

# Analyzing Work and Designing Jobs

## What Do I Need to Know?

*After reading this chapter, you should be able to:*

- L01 Summarize the elements of work flow analysis.
- L02 Describe how work flow is related to an organization's structure.
- L03 Define the elements of a job analysis, and discuss their significance for human resource management.
- L04 Tell how to obtain information for a job analysis.
- L05 Summarize recent trends in job analysis.
- L06 Describe methods for designing a job so that it can be done efficiently.
- L07 Identify approaches to designing a job to make it motivating.
- L08 Explain how organizations apply ergonomics to design safe jobs.
- L09 Discuss how organizations can plan for the mental demands of a job.

## Introduction

When brothers Michael and Jack Kennedy started Railroad Associates Corporation, a contracting firm that repairs railways, they wanted an organization that would be both flexible and efficient. So the two owners decided that decision making wouldn't be a managers-only responsibility. In fact, they skipped middle management altogether. Workers at job sites are expected to make their own decisions when questions and problems arise. That means Railroad Associates has to hire workers who are willing and able to take responsibility, and the company has to provide plenty of training. The company also gives employees access to its intranet, where they can look up budgets and schedules for the jobs they're working on. But the company doesn't just expect flexibility *from* its employees; it also offers flexibility *to* them in the form of work schedules employees can adjust when they have commitments outside of work. Once, when a truck driver's daughter needed surgery, Michael Kennedy drove the

man's tractor trailer for the week the employee spent taking care of his daughter.<sup>1</sup>

Broad responsibilities, duties like truck driving or construction tasks, and a flexible work schedule—all these are elements of workers' jobs with Railroad Associates. These elements give rise to the types of skills and personalities required for success, and they in turn help to narrow the field of people who will succeed at the company. Consideration of such elements is at the heart of analyzing work, whether in a start-up enterprise, a multinational corporation, or a government agency.

This chapter discusses the analysis and design of work and, in doing so, lays out some considerations that go into making informed decisions about how to create and link jobs. The chapter begins with a look at the big-picture issues related to analyzing work flow and organizational structure. The discussion then turns to the more specific issues of analyzing and designing jobs. Traditionally, job analysis has emphasized the study of existing jobs in order to make decisions such as employee selection, training, and compensation. In contrast, job design has emphasized making jobs more efficient or more motivating. However, as this chapter shows, the two activities are interrelated.

**L01** Summarize the elements of work flow analysis.

### Work Flow Design

The process of analyzing the tasks necessary for the production of a product or service.

### Job

A set of related duties.

### Position

The set of duties (job) performed by a particular person.

## Work Flow in Organizations

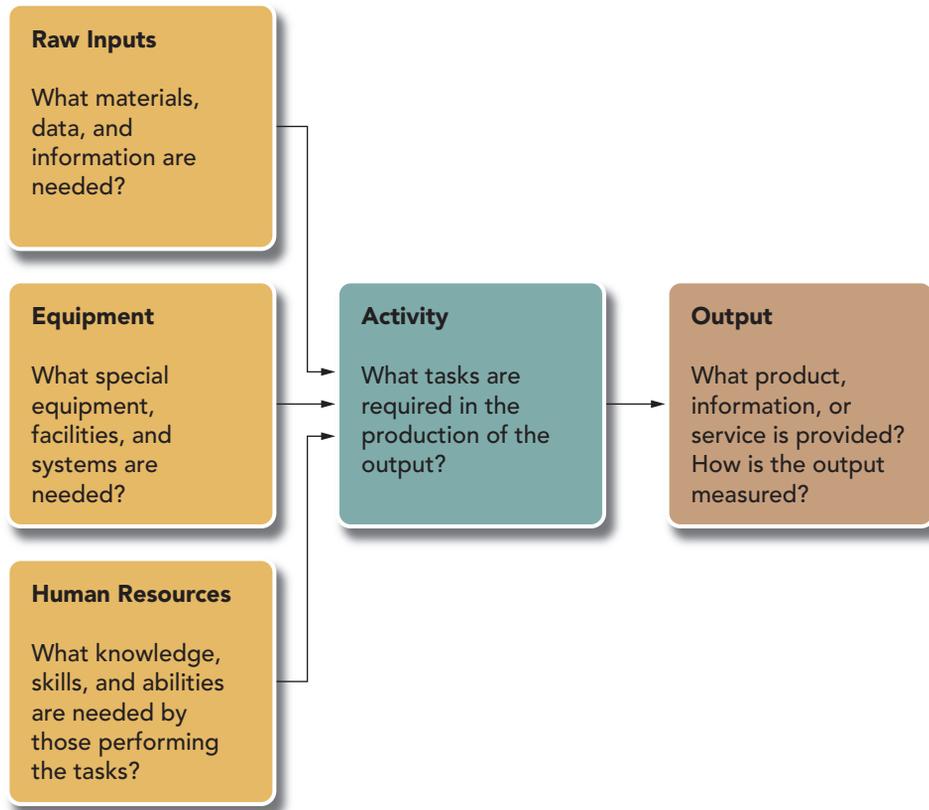
Informed decisions about jobs take place in the context of the organization's overall work flow. Through the process of **work flow design**, managers analyze the tasks needed to produce a product or service. With this information, they assign these tasks to specific jobs and positions. (A **job** is a set of related duties. A **position** is the set of duties performed by one person. A school has many teaching *positions*; the person filling each of those positions is performing the *job* of teacher.) Basing these decisions on work flow design can lead to better results than the more traditional practice of looking at jobs individually.

## Work Flow Analysis

Before designing its work flow, the organization's planners need to analyze what work needs to be done. Figure 4.1 shows the elements of a work flow analysis. For each type of work, such as producing a product line or providing a support service (accounting, legal support, and so on), the analysis identifies the output of the process, the activities involved, and three categories of inputs: raw inputs (materials and information), equipment, and human resources.

Outputs are the products of any work unit, whether a department, team, or individual. An output can be as readily identifiable as a completed purchase order, an employment test, or a hot, juicy hamburger. An output can also be a service, such as transportation, cleaning, or answering questions about employee benefits. Even at an organization that produces tangible goods, such as computers, many employees produce other outputs, such as components of the computers, marketing plans, and building security. Work flow analysis identifies the outputs of particular work units. The analysis considers not only the amount of output but also quality standards. This attention to outputs has only recently gained attention among HRM professionals. However, it gives a clearer view of how to increase the effectiveness of each work unit.

For the outputs identified, work flow analysis then examines the work processes used to generate those outputs. Work processes are the activities that members of a work unit engage in to produce a given output. Every process consists of operating procedures that specify how things should be done at each stage of developing the output. These procedures include all the tasks that must be performed in producing the output. Usually, the analysis breaks down the tasks into those performed by each person in the work unit. This analysis helps with design of efficient work systems by clarifying which tasks are necessary. Typically, when a unit's work load increases, the unit adds people, and when the work load decreases, some members of the unit may busy themselves with unrelated tasks in an effort to appear busy. Without knowledge of work processes, it is more difficult to identify whether the work

**Figure 4.1**

Developing a Work Flow Analysis

unit is properly staffed. Knowledge of work processes also can guide staffing changes when work is automated, outsourced, or restructured. At some companies, so much effort has gone into analyzing and refining work processes to improve efficiency that when demand plummeted in the recent recession, layoffs—as great as they were—were less than what the decline in sales would have predicted. For example, the South Carolina manufacturing plant of Parker Hannifin Corporation needs so few people to run the facility and each person is so knowledgeable that the company cannot operate the plant if it lays off any workers. In addition, at companies like surgical-device maker Conmed, work processes have become so flexible that the companies adjust to changes in demand gradually as they occur, rather than piling up inventory and then halting and later resuming production.<sup>2</sup>

The final stage in work flow analysis is to identify the inputs used in the development of the work unit's product. As shown in Figure 4.1, these inputs can be broken down into the raw inputs (materials and knowledge), equipment, and human skills needed to perform the tasks. In the mortgage banking industry, the inputs required for servicing loans increased dramatically after the financial crisis and economic recession made repayment impossible for a wave of borrowers. The federal government launched the Home Affordable Modification Program (HAMP), in which loan servicers—who traditionally handled just the routine transactions of paying off a home loan—were expected to work with borrowers to arrange new deals they could afford. Loan servicers suddenly needed many more people, and these people needed skills in working with the public as well as technical knowledge for determining what borrowers can afford to pay, what their home is worth, and what documents are required to modify a loan



Firefighters work as a team. They and their equipment are the “inputs” (they do the work), and the “output” is an extinguished fire and the rescue of people and pets. In any organization or team, workers need to be cross-trained in several skills to create an effective team. If these firefighters are trained to do any part of the job, the chief can deploy them rapidly as needed.

