integrating Information Systems

In very large and complex organizations, information systems must also be integrated. This integration may involve links between different information systems within the same organization or between different organizations altogether. Within an organization, for example, it is probably necessary for the marketing system and the operations system to be able to communicate with one another.

Linking systems together is not as easy. For example, PepsiCo recently acquired Quaker Oats. In all likelihood, each firm had its own complex and integrated information network. But since each firm's network may have relied on different technologies, hardware, and operating systems, integrating the two firms has been a costly and complex undertaking. Similarly, suppose a firm installs one system in one of its divisions using Dell equipment and Microsoft software, and then installs a different system in another division using Hewlett-Packard equipment and Lotus software. If and when the firm decides to tie its two distinct systems together, it may face considerable difficulties, like PepsiCo and Quaker.

There are two ways of overcoming this problem. One is to develop everything at once. Unfortunately, this alternative is expensive, and sometimes managers simply can't anticipate today exactly what their needs will be tomorrow. The other method is to adopt a standard type of system at the beginning so that subsequent additions fit properly.[13] Even then, however, breakthroughs in information system technology may still make it necessary to change approaches in midstream.

Using Information Systems

The real test of the value of an information system is how it can be used. Ideally, an information system should be simple to use and nontechnical—that is, one should not have to be a computer expert to use the system. In theory, a manager should be able to access a modern information system by turning on a computer and pressing certain keys in response to menu prompts. The manager should also be able to enter appropriate new data or request that certain kinds of information be provided. The requested information might first be displayed on a computer screen or monitor. After the manager is satisfied, the information can then be printed on paper with a standard printer, or the manager can store the information back in the system for possible future use or for use by others.

One implication relates to the span of management and the number of levels of an organization. Innovations in information technology enable a manager to stay in touch with an increasingly large number of managers and subordinates. T. J. Rodgers, CEO of Cypress Semiconductor Corp., uses the firm's information system to check on the progress of each of his employees every week. Using this and related approaches, spans of management are likely to widen and organizational levels decrease. And some organizations are using their information-processing capabilities to network with other companies. Pacific Intermountain Express, a large Western trucking company, gives customers access to its own computer network so they can check the status of their shipments.

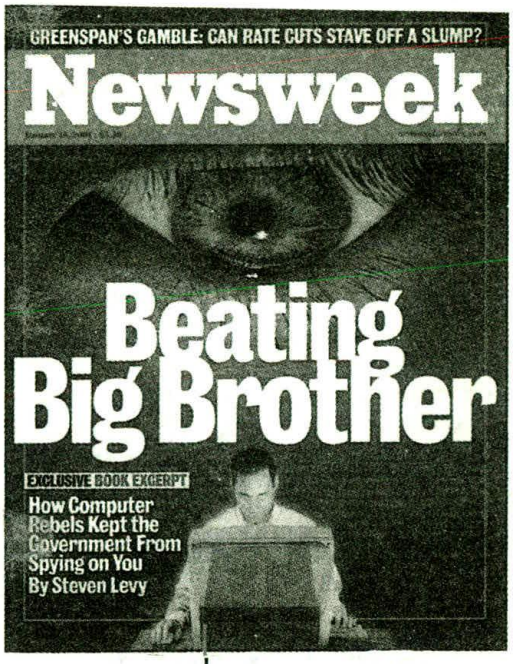
The Travelers Corporation has made effective use of its information system by hiring a team of trained nurses to review health-insurance claims. The nurses tap

into the company's regular information system and analyze the medical diagnoses provided with each claim. They can use this information to determine whether a second opinion is warranted before a particular surgical procedure is approved. They enter their decision directly into the system. When the claim form is printed, it contains a provision that spells out whether the claimant must seek a second opinion before proceeding with a particular treatment.

Managing Information Security

An increasingly common concern for businesses today is security. Security measures for protection against intrusion are a constant challenge. To gain entry into most systems, users have protected passwords that guard against unauthorized access, but many firms rely on additional protective software for safeguards. To protect against intrusions by unauthorized outsiders, companies use security devices, called electronic firewalls, in their systems. **Firewalls** are software and hardware systems that allow employees access to both the Internet and the company's internal computer network while barring entry by outsiders.

Security for electronic communications is an additional concern. Electronic transmissions can be intercepted, altered, and read by intruders. To prevent unauthorized access, many firms rely on encryption: use of a secret numerical code to scramble the characters in the message so the message is not understandable during transmission. Only personnel with the deciphering codes can read them. Protection for preserving data files and databases is not foolproof and typically involves making backup copies to be stored outside the computer system, usually in a safe. Thus, damaged system files can be replaced by backup.



Information security is a major issue in business today. As illustrated by this recent magazine cover, individuals and businesses alike are concerned with protecting their information, maintaining confidentiality, and keeping unauthorized users from having access to their information systems.

Finally, the most important security factor is the people in the system. At most firms, personnel are trained in the responsibilities of computer use and warned of the penalties for violating system security. For example, each time the computer boots up, a notice displays the warning that software and data are protected and spells out penalties for unauthorized use. *Today's Management Issues* provides some additional insights into the nature of information security.

firewalls Software and hardware systems that allow employees access to both the Internet and the company's internal computer network while barring entry by outsiders

Understanding Information System Limitations

It is also necessary to recognize the limits of information systems. Several are listed in Table 22.1. First of all, as already noted, information systems are expensive and difficult to develop. Thus, organizations may try to cut too many corners or install a system in such a piecemeal fashion that its effectiveness suffers.

Information systems simply are not suitable for some tasks or problems. Complex problems requiring human judgment must still be addressed by humans. Information systems are often a useful tool for managers, but they can seldom

TODAY'S MANAGEMENT ISSUES

Sniffing Out Competitive Data

Competitive intelligence is incorporated into the decision-making processes of many companies. Motorola, Apple Computer, and Compaq use it. But where does legitimate competitive intelligence end and questionable corporate spying begin? Employees and consultants have engaged in a wide range of tactics to collect competitive data, from swiping documents out of rivals' dumpsters, to looking up public filings of rivals' patents, to analyzing on-line information about competitors. One study estimated that stolen information cost large U.S. corporations $45 billion in 1999. Although the stakes are high, experts admit that the line separating ethical from unethical tactics is not always clear.

Consider what happened when software giant Oracle Corporation hired an intelligence firm to investigate groups that Oracle suspected were closely tied to Microsoft and its defense against federal antitrust charges. After the *Wall Street Journal* reported that the intelligence firm had offered to buy trash gathered from one of the group's wastebaskets, Oracle issued a statement saying that it had hired the firm but had been repeatedly assured that the activities used were completely legal. Industry specialists disagree on how often intelligence gatherers use questionable techniques, in part because few organizations that fall victim to such tactics are willing to talk publicly about the problem.

With increased globalization, companies are battling more rivals in more countries. The FBI has begun tracking the activities of eight countries it claims are trying to uncover trade secrets to benefit firms based in those countries. Meanwhile, European officials claim that the United States is using global surveillance of electronic communications to funnel data to U.S. firms—a charge U.S. officials deny.

When properly gathered and analyzed, competitive intelligence can be extremely valuable. For example, Motorola maintains intelligence offices around the world to monitor competitors and identify clues to new technologies and organizational changes. Its intelligence experts are invited to high-level business strategy meetings so they can provide input to support executive decision making. Over the years, Motorola has used such data to make decisions about strategic alliances and about reengineering internal operations. For Motorola and for many other companies, legitimate competitive intelligence has become a vital tool.

In most cases, people wouldn't have a problem distinguishing what is illegal or unethical conduct versus obtaining information from public sources.