**L02** Describe how work flow is related to an organization’s structure.

**L03** Define the elements of a job analysis, and discuss their significance for human resource management.

### Job Analysis

The process of getting detailed information about jobs.

under HAMP. The servicers also needed computer software and hardware for processing all the data and documents. The challenge of quickly providing these new inputs is so great that some servicers are simply outsourcing the whole process to specialists.<sup>3</sup>

## Work Flow Design and an Organization’s Structure

Besides looking at the work flow of each process, it is important to see how the work fits within the context of the organization’s structure. Within an organization, units and individuals must cooperate to create outputs. Ideally, the organization’s structure brings together the people who must collaborate to efficiently produce the desired outputs. The structure may do this in a way that is highly centralized (that is, with authority concentrated in a few people at the top of the organization) or decentralized (with authority spread among many people). The organization

may group jobs according to functions (for example, welding, painting, packaging), or it may set up divisions to focus on products or customer groups.

Although there are an infinite number of ways to combine the elements of an organization’s structure, we can make some general observations about structure and work design. If the structure is strongly based on function, workers tend to have low authority and to work alone at highly specialized jobs. Jobs that involve teamwork or broad responsibility tend to require a structure based on divisions other than functions. When the goal is to empower employees, companies therefore need to set up structures and jobs that enable broad responsibility, such as jobs that involve employees in serving a particular group of customers or producing a particular product, rather than performing a narrowly defined function. The organization’s structure also affects managers’ jobs. Managing a division responsible for a product or customer group tends to require more experience and cognitive (thinking) ability than managing a department that handles a particular function.<sup>4</sup>

Work design often emphasizes the analysis and design of jobs, as described in the remainder of this chapter. Although all of these approaches can succeed, each focuses on one isolated job at a time. These approaches do not necessarily consider how that single job fits into the overall work flow or structure of the organization. To use these techniques effectively, human resource personnel should also understand their organization as a whole. As the “HR Oops!” emphasizes, without this big-picture appreciation, they might redesign a job in a way that makes sense for the particular job but is out of line with the organization’s work flow, structure, or strategy.

## Job Analysis

To achieve high-quality performance, organizations have to understand and match job requirements and people. This understanding requires **job analysis**, the process of getting detailed information about jobs. Analyzing jobs and understanding what is required to carry out a job provide essential knowledge for staffing, training, performance appraisal, and many other HR activities. For instance, a supervisor’s evaluation of an employee’s work should be based on performance relative to job requirements. In very small organizations, line managers may perform a job analysis, but usually the

# HR Oops!

## An Undefined Job

One way to see the significance of work design and job analysis is to learn from what happens at companies that fail to define jobs. An anonymous employee of a multi-media company told *Entrepreneur* magazine's Scott Gornall about an editor who was given a new job title, "creative manager of content." Unfortunately, the scope of that job was never specified or explained to others in the company.

The new creative manager appointed himself to teach the others how to be more creative. He placed some magazines in a cubicle and called a meeting to

announce that, henceforth, that space was the Idea Lab, where employees could go to reflect on ideas. He drew up a flow chart to explain the Idea Lab. He called monthly meetings for idea sharing. His colleagues, unimpressed, felt that he was disturbing their work in order to justify his new responsibilities, whatever they were.

Perhaps in principle, a creative manager of content would have met a real need for this publisher, but because the position and its fit with the organization's objectives were never clearly spelled out, the idea was wasted.

*Source:* Based on Scott Gornall, "The Superfluous Position," *Entrepreneur*, July 2009, <http://www.entrepreneur.com>.

### Questions

1. Why might management be reluctant to prepare a formal job description for a position like "creative manager of content"? What are the pitfalls of not doing so?
2. What advice about the position would you give to this company's managers?

work is done by a human resource professional. A large company may have a compensation management department that includes job analysts (also called personnel analysts). Organizations may also contract with firms that provide this service.

## Job Descriptions

An essential part of job analysis is the creation of job descriptions. A **job description** is a list of the tasks, duties, and responsibilities (TDRs) that a job entails. TDRs are observable actions. For example, a news photographer's job requires the jobholder to use a camera to take photographs. If you were to observe someone in that position for a day, you would almost certainly see some pictures being taken. When a manager attempts to evaluate job performance, it is most important to have detailed information about the work performed in the job (that is, the TDRs). This information makes it possible to determine how well an individual is meeting each job requirement.

A job description typically has the format shown in Figure 4.2. It includes the job title, a brief description of the TDRs, and a list of the essential duties with detailed specifications of the tasks involved in carrying out each duty. Although organizations may modify this format according to their particular needs, all job descriptions within an organization should follow the same format. This helps the organization make consistent decisions about such matters as pay and promotions. It also helps the organization show that it makes human resource decisions fairly.

Whenever the organization creates a new job, it needs to prepare a job description, using a process such as the one detailed in the "HR How To" box on page 101. Job descriptions should then be reviewed periodically (say, once a year) and updated if necessary. Performance appraisals can provide a good opportunity for updating job descriptions, as the employee and supervisor compare what the employee has been doing against the details of the job description.

### Job Description

A list of the tasks, duties, and responsibilities (TDRs) that a particular job entails.

**Figure 4.2**

Sample Job Description

**TRAIN CREW/SERVICE AT UNION PACIFIC**

**OVERVIEW**  
When you work on a Union Pacific train crew, you're working at the very heart of our railroad. Moving trains. Driving trains. Making sure our customers' freight gets delivered safely and on time.

**JOB DESCRIPTION**  
In this entry-level position, you'll start as a Switchperson or Brakeperson, working as on-the-ground traffic control. You don't need any previous railroad experience; we provide all training. These jobs directly lead to becoming a Conductor and a Locomotive Engineer, where you will have a rare opportunity to work on board a moving locomotive. The Conductor is responsible for the train, the freight and the crew. The Locomotive Engineer actually operates the locomotive.

**DUTIES**  
As a Switchperson or Brakeperson, you'll learn to move trains safely in the yards and over the road. You'll be climbing ladders, boarding freight cars, operating track switches, inspecting cars, and using radio communications to control train movement.

**MAJOR TASKS AND RESPONSIBILITIES**  
You won't work a standard 40-hour work week. Train crews are always on-call, even on weekends and holidays. You'll travel with our trains, sometimes spending a day or more away from your home terminal.

SOURCE: Union Pacific Web site, [www.unionpacific.jobs/careers/explore/train/train\\_service.shtml](http://www.unionpacific.jobs/careers/explore/train/train_service.shtml), accessed March 8, 2010.

Organizations should give each newly hired employee a copy of his or her job description. This helps the employee to understand what is expected, but it shouldn't be presented as limiting the employee's commitment to quality and customer satisfaction. Ideally, employees will want to go above and beyond the listed duties when the situation and their abilities call for that. Many job descriptions include the phrase *and other duties as requested* as a way to remind employees not to tell their supervisor, "But that's not part of my job."