— Peter Toren, a New York attorney*

References: Neil King, Jr., and Jess Bravin, "Call It Mission Impossible Inc.—Corporate Spying Firms Thrive," *Wall Street Journal*, July 3, 2000, pp. B1, B4 (*quote on p. B4); "Oracle Admits Hiring Investigators Who Sought Trash of Pro-Microsoft Groups," *Tech Law Journal*, June 28, 2000, http://techlawjournal.com/election/20000628.htm (October 5, 2000).

replace managers. Managers may also come to rely too much on information systems. As a consequence, the manager may lose touch with the real-world problems he or she needs to be concerned about. Similarly, access to unlimited information can result in overload, rendering managers less effective than they would be if they had reduced access to information![14]

Information may not be as accurate, timely, complete, or relevant as it appears. People often think that because a computer performed the calculations, the answer must be correct—especially if the answer is calculated to several decimal places. But if the initial information was flawed, all resultant computations using it are likely to be flawed as well. And as discussed in the *World of Management*, information systems linking people who speak different languages can also have limited effectiveness.

Table 22.1

Limitations of Information Systems

Although information systems play a vital role in modern organizations, they are not without their limitations. In particular, information systems have six basic limitations. For example, one major limitation of installing an information system is cost. For a large company, an information system might cost several million dollars.

1. Information systems are expensive and difficult to develop and implement.
2. Information systems are not suitable for all tasks or problems.
3. Managers sometimes rely on information systems too much.
4. Information provided to managers may not be as accurate, timely, complete, or relevant as it first appears.
5. Managers may have unrealistic expectations of what the information system can do.
6. The information system may be subject to sabotage, computer viruses, or downtime.

WORLD OF MANAGEMENT

Too Much Lost in the Translation

Can translation technology help businesses bring their World Wide Web pages to the world? That's what Vladimir Bogdanov, president of Allmusic.com, needed to do when he purchased software to translate his site's text from English into six languages for a global audience interested in music and musicians. Unfortunately, the translations were far from polished; Bogdanov says that international readers actually laughed at the quirky wording. He quickly arranged for traditional translation services, choosing the human touch over the electronic approach.

Numerous web sites offer free, instant translation services for those who want to communicate messages in other languages. At the AltaVista Babel Fish site (http://world.altavista.com), for example, users simply choose the languages being translated to and from, then type in the words, phrases, or sentences to be translated. At a click of the mouse, the site prepares a literal translation. Because translations are basically word for word, single words or phrases often translate more smoothly than sentences.

Even web sites such as Multicity.com (http://www.multicity.com), which specializes in translating conversations to support chat and instant messaging functions in several European languages, have difficulty with the meaning of idioms and slang terms. As a result, chatters fare better when they avoid slang and follow standard grammatical conventions instead. Users seeking to translate just one or two words can find the foreign-language equivalents on Allwords.com and, at a click, hear the correct pronunciations.

People who communicate on-line in languages other than English sometimes face the problem of writing words in a different alphabet or character set, such as Cyrillic or Hindi. WordWalla.com (http://www.WordWalla.com) comes to the rescue with an on-line keyboard that shows the correct characters for the chosen language. Of course, users must be familiar with the language to operate this system.

The machine translation did such a crude job and put words in such odd places.

—Vladimir Bogdanov, president of Allmusic.com*

Researchers are working on artificial intelligence systems capable of identifying and translating the subtle nuances of more sophisticated messages without human intervention. For now, however, many companies are turning to professional translators rather than risk simplistic or laughable electronic translations.

Reference: Silvia Sansoni, "Tongue-Tied," *Forbes,* September 11, 2000, p. 80 (quote on p. 80).

Managers sometimes have unrealistic expectations about what information systems can accomplish. They may believe that the first stage of implementation will result in a full-blown communication network that a child could use. When the manager comes to see the flaws and limits of the system, she or he may become disappointed and, as a result, not use the system effectively. Finally, the information system may be subject to sabotage, computer viruses, or downtime. Disgruntled employees have been known to enter false data deliberately. And a company that relies too much on a computerized information system may find itself totally paralyzed in the event of a simple power outage or a crippling computer virus.

MANAGEMENT IMPLICATIONS Managers should know the processes involved in establishing an information system. They should know how to integrate and use information systems as they are being created and after they have been implemented. Security issues are a growing concern. Knowing the limitations of information systems is quite important.

■ The Impact of Information Systems on Organizations

Information systems are clearly an important part of most modern organizations. Their effects are felt in various ways. Indeed, the rapid growth of information technologies has changed the very structure of business organizations.

Leaner Organizations

Information networks are leading to leaner companies with fewer employees and simpler structures. Because today's networked firm can maintain information links between both employees and customers, more work can be accomplished with fewer people. Bank customers, for example, can dial into a twenty-four-hour information system and find out their current balances from a digital voice. In the industrial sector, assembly workers at an IBM plant used to receive instructions from supervisors or special staff. Now instructions are delivered electronically to their workstations.

Widespread reductions in middle-management positions and the elimination of several layers in organizational structure are possible because information networks now provide direct communications between the top managers and workers at lower levels. The operating managers who formerly communicated company policies, procedures, or work instructions to lower-level employees are being replaced by electronic information networks.

More Flexible Operations

Electronic networks allow businesses to offer customers greater variety and faster delivery cycles. Recovery after heart surgery, for example, is expedited by custom-tailored rehabilitation programs designed with integrated information systems.

Each personalized program integrates the patient's history with information from physicians and rehabilitation specialists and then matches the patient with an electronically monitored exercise regimen. Products such as cellular phones, PCs, and audio systems can be custom-ordered, too, with the customer's choice of features and options and next-day delivery. The principle is called mass-customization: although companies produce in large volumes, each unit features the unique variations and options that the customer prefers.

Flexible production and fast delivery depend on an integrated network to coordinate all the transactions, activities, and process flows necessary to make quick adjustments in the production process. The ability to organize and store massive volumes of information is crucial, as are the electronic links among customers, manufacturers, materials suppliers, and shippers.

Increased Collaboration

Collaboration, not only among internal units but with outside firms as well, is on the rise because networked systems make it cheaper and easier to contact everyone, whether they are other employees or outside organizations.[15] Aided by intranets, more companies are learning that complex problems can be solved better by means of collaboration, either in formal teams or through spontaneous interaction. In the new networked organization, decisions that were once the domain of individuals are now shared as both people and departments have become more interdependent. The design of new products, for example, was once an engineering responsibility. Now, it can be a shared responsibility because so much information is accessible for evaluation from various perspectives: marketing, finance, production, engineering, and purchasing can share their different stores of information and determine the best overall design.

Naturally, networked systems are also helpful in *business-to-business* relationships. Increasingly, organizational buyers and suppliers are becoming so closely networked that they sometimes seem to be working for one organization. In the financial services industry, for example, institutional investors are networked with investment bankers, thus allowing efficient buying and selling of initial stock offerings. In manufacturing, Ford's parts suppliers are linked to Ford's extranet. Because they know Ford's current production schedule and upcoming requirements, they can move materials into Ford plants more quickly and more accurately.

A step toward even greater collaboration between companies—the so-called virtual company—has become possible through networking. As we saw in Chapter 12, a virtual company can be a temporary team assembled by a single organization. But a virtual company can also be created when several firms join forces. Each contributes different skills and resources that, collectively, result in a competitive business that would not be feasible for any of the collaborators acting alone. A company with marketing and promotional skills, for example, may team up with firms that are experts in warehousing and distribution, engineering, and production. Networking allows collaborators to exchange ideas, plan daily activities, share customer information, and otherwise coordinate their efforts, even if their respective facilities are far apart.