## Job Specifications

Whereas the job description focuses on the activities involved in carrying out a job, a **job specification** looks at the qualities or requirements the person performing the job must possess. It is a list of the knowledge, skills, abilities, and other characteristics (KSAOs) that an individual must have to perform the job. *Knowledge* refers to factual or procedural information that is necessary for successfully performing a task. For example, this course is providing you with knowledge in how to manage human resources. A *skill* is an individual's level of proficiency at performing a particular task—that is, the capability to perform it well. With knowledge and experience, you could

### Job Specification

A list of the knowledge, skills, abilities, and other characteristics (KSAOs) that an individual must have to perform a particular job.

## WRITING A JOB DESCRIPTION

Preparing a job description begins with gathering information from sources who can identify the details of performing a task—for example, persons already performing the job, the supervisor or team leader, or if the job is new, managers who are creating the new position. Other sources of information may include the company's human resource files, such as past job advertisements and job descriptions, as well as general sources of information about similar jobs, such as O\*NET (<http://online.onetcenter.org>).

Based on the information gathered, the next step is to identify which activities are essential duties of the job. These include mental and physical tasks, as well as any particular methods and equipment to be used in carrying out those tasks. When possible, these should be stated in terms that are broad and goal oriented enough for the person in the

position to innovate and improve. For example, “Developing and implementing a system for ordering supplies efficiently” implies a goal (efficiency) as well as a task.

From these sources, the writer of the job description obtains the important elements of the description:

- *Title of the job*—The title should be descriptive and, if appropriate, indicate the job's level in the organization.
- *Administrative information about the job*—The job description may identify a division, department, supervisor's title, date of the analysis, name of the analyst, and other information for administering the company's human resource activities.
- *Statement of the job's purpose*—This should be brief and describe the position in broad terms.

- *Essential duties of the job*—These should be listed in order of importance to successful performance and should include details such as physical requirements (for example, the amount of weight to be lifted), the persons with whom an employee in this job interacts, and the results to be accomplished. This section should include every duty that the job analysis identified as essential.
- *Additional responsibilities*—The job description may state that the position requires additional responsibilities as requested by the supervisor.

*Sources:* Small Business Administration, “Writing Effective Job Descriptions,” *Small Business Planner*, [www.sba.gov/smallbusinessplanner/](http://www.sba.gov/smallbusinessplanner/), accessed March 10, 2010; and “How to Write a Job Analysis and Description,” *Entrepreneur*, [www.entrepreneur.com](http://www.entrepreneur.com), accessed March 10, 2010.

acquire skill in the task of preparing job specifications. *Ability*, in contrast to skill, refers to a more general enduring capability that an individual possesses. A person might have the ability to cooperate with others or to write clearly and precisely. Finally, *other characteristics* might be personality traits such as someone's persistence or motivation to achieve. Some jobs also have legal requirements, such as licensing or certification. Figure 4.3 is a set of sample job specifications for the job description in Figure 4.2.

In developing job specifications, it is important to consider all of the elements of KSAOs. As with writing a job description, the information can come from a combination of people performing the job, people supervising or planning for the job, and trained job analysts. Most of the jobs in a grocery warehouse are physically taxing, so to describe positions at a Roanoke County, Virginia, distribution center, Atlas Logistics emphasizes KSAOs related to that challenge. Atlas needs employees who are strong enough to lift 80 pounds and who are willing to spend part of the day working in the freezer area.<sup>5</sup>

In contrast to tasks, duties, and responsibilities, KSAOs are characteristics of people and are not directly observable. They are observable only when individuals are carrying out the TDRs of the job—and afterward, if they can show the product of

**Figure 4.3**

Sample Job Specifications

**TRAIN CREW/SERVICE AT UNION PACIFIC**

**REQUIREMENTS**  
 You must be at least 18 years old. You must speak and read English because you'll be asked to follow posted bulletins, regulations, rule books, timetables, switch lists, etc. You must pass a reading comprehension test (see sample) to be considered for an interview.

**JOB REQUIREMENTS**  
 You must be able to use a computer keyboard, and you must be able to count and compare numbers. (You might, for example, be asked to count the cars on a train during switching.) You must be able to solve problems quickly and react to changing conditions on the job.

You must have strong vision and hearing, including the ability to: see and read hand signals from near and far; distinguish between colors; visually judge the speed and distance of moving objects; see at night; and recognize changes in sounds.

You must also be physically strong: able to push, pull, lift and carry up to 25 pounds frequently; up to 50 pounds occasionally; and up to 83 pounds infrequently. You'll need good balance to regularly step on and off equipment and work from ladders to perform various tasks. And you must be able to walk, sit, stand and stoop comfortably.

You'll be working outdoors in all weather conditions—including snow, ice, rain, cold, and heat—and frequently at elevations more than 12 feet above the ground.

SOURCE: Union Pacific Web site, [www.unionpacific.jobs/careers/explore/train/train\\_service.shtml](http://www.unionpacific.jobs/careers/explore/train/train_service.shtml), accessed March 8, 2010.

their labor. Thus, if someone applied for a job as a news photographer, you could not simply look at the individual to determine whether he or she can spot and take effective photographs. However, you could draw conclusions later about the person's skills by looking at examples of his or her photographs.

Accurate information about KSAOs is especially important for making decisions about who will fill a job. A manager attempting to fill a position needs information about the characteristics required and about the characteristics of each applicant. Interviews and selection decisions should therefore focus on KSAOs.

**L04** Tell how to obtain information for a job analysis.

### Sources of Job Information

Information for analyzing an existing job often comes from incumbents, that is, people who currently hold that position in the organization. They are a logical source of information because they are most acquainted with the details of the job. Incumbents should be able to provide very accurate information.

A drawback of relying solely on incumbents' information is that they may have an incentive to exaggerate what they do in order to appear more valuable to the

organization. Information from incumbents should therefore be supplemented with information from observers, such as supervisors, who look for a match between what incumbents are doing and what they are supposed to do. Research suggests that supervisors may provide the most accurate estimates of the importance of job duties, while incumbents may be more accurate in reporting information about the actual time spent performing job tasks and safety-related risk factors.<sup>6</sup> For analyzing skill levels, the best source may be external job analysts who have more experience rating a wide range of jobs.<sup>7</sup>

The government also provides background information for analyzing jobs. In the 1930s, the U.S. Department of Labor created the *Dictionary of Occupational Titles (DOT)* as a vehicle for helping the new public employment system link the demand for skills and the supply of skills in the U.S. workforce. The DOT described over 12,000 jobs, as well as some of the requirements of successful job holders. This system served the United States well for over 60 years, but it became clear to Labor Department officials that jobs in the new economy were so different that the DOT no longer served its purpose. The Labor Department therefore introduced a new system, called the Occupational Information Network (O\*NET).

Instead of relying on fixed job titles and narrow task descriptions, the O\*NET uses a common language that generalizes across jobs to describe the abilities, work styles, work activities, and work context required for 1,000 broadly defined occupations. Users can visit O\*NET OnLine (<http://online.onetcenter.org>) to review jobs' tasks, work styles and context, and requirements including skills, training, and experience. When Boeing prepared to close its plant in Monrovia, California, it used the O\*NET's Skills Survey and database to help employees to be laid off identify jobs where they could use their skills elsewhere. Piedmont Natural Gas uses the O\*NET to improve selection of entry-level employees, hoping to reduce turnover by ensuring a better match between candidates' KSAs and the requirements of open positions at Piedmont.<sup>8</sup> Furthermore, although the O\*NET was developed to analyze jobs in the U.S. economy, research suggests that its ratings tend to be the same for jobs located in other countries.<sup>9</sup>

## Position Analysis Questionnaire

After gathering information, the job analyst uses the information to analyze the job. One of the broadest and best-researched instruments for analyzing jobs is the **Position Analysis Questionnaire (PAQ)**. This is a standardized job analysis questionnaire containing 194 items that represent work behaviors, work conditions, and job characteristics that apply to a wide variety of jobs. The questionnaire organizes these items into six sections concerning different aspects of the job:

1. *Information input*—Where and how a worker gets information needed to perform the job.
2. *Mental processes*—The reasoning, decision making, planning, and information-processing activities involved in performing the job.
3. *Work output*—The physical activities, tools, and devices used by the worker to perform the job.



Manpower, an employment services company, uses the O\*Net to classify its jobs and track demand nationwide.



### Position Analysis Questionnaire (PAQ)

A standardized job analysis questionnaire containing 194 questions about work behaviors, work conditions, and job characteristics that apply to a wide variety of jobs.

4. *Relationships with other persons*—The relationships with other people required in performing the job.
5. *Job context*—The physical and social contexts where the work is performed.
6. *Other characteristics*—The activities, conditions, and characteristics other than those previously described that are relevant to the job.

The person analyzing a job determines whether each item on the questionnaire applies to the job being analyzed. The analyst rates each item on six scales: extent of use, amount of time, importance to the job, possibility of occurrence, applicability, and special code (special rating scales used with a particular item). The PAQ headquarters uses a computer to score the questionnaire and generate a report that describes the scores on the job dimensions.

Using the PAQ provides an organization with information that helps in comparing jobs, even when they are dissimilar. The PAQ also has the advantage that it considers the whole work process, from inputs through outputs. However, the person who fills out the questionnaire must have college-level reading skills, and the PAQ is meant to be completed only by job analysts trained in this method. In fact, the ratings of job incumbents tend to be less reliable than ratings by supervisors and trained analysts.<sup>10</sup> Also, the descriptions in the PAQ reports are rather abstract, so the reports may not be useful for writing job descriptions or redesigning jobs.

## Fleishman Job Analysis System

### Fleishman Job Analysis System

Job analysis technique that asks subject-matter experts to evaluate a job in terms of the abilities required to perform the job.

To gather information about worker requirements, the **Fleishman Job Analysis System** asks subject-matter experts (typically job incumbents) to evaluate a job in terms of the abilities required to perform the job.<sup>11</sup> The survey is based on 52 categories of abilities, ranging from written comprehension to deductive reasoning, manual dexterity, stamina, and originality. As in the example in Figure 4.4, the survey items are arranged into a scale for each ability. Each begins with a description of the ability and a comparison to related abilities. Below this is a seven-point scale with phrases describing extremely high and low levels of the ability. The person completing the survey indicates which point on the scale represents the level of the ability required for performing the job being analyzed.

When the survey has been completed in all 52 categories, the results provide a picture of the ability requirements of a job. Such information is especially useful for employee selection, training, and career development.

## Importance of Job Analysis

Job analysis is so important to HR managers that it has been called the building block of everything that personnel does.<sup>12</sup> The fact is that almost every human resource management program requires some type of information that is gleaned from job analysis:<sup>13</sup>

- *Work redesign*—Often an organization seeks to redesign work to make it more efficient or to improve quality. The redesign requires detailed information about the existing job(s). In addition, preparing the redesign is similar to analyzing a job that does not yet exist.
- *Human resource planning*—As planners analyze human resource needs and how to meet those needs, they must have accurate information about the levels of skill required in various jobs, so that they can tell what kinds of human resources will be needed.
- *Selection*—To identify the most qualified applicants for various positions, decision makers need to know what tasks the individuals must perform, as well as the necessary knowledge, skills, and abilities.

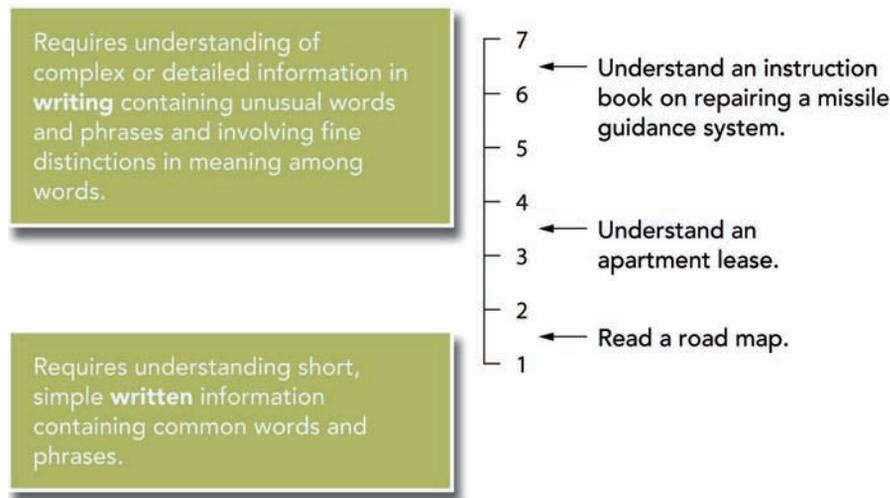
### Written Comprehension

This is the ability to understand written sentences and paragraphs.  
How written comprehension is different from other abilities:

#### This Ability

#### Other Abilities

Understand written English words, sentences, and paragraphs.	vs.	Oral comprehension (1): Listen and understand spoken English words and sentences.
	vs.	Oral expression (3) and written expression (4): Speak or write English words and sentences so others will understand.



SOURCE: From E. A. Fleishman and M. D. Mumford, "Evaluating Classifications of Job Behavior: A Construct Validation of the Ability Requirements Scales," *Personnel Psychology* 44 (1991), pp. 423–576. Copyright © 1991 by Blackwell Publishing. Reproduced with permission of Blackwell Publishing via Copyright Clearance Center.

**Figure 4.4**

Example of an Ability from the Fleishman Job Analysis System

- *Training*—Almost every employee hired by an organization will require training. Any training program requires knowledge of the tasks performed in a job, so that the training is related to the necessary knowledge and skills.
- *Performance appraisal*—An accurate performance appraisal requires information about how well each employee is performing in order to reward employees who perform well and to improve their performance if it is below standard. Job analysis helps in identifying the behaviors and the results associated with effective performance.
- *Career planning*—Matching an individual's skills and aspirations with career opportunities requires that those in charge of career planning know the skill requirements of the various jobs. This allows them to guide individuals into jobs in which they will succeed and be satisfied.
- *Job evaluation*—The process of job evaluation involves assessing the relative dollar value of each job to the organization in order to set up fair pay structures. If employees do not believe pay structures are fair, they will become dissatisfied and may quit, or they will not see much benefit in striving for promotions. To put dollar values on jobs, it is necessary to get information about different jobs and compare them.

## FRITO-LAY TAKES A FRESH LOOK AT JOB DESIGN

Frito-Lay's 17,000 route sales representatives (RSRs) play an unglamorous but essential role for the company. Each day, these employees drive trucks loaded with snacks to stores, where they arrange them in displays. The RSRs also talk to managers at the stores to take orders and negotiate for additional selling space. These employees are paid a commission tied to sales volume.

Recently, Frito-Lay was concerned that although RSRs had been meeting goals for sales and profits, high turnover and low productivity were becoming an issue. The company turned to its HR department to uncover the source of the problem. An investigation of compensation found that it was not a strong explanation for the problems. So the department began to analyze the RSR job. This analysis uncovered basic facts:

- The RSR job involves three main tasks: selling, merchandising (setting up displays), and driving and delivery.