Advances in information systems are affecting organizations today in a wide variety of ways. One area of change involves more flexible work sites. Take Carla Patterson, for instance. Ms. Patterson is a field representative for Nebraska's Department of Economic Development. She spends about half of her work time in the office, but spends the other half working at home. But because she is so extensively networked into the agency's information systems, most of her colleagues don't know when Ms. Patterson is at home and when she is in her office.

More Flexible Work Sites

Geographic separation of the workplace from company headquarters is more common than ever because of networked organizations. Employees no longer work only at the office or the factory, nor are all of a company's operations performed at one location. The sales manager for an advertising agency may visit the company office in New York once every two weeks, preferring instead to work over the firm's electronic network from her home office in Florida. A medical researcher for the Cleveland Clinic may work at a home office networked into the clinic's system.[16]

A company's activities may also be geographically scattered but highly coordinated thanks to a networked system. Many e-businesses, for example, conduct no activities at one centralized location. When you order products from an Internet storefront—say, a chair, a sofa, a table, and two lamps—the chair may come from a cooperating warehouse in Philadelphia and the lamps from a manufacturer in California, while the sofa and table may be shipped directly from two manufacturers in North Carolina. All these activities are launched instantaneously by the customer's order and coordinated through the network, just as if all were being processed at one location.[17]

Improved Management Processes

Networked systems have changed the very nature of the management process. The activities, methods, and procedures of today's manager differ significantly from those that were common just a few years ago. Once, for example, upper-level managers did not concern themselves with all the detailed information that filtered upward in the workplace because it was expensive to gather, slow in coming, and quickly became out of date. Workplace management was delegated to middle and first-line managers.

With networked systems, however, instantaneous information is accessible in a convenient, useable format. Consequently, more and more upper managers use it routinely for planning, leading, directing, and controlling operations. Today, a top manager can find out the current status of any customer order, inspect productivity statistics for each workstation, and analyze the delivery performance of any driver and vehicle. More important, managers can better coordinate companywide performance. They can identify departments that are working well together and those that are creating bottlenecks. Hershey's networked system, for example, includes SAP—an enterprise-resource-planning model—that identifies the current status of any order and traces its progress from order entry through customer de-

livery receipt of payment. Progress and delays at intermediate stages—materials ordering, inventory availability, production scheduling, packaging, warehousing, distribution—can be checked continuously to determine which operations should be coordinated more closely with others to improve overall performance.

Changed Employee Behaviors

Information systems also directly affect the behaviors of people in organizations. Some of these effects are positive; others can be negative. On the plus side, information systems usually improve individual efficiency. Some people also enjoy their work more because they have fun using the new technology. As a result of computerized bulletin boards and e-mail, groups can form across organizational boundaries.

On the negative side, information systems can lead to isolation because people have everything they need to do their jobs without interacting with others. Managers can work at home easily, with the possible side effects of making them unavailable to others who need them or removing them from key parts of the social system. Computerized working arrangements also tend to be much less personal than other methods. For example, a computer-transmitted "pat on the back" will likely mean less than a real one. Researchers are just beginning to determine how individual behaviors and attitudes are affected by information systems.[18]

MANAGEMENT IMPLICATIONS Managers should be aware of several different ways in which information technology can affect—and is affecting—their organizations and how they work. They should also be aware of the fact that these effects can be positive or negative.

Summary of Key Points

Information is a vital part of every manager's Job For information to be useful, it must be accurate, timely, complete, and relevant. Information technology is best conceived of as part of the control process. Information technology systems contain five basic components: an input medium, a processor, storage, a control system, and an output medium. While the final form will vary, both manual and computerized information systems have these components.

An organization's information technology needs are determined by several factors, most notably user groups and system requirements. There are several basic kinds of information systems, including transaction-processing systems, basic management information systems, decision support systems, and executive information systems. Each provides certain types of information and is most valuable for specific types of managers. Each should also be matched to the needs of user groups.

Managing information systems involves five basic elements. The first is deciding how to create information systems. Of course, this step actually involves a wide array of specific activities and steps. The systems must then be integrated. Managers must then be able to use them. Information security is also an important consideration in

managing information systems. Finally, managers should be aware of the limitations of information systems.

Information systems affect organizations in various ways. Major influences include leaner organizations, more flexible operations, increased collaboration, more flexible work sites, improved management processes, and changed employee behaviors.

Discussion Questions

Questions for Review

1. What are the characteristics of useful information? How can information management aid in organizational control?
2. What are the building blocks of information systems? How are they related to one another?
3. What is a management information system? How can such a system be used to benefit an organization?
4. What is an expert system? Do such systems have any significant potential for use by business organizations? Why or why not?

Questions for Analysis

5. In what ways is a management information system like an inventory control system or a production control system? In what ways is it different?
6. It has been said that the information revolution now occurring is like the industrial revolution in terms of the magnitude of its impact on organizations and society. What leads to such a view? Why might that view be an overstatement?
7. Is it possible for "information experts" in an organization to become too powerful? If so, how might the situation be prevented? If not, why not?

Questions for Application

8. Interview a local business manager about the use of information in his or her organization. How is information managed? Is a computer system used? How well is the information system integrated with other aspects of organizational control?
9. Your college or university library deals in information. What kind of information system is used? Is it computerized? How might the information system be redesigned to be of more value to you?
10. Go to the library and see if you can locate a reference on the use of an expert system in a business firm. If you can, share it with the class. Why might this assignment be difficult?

BUILDING EFFECTIVE *communication* SKILLS

Exercise Overview

Communication skills refer to the manager's abilities both to convey ideas and information effectively to others and to receive ideas and information from others effectively. This exercise will help you see how communication skills relate to information technology.

Exercise Background

Newer forms of information technology like e-mail and cellular telephones are changing the ways that managers communicate with one another. In some ways, these forms of communication are similar to earlier forms, but in other ways they are fundamentally different.

Go to the library and research the business literature from the 1960s. Look specifically for how-to articles dealing with telephone etiquette and letter-writing fundamentals. Find at least one list of dos and don'ts about each form of communication.

Exercise Task

With the background information above as context, do the following:

1. Identify suggestions from each list that seem to be just as applicable to modern forms of information technology.
2. Identify suggestions from each list that do not seem to be applicable to modern forms of information technology.
3. Compile your own how-to list for using modern information technology.
4. Add to your list suggestions for using other forms of information technology, such as facsimiles and voice-mail.

BUILDING EFFECTIVE *interpersonal* SKILLS

Exercise Overview

Interpersonal skills refer to the ability to communicate with, understand, and motivate individuals and groups. Information technology has obvious links with interpersonal skills.

Exercise Background

Your company is at the forefront of modern information technology. All of your managers have voice-mail and e-mail, all are networked, and many have started working at home. They point out that they are more productive at home and don't really need to come into the office every day to get their work done. And indeed, productivity is booming.

But a situation recently arose and has caused you some concern. Specifically, you have two employees who have each worked for you for almost six months and who communicate with one another on a regular basis—but have not met face to face. Because you have always thought of your company as a warm and friendly place to work, you are alarmed that you may be losing these characteristics.

Exercise Task

With the background information above as context, do the following:

1. Decide whether or not face-to-face communication is important today.
2. If it is, develop a plan for enhancing interpersonal relations among your employees without losing the competitive advantage you have gained from information technology.
3. If it is not, develop a rationale that you might use to placate or comfort an employee who complains about the lack of interpersonal relations.

BUILDING EFFECTIVE *time-management* SKILLS

Exercise Overview

Time-management skills refer to the manager's ability to prioritize work, to work efficiently, and to delegate appropriately. This exercise focuses on how time management and information technology relate to one another.

Exercise Background

One of the biggest implied advantages of modern information technology today is time management—modern technology is supposed to make us more productive and more efficient and make it easier to communicate with one another. At the same time, most people acknowledge that information technology can also get out of hand.