- The key to greater sales is getting the best locations for product displays.
- The job is highly structured, with routes laid out each day. Some RSRs have low-volume routes, serving small stores with small trucks. Other RSRs have high-volume routes, serving big stores such as Walmart and driving larger trucks. RSRs on low-volume routes spend more of their day driving. RSRs on high-volume routes spend more of their day with store managers and have support from Frito-Lay employees who deal with buyers at the stores' headquarters.

Frito-Lay's HR analysts concluded that they should investigate whether combining the three types of tasks into one job was productive and whether jobs for the two types of routes should be structured differently.

To find out, the department surveyed RSRs and their supervisors to learn about the employees' backgrounds, motivation,

and satisfaction, linking that information with performance data. Frito-Lay learned that the type of route did indeed make a difference for job design. For the RSRs with low-volume routes, their selling skills—particularly the ability to negotiate additional display space—were most important to their performance. RSRs with more experience in selling tended to perform best in this role. So for these employees, Frito-Lay realized that it needed to emphasize selling skills in its hiring and training. For the high-volume routes, selling was important, but driving mattered more because these RSRs had to deliver all their orders during the early morning. Improving performance of these jobs required redesigning the delivery routes so the RSRs made all their deliveries first and then returned to stores to perform their other tasks later.

*Source:* Based on Alec Levenson and Tracy Faber, "Count on Productivity Gains," *HR Magazine*, June 2009, pp. 69–74.

Job analysis is also important from a legal standpoint. As we saw in Chapter 3, the government imposes requirements related to equal employment opportunity. Detailed, accurate, objective job specifications help decision makers comply with these regulations by keeping the focus on tasks and abilities. These documents also provide evidence of efforts made to engage in fair employment practices. For example, to enforce the Americans with Disabilities Act, the Equal Employment Opportunity Commission may look at job descriptions to identify the essential functions of a job and determine whether a disabled person could have performed those functions with reasonable accommodations. Likewise, lists of duties in different jobs could be compared to evaluate claims under the Equal Pay Act. However, job descriptions and job specifications are not a substitute for fair employment practices.

Besides helping human resource professionals, job analysis helps supervisors and other managers carry out their duties. Data from job analysis can help managers

identify the types of work in their units, as well as provide information about the work flow process, so that managers can evaluate whether work is done in the most efficient way. Job analysis information also supports managers as they make hiring decisions, review performance, and recommend rewards. The “Best Practices” box describes how Frito-Lay used job analysis to help meet the company’s productivity goals.

## Trends in Job Analysis

As we noted in the earlier discussion of work flow analysis, organizations are beginning to appreciate the need to analyze jobs in the context of the organization’s structure and strategy. In addition, organizations are recognizing that today’s workplace must be adaptable and is constantly subject to change. Thus, although we tend to think of “jobs” as something stable, they actually tend to change and evolve over time. Those who occupy or manage jobs often make minor adjustments to match personal preferences or changing conditions.<sup>14</sup> Indeed, although errors in job analysis can have many sources, most inaccuracy is likely to result from job descriptions being outdated. For this reason, job analysis must not only define jobs when they are created, but also detect changes in jobs as time passes.

With global competitive pressure and economic downturns, one corporate change that has affected many organizations is downsizing. Research suggests that successful downsizing efforts almost always entail changes in the nature of jobs, not just their number. Jobs that have survived the downsizing of the most recent recession tend to have a broader scope of responsibilities coupled with less supervision.<sup>15</sup>

These changes in the nature of work and the expanded use of “project-based” organizational structures require the type of broader understanding that comes from an analysis of work flows. Because the work can change rapidly and it is impossible to rewrite job descriptions every week, job descriptions and specifications need to be flexible. At the same time, legal requirements (as discussed in Chapter 3) may discourage organizations from writing flexible job descriptions. This means organizations must balance the need for flexibility with the need for legal documentation. This presents one of the major challenges to be faced by HRM departments in the next decade. Many professionals are meeting this challenge with a greater emphasis on careful job design.

## Job Design

Although job analysis, as just described, is important for an understanding of existing jobs, organizations also must plan for new jobs and periodically consider whether they should revise existing jobs. When an organization is expanding, supervisors and human resource professionals must help plan for new or growing work units. When an organization is trying to improve quality or efficiency, a review of work units and processes may require a fresh look at how jobs are designed.

These situations call for **job design**, the process of defining how work will be performed and what tasks will be required in a given job, or *job redesign*, a similar process that involves changing an existing job design. To design jobs effectively, a person must thoroughly understand the job itself (through job analysis) and its place in the larger work unit’s work flow process (through work flow analysis). Having a detailed knowledge of the tasks performed in the work unit and in the job, a manager then has many alternative ways to design a job. As shown in Figure 4.5, the available

**L05** Summarize recent trends in job analysis.

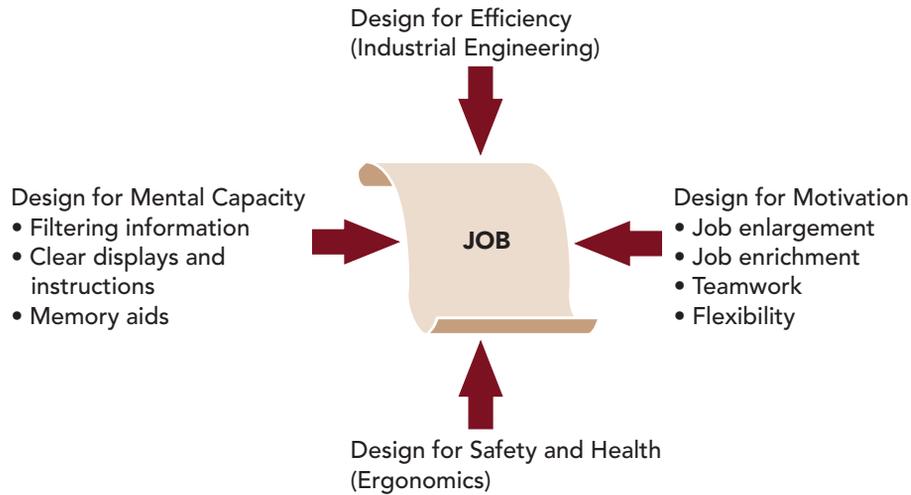
**L06** Describe methods for designing a job so that it can be done efficiently.

### Job Design

The process of defining how work will be performed and what tasks will be required in a given job.

**Figure 4.5**

Approaches to Job Design



approaches emphasize different aspects of the job: the mechanics of doing a job efficiently, the job's impact on motivation, the use of safe work practices, and the mental demands of the job.

## Designing Efficient Jobs

If workers perform tasks as efficiently as possible, not only does the organization benefit from lower costs and greater output per worker, but workers should be less fatigued. This point of view has for years formed the basis of classical **industrial engineering**, which looks for the simplest way to structure work in order to maximize efficiency. Typically, applying industrial engineering to a job reduces the complexity of the work, making it so simple that almost anyone can be trained quickly and easily to perform the job. Such jobs tend to be highly specialized and repetitive.

In practice, the scientific method traditionally seeks the “one best way” to perform a job by performing time-and-motion studies to identify the most efficient movements for workers to make. Once the engineers have identified the most efficient sequence of motions, the organization should select workers based on their ability to do the job, then train them in the details of the “one best way” to perform that job. The company also should offer pay structured to motivate workers to do their best. (Chapters 11 and 12 discuss pay and pay structures.)

Industrial engineering provides measurable and practical benefits. However, a focus on efficiency alone can create jobs that are so simple and repetitive that workers get bored. Workers performing these jobs may feel their work is meaningless. Hence, most organizations combine industrial engineering with other approaches to job design.

## Designing Jobs That Motivate

Especially when organizations must compete for employees, depend on skilled knowledge workers, or need a workforce that cares about customer satisfaction, a pure focus on efficiency will not achieve human resource objectives. The “Did You Know” box shows that job satisfaction among U.S. employees is declining. To improve job satisfaction, organizations need to design jobs that take into account factors that make jobs motivating and satisfying for employees.

### industrial engineering

The study of jobs to find the simplest way to structure work in order to maximize efficiency.

**L07** Identify approaches to designing a job to make it motivating.

A model that shows how to make jobs more motivating is the Job Characteristics Model, developed by Richard Hackman and Greg Oldham. This model describes jobs in terms of five characteristics:<sup>16</sup>

1. *Skill variety*—The extent to which a job requires a variety of skills to carry out the tasks involved.
2. *Task identity*—The degree to which a job requires completing a “whole” piece of work from beginning to end (for example, building an entire component or resolving a customer’s complaint).
3. *Task significance*—The extent to which the job has an important impact on the lives of other people.
4. *Autonomy*—The degree to which the job allows an individual to make decisions about the way the work will be carried out.
5. *Feedback*—The extent to which a person receives clear information about performance effectiveness from the work itself.

As shown in Figure 4.6, the more of each of these characteristics a job has, the more motivating the job will be, according to the Job Characteristics Model. The model predicts that a person with such a job will be more satisfied and will produce more and better work. For example, to increase the meaningfulness of making artery stents (devices that are surgically inserted to promote blood flow), the maker of these products invites its production workers to an annual party, where they meet patients whose lives were saved by the products they helped to manufacture.<sup>17</sup>

Applications of the job characteristics approach to job design include job enlargement, job enrichment, self-managing work teams, flexible work schedules, and telework.



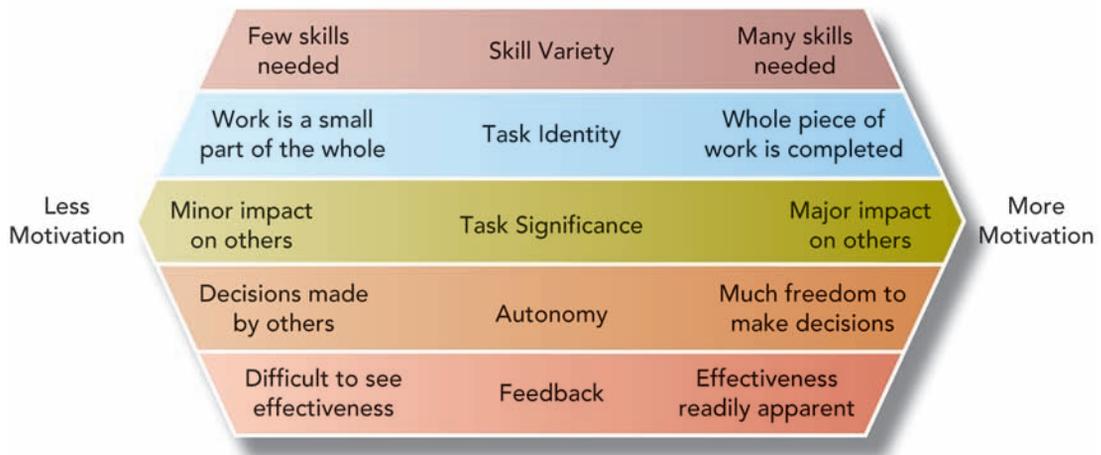
## Job Enlargement

In a job design, **job enlargement** refers to broadening the types of tasks performed. The objective of job enlargement is to make jobs less repetitive and more interesting. Spirit AeroSystems improved profitability by enlarging jobs. After the company

**Job Enlargement**  
Broadening the types of tasks performed in a job.

**Figure 4.6**

Characteristics of a Motivating Job



# Did You Know?

## Job Satisfaction Is Slipping

Although many organizations try to design jobs that are motivating, surveys by the Conference Board have found a gradual decline in job satisfaction among

U.S. workers since the 1980s. Declines were also measured in satisfaction with particular factors under HR control, such as job design and rewards.

*Source:* Conference Board, "U.S. Job Satisfaction at Lowest Level in Two Decades," news release, January 5, 2010, <http://www.conference-board.org>.



bought a manufacturing plant for fuselages and nosecones from Boeing, it rewrote the facility's 160 job classifications and job descriptions to create just 13 enlarged jobs.<sup>18</sup> The effort made work more flexible and efficient, as well as potentially more interesting. Methods of job enlargement include job extension and job rotation.

### Job Extension

Enlarging jobs by combining several relatively simple jobs to form a job with a wider range of tasks.

**Job extension** is enlarging jobs by combining several relatively simple jobs to form a job with a wider range of tasks. An example might be combining the jobs of receptionist, typist, and file clerk into jobs containing all three kinds of work. This approach to job enlargement is relatively simple, but if all the tasks are dull, workers will not necessarily be more motivated by the redesigned job.

### Job Rotation

Enlarging jobs by moving employees among several different jobs.

**Job rotation** does not actually redesign the jobs themselves, but moves employees among several different jobs. This approach to job enlargement is common among production teams. During the course of a week, a team member may carry out each of the jobs handled by the team. Team members might assemble components one day and pack products into cases another day. As with job extension, the enlarged jobs may still consist of repetitious activities, but with greater variation among those activities.

### Job Enrichment

### Job Enrichment

Empowering workers by adding more decision-making authority to jobs.

The idea of **job enrichment**, or empowering workers by adding more decision-making authority to their jobs, comes from the work of Frederick Herzberg. According to Herzberg's two-factor theory, individuals are motivated more by the intrinsic aspects of work (for example, the meaningfulness of a job) than by extrinsic rewards such as pay. Herzberg identified five factors he associated with motivating jobs: achievement,

recognition, growth, responsibility, and performance of the entire job. Thus, ways to enrich a manufacturing job might include giving employees authority to stop production when quality standards are not being met and having each employee perform several tasks to complete a particular stage of the process, rather than dividing up the tasks among the employees. For a salesperson in a store, job enrichment might involve the authority to resolve customer problems, including the authority to decide whether to issue refunds or replace merchandise.

In practice, however, it is important to note that not every worker responds positively to enriched jobs. These jobs are best suited to workers who are flexible and responsive to others; for these workers, enriched jobs can dramatically improve motivation.<sup>19</sup>



Nordstrom empowers its employees to resolve customer problems, which can enhance their job experience.

### Self-Managing Work Teams

Instead of merely enriching individual jobs, some organizations empower employees by designing work to be done by self-managing work teams. As described in Chapter 2, these teams have authority for an entire work process or segment. Team members typically have authority to schedule work, hire team members, resolve problems related to the team's performance, and perform other duties traditionally handled by management. Teamwork can give a job such motivating characteristics as autonomy, skill variety, and task identity.

Because team members' responsibilities are great, their jobs usually are defined broadly and include sharing of work assignments. Team members may, at one time or another, perform every duty of the team. The challenge for the organization is to provide enough training so that the team members can learn the necessary skills. Another approach, when teams are responsible for particular work processes or customers, is to assign the team responsibility for the process or customer, then let the team decide which members will carry out which tasks.

A study of work teams at a large financial services company found that the right job design was associated with effective teamwork.<sup>20</sup> In particular, when teams are self-managed and team members are highly involved in decision making, teams are more productive, employees more satisfied, and managers more pleased with performance. Teams also tend to do better when each team member performs a variety of tasks and when team members view their effort as significant.

### Flexible Work Schedules

One way in which an organization can give employees some say in how their work is structured is to offer flexible work schedules. Depending on the requirements of the organization and the individual jobs, organizations may be able to be flexible in terms of when employees work. As introduced in Chapter 2, types of flexibility include flextime and job sharing. Figure 4.7 illustrates alternatives to the traditional 40-hour workweek.

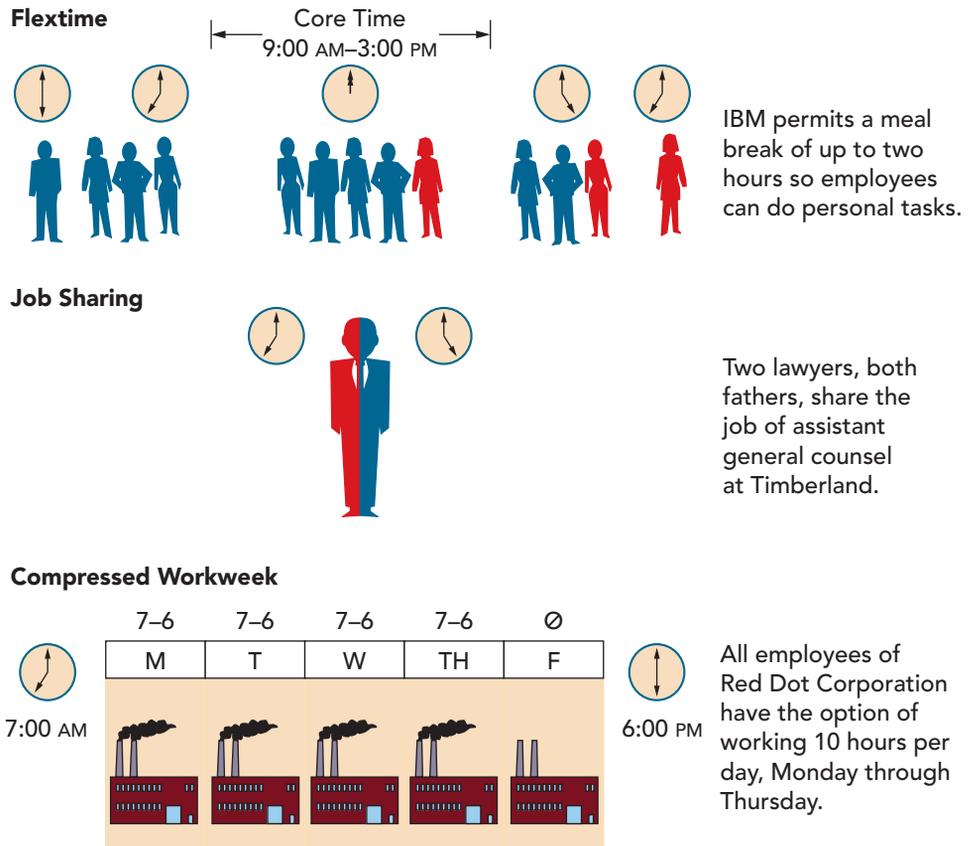
**Flextime** is a scheduling policy in which full-time employees may choose starting and ending times within guidelines specified by the organization. The flextime policy may require that employees be at work between certain hours, say, 10:00 AM and 3:00 PM. Employees work additional hours before or after this period in order to work the full day. One employee might arrive early in the morning in order to leave at 3:00 PM to pick up children after school. Another employee might be a night

#### Flextime

A scheduling policy in which full-time employees may choose starting and ending times within guidelines specified by the organization.

**Figure 4.7**

Alternatives to the 8-to-5 Job



owl who prefers to arrive at 10:00 AM and work until 6:00, 7:00, or even later in the evening. A flextime policy also may enable workers to adjust a particular day's hours in order to make time for doctor's appointments, children's activities, hobbies, or volunteer work. A work schedule that allows time for community and family interests can be extremely motivating for some employees.

**Job Sharing**

A work option in which two part-time employees carry out the tasks associated with a single job.

**Job sharing** is a work option in which two part-time employees carry out the tasks associated with a single job. Such arrangements can enable an organization to attract or retain valued employees who want more time to attend school or to care for family members. The job requirements in such an arrangement include the ability to work cooperatively and coordinate the details of one's job with another person.

Although not strictly a form of flexibility on the level of individual employees, another scheduling alternative is the *compressed workweek*. A compressed workweek is a schedule in which full-time workers complete their weekly hours in fewer than five days. For example, instead of working eight hours a day for five days, the employees could complete 40 hours of work in four 10-hour days. This alternative is most common, but some companies use other alternatives, such as scheduling 80 hours over nine days (with a three-day weekend every other week) or reducing the workweek from 40 to 38 or 36 hours. Employees may appreciate the extra days available for leisure, family, or volunteer activities. An organization might even use this schedule to offer a kind of flexibility—for example, letting workers vote whether they want a compressed workweek during the summer months. This type of schedule has a couple of drawbacks, however. One is that employees may become exhausted on the longer

workdays. Another is that if the arrangement involves working more than 40 hours during a week, the Fair Labor Standards Act requires the payment of overtime wages to nonsupervisory employees.

### Telework

Flexibility can extend to work locations as well as work schedules. Before the Industrial Revolution, most people worked either close to or inside their own homes. Mass production technologies changed all this, separating work life from home life, as people began to travel to centrally located factories and offices. Today, however, skyrocketing prices for office space, combined with drastically reduced prices for portable communication and computing devices, seem ready to reverse this trend. The broad term for doing one's work away from a centrally located office is *telework* or telecommuting.

For employers, advantages of telework include less need for office space and the ability to offer greater flexibility to employees who are disabled or need to be available for children or elderly relatives. The employees using telework arrangements may have less absences from work than employees with similar demands who must commute to work. Telecommuting can also support a strategy of corporate social responsibility because these employees do not produce the greenhouse gas emissions that result from commuting by car. Telework is easiest to implement for people in managerial, professional, or sales jobs, especially those that involve working and communicating on a computer. A telework arrangement is generally difficult to set up for manufacturing workers. Most of the call center representatives for Stanford Federal Credit Union work off-site, an arrangement that saves the organization money because it needs less office space and experiences less absenteeism. The arrangement also is a money saver for employees, who generally cannot afford to live in the credit union's pricey Silicon Valley locale. To make the arrangement work, Stanford Credit Union requires that the reps be experienced and that they set up a quiet, dedicated space for work in their homes.<sup>21</sup>

Given the possible benefits, it is not surprising that telework is a growing trend. A survey by the HR network WorldatWork found 43 percent growth between 2003 and 2008 in the number of U.S. workers who telecommuted at least once a month, reaching about one in four workers in 2008. A separate study by the Consumer Electronics Association found that over one-third of U.S. workers telecommuted at least once a month in 2009. The trend toward telecommuting is much stronger for occasional work at home than for full-time arrangements.<sup>22</sup>

### Designing Ergonomic Jobs

The way people use their bodies when they work—whether toting heavy furniture onto a moving van or sitting quietly before a computer screen—affects their physical well-being and may affect how well and how long they can work. The study of the interface between individuals' physiology and the characteristics of the physical work environment is called **ergonomics**. The goal of ergonomics is to minimize physical strain on the worker by structuring the physical work environment around the way the human body works. Ergonomics therefore focuses on outcomes such as reducing physical fatigue, aches and pains, and health complaints. Ergonomic research includes the context in which work takes place, such as the lighting, space, and hours worked.<sup>23</sup>

Ergonomic job design has been applied in redesigning equipment used in jobs that are physically demanding. Such redesign is often aimed at reducing the physical demands of certain jobs so that anyone can perform them. In addition, many interventions focus on redesigning machines and technology—for instance, adjusting



**L08** Explain how organizations apply ergonomics to design safe jobs.

#### Ergonomics

The study of the interface between individuals' physiology and the characteristics of the physical work environment.



Although employers in all industries are supposed to protect workers under the “general duty” clause, shipyards, nursing homes, grocery stores, and poultry-processing plants are the only four industries for which OSHA has published ergonomic standards.

the height of a computer keyboard to minimize occupational illnesses, such as carpal tunnel syndrome. The design of chairs and desks to fit posture requirements is very important in many office jobs. One study found that having employees participate in an ergonomic redesign effort significantly reduced the number and severity of cumulative trauma disorders (injuries that result from performing the same movement over and over), lost production time, and restricted-duty days.<sup>24</sup>

Ergonomics is about more than buying equipment, as the World Bank discovered when it moved to a new headquarters. To test the impact of ergonomic design, the organization conducted an experiment: one group of employees was given ergonomically designed furniture and worked with a professional ergonomist to set it up so that each employee had correct posture, while a second group simply received the furniture, which these employees set up themselves. Among employees who were experiencing pain and eyestrain at the time of the move, those who worked with the ergonomist had fewer symptoms afterward and also became more productive. The experimenters noted in their report, “Equipment such as an adjustable chair does not add value unless properly adjusted.”<sup>25</sup>

The Occupational Safety and Health Administration has a “four-pronged” strategy for encouraging ergonomic job design. The first prong is to issue guidelines (rather than regulations) for specific industries. As of 2010, these guidelines have been issued for the nursing home, grocery store, poultry-processing industries, and for shipyards. Second, OSHA enforces violations of its requirement that employers have a general duty to protect workers from hazards, including ergonomic hazards. Third, OSHA works with industry groups to advise employers in those industries. And finally, OSHA established a National Advisory Committee on Ergonomics to define needs for further research. You can learn more about OSHA’s guidelines at the agency’s Web site, [www.osha.gov](http://www.osha.gov).

**L09** Discuss how organizations can plan for the mental demands of a job.

## Designing Jobs That Meet Mental Capabilities and Limitations

Just as the human body has capabilities and limitations, addressed by ergonomics, the mind, too, has capabilities and limitations. Besides hiring people with certain mental skills, organizations can design jobs so that they can be accurately and safely performed given the way the brain processes information. Generally, this means reducing the information-processing requirements of a job. In these simpler jobs, workers may be less likely to make mistakes or have accidents. Of course, the simpler jobs also may be less motivating. Research has found that challenging jobs tend to fatigue and dissatisfy workers when they feel little control over their situation, lack social support, and feel motivated mainly to avoid errors. In contrast, they may enjoy the challenges of a difficult job where they have some control and social support, especially if they enjoy learning and are unafraid of making mistakes.<sup>26</sup> Because of this drawback to simplifying jobs, it can be most beneficial to simplify jobs where employees will most appreciate having the mental demands reduced (as in a job that is extremely challenging) or where the costs of errors are severe (as in the job of a surgeon or

## “OFFICE” WORK ON THE ROAD

Working on the road used to be the province of truck drivers and salespeople, but today’s wireless technology is linking all kinds of employees to their work, whether they’re at headquarters, visiting a client site, at home, or en route. For workers behind the wheel, the stakes are high. Research shows that drivers talking on the phone are four times more likely than nonchatters to crash, even if they’re using a hands-free headset. When eyes go off the road for text messaging or reading a computer screen, the risks are even worse.

But that hasn’t stopped some companies from designing jobs that encourage multitasking on the road. Roto-Rooter Services Company has installed software that lets plumbers use their cell phones to receive job requests,

get driving directions, and submit documents such as invoices. Roto-Rooter instructs its drivers not to use the system while driving, but it also expects an immediate response when it puts out a customer request for service. If a plumber doesn’t call back, it calls the next plumber on the list, in order to provide responsive customer service.

Sometimes the cost of efficiency is high. An employee for International Paper who was driving while talking on the phone struck another driver, causing injuries that required amputation of the person’s arm. The injured driver sued the company on the grounds that it permitted its employees to use cell phones while driving, as long as they used a headset. Confronted with research that compares this

multitasking risk to driving while intoxicated, International Paper settled at a cost of \$5.2 million.

On a more mundane level, job designers might want to consider studies showing that multitaskers tend to be more distracted, less able to remember new information acquired while multitasking, and less able to pick up the nuances of a conversation. Exxon Mobil and AMEC (an engineering and project management company) have experimented with bans on using cell phones while driving, and both companies reported no loss in productivity among employees who tried the ban.

*Source:* Based on Matt Richtel, “At 60 M.P.H., Office Work Is a High-Risk Job,” *The New York Times*, Business & Company Resource Center, <http://galenet.galegroup.com>.

air-traffic controller). The “eHRM” box describes the need to reduce errors while driving, which has become part of the job for more and more workers who stay linked to their work through wireless devices.

There are several ways to simplify a job’s mental demands. One is to limit the amount of information and memorization that the job requires. Organizations can also provide adequate lighting, easy-to-understand gauges and displays, simple-to-operate equipment, and clear instructions. Often, employees try to simplify some of the mental demands of their own jobs by creating checklists, charts, or other aids. Finally, every job requires some degree of thinking, remembering, and paying attention, so for every job, organizations need to evaluate whether their employees can handle the job’s mental demands.

Changes in technology sometimes reduce job demands and errors, but in some cases, technology has made the problem worse. Some employees try to juggle information from several sources at once—say, talking on a cell phone while typing, surfing the Web for information during a team member’s business presentation, or repeatedly stopping work on a project to check e-mail or instant messages. In these cases, the cell phone, handheld computer, and e-mail or instant messages are distracting the employees from their primary task. They may convey important information, but they also break the employee’s train of thought, reducing performance and increasing the likelihood of errors. The problem may be aggravated by employees downplaying the

significance of these interruptions. For example, in a recent survey of workers, only half said they check their e-mail at work more than once an hour, and more than a third said they check every 15 minutes. However, monitoring software on their computers determined that they were actually changing applications to check e-mail up to 30 or 40 times an hour.<sup>27</sup> The sheer volume of e-mail can be a drain on employee time. On average, a person at work sends and receives more than 150 e-mail messages every day, with the number expected to surpass 200 in the next few years. Reading and responding to these messages takes about one-fourth of the average employee's day, more than the time spent in meetings or on the phone.<sup>28</sup>

Information-processing errors also are greater in situations in which one person hands off information to another. Such transmission problems have become a major concern in the field of medicine, because critical information is routinely shared among nurses, doctors, and medical technicians, as well as between hospital employees changing shifts. Problems during shift changes are especially likely as a result of fatigue and burnout among employees with stressful jobs.<sup>29</sup> Some hospitals have coped by introducing a method called SBAR (situation, background, assessment, and recommendation), which standardizes the information delivered at handoff points. In a few seconds, the person handing off the care of a patient gets control of the situation by engaging the listener's attention (situation), relays enough information to establish the context of the problem (background), gives an overall evaluation of the condition (assessment), and makes a specific suggestion about the best action to take next (recommendation). At one hospital that began using the SBAR method, the rate of adverse events (unexpected medical problems causing harm) was reduced by more than half, from 90 to just 40 of every thousand patients treated.<sup>30</sup>

## thinking ethically

### IS TELECOMMUTING FAIR TO THOSE AT THE OFFICE?

For a growing number of workers who are sick of sitting in rush-hour traffic, the cure is telework, or telecommuting. Employees who embrace telecommuting cite greater flexibility, the chance to take on a new job without relocating, greater work-life flexibility, and the ability to work for stretches uninterrupted by colleagues checking on their weekend activities or inviting them to the break room for birthday cake.

However, not every employee can (or wants to) telecommute, and for those who make the trip to work, telecommuting by others can present some difficulties. Greater flexibility for some employees can make work less flexible for others, who are required to cover certain clients, tasks, or work hours. Supervisors with a last-minute task may find it easier to hand over the work to someone who is on-site. And employees who drive to work each day may feel that telecommuting