Listed below are five forms of information technology:

1. Cellular telephone
2. E-mail
3. Voice-mail
4. Internet
5. Facsimile machine

Start this exercise by thinking of ways that each form can both save and waste time.

Exercise Task

With the background information above as context, do the following:

1. Describe what a manager can do to capitalize on the advantages and minimize the disadvantages of each form of information technology in terms of time management.
2. Some managers have argued that they have become more efficient by turning off one or more of these information technology devices. Critique this idea from a time-management perspective.
3. Identify two other forms of information technology you use and characterize them in terms of time management.

CHAPTER CLOSING CASE

DaimlerChrysler Drives onto the Web

Should web-based services be built into the dashboard or accessed through portable devices such as cell phones? That's only one of the issues facing DaimlerChrysler in its quest to offer drivers the latest and greatest information technology in vehicles of the future. With the Internet changing every day and competing auto makers moving forward with an array of high-tech initiatives, DaimlerChrysler is revving up its North American research and technology center in Palo Alto, California, to locate and lock up consumer-friendly technology for tomorrow's cars, vans, and trucks. The company also wants to use web-based technology to deliver various services to car buyers, such as information about local traffic and entertainment, as well as to boost operational efficiency.

To start, the auto maker set up a multimillion-dollar venture-capital fund and is buying stakes in outside firms that make promising new technologies. In one recent deal, DaimlerChrysler paid $3.8 million to invest in Iteris, a company that is preparing a device to warn commercial truckers when their vehicles are drifting out of the lane. However, the company will have to step harder on its accelerator pedal to keep up with the speedy pace of deal-making in Silicon Valley, where many technology start-ups are based.

DaimlerChrysler lost an early opportunity to acquire ImpulseSale.com, a start-up that plans to beam advertisements to drivers' cell phones. Despite three meetings and serious negotiations, the acquisition decision had to thread its way through DaimlerChrysler's bureaucracy—not an easy or fast process in an organization with key executives and operations on two continents. In the meantime, a faster-moving firm bought ImpulseSale.com before DaimlerChrysler made its final decision. Now the German headquarters of DaimlerChrysler has transferred a venture-capital manager to its research and technology office in Palo Alto, a move that should expedite decisions.

Still, DaimlerChrysler is as an automotive manufacturer with relatively little experience evaluating and backing risky high-tech ventures. To implement its Internet strategy, the company must determine when it would be most advantageous to develop a technology internally and when it would be better to use outside sources. It must also weigh the merits of taking a small stake in a start-up versus negotiating to acquire it. For

example, the company took a stake in VirtualBank, which is setting up a system to allow customers to handle financial services transactions via their cell phones.

On a broader scale, DaimlerChrysler is using the Internet to improve productivity through more efficient on-line purchasing and other activities. The company joined with General Motors, Ford, Renault, and Nissan to form Covisint, a business-to-business (B2B) on-line marketplace where all of the auto makers can make deals with more than thirty thousand suppliers of parts, components, and services. It also took a stake in The Cobalt Group and hired the company to build 2,100 e-commerce web sites for Chrysler, Jeep, and Dodge dealers. These sites will provide buyers with up-to-date information such as vehicle specifications, rebates, model availability, pricing, and other details.

In all, DaimlerChrysler is ready to invest $100 million in building its Internet initiatives to add dot-com pizzazz to its automotive business. Chairman Jürgen Schrempp sees great potential in web-based technology, and he's putting his executive muscle behind speedier implementation of the company's various strategies. Between the operational savings from higher productivity and the potential revenue from devices and services based on new technology, DaimlerChrysler stands to profit from steering in the direction of the web.

Case Questions

1. Why would DaimlerChrysler want separate web sites for its dealers rather than offering one integrated web-based system shared by all dealers?
2. How might DaimlerChrysler's Internet activities contribute to its ability to improve product and service quality?
3. Identify the new service technologies in which DaimlerChrysler is involved. What other service technology innovations should the company consider investing in?

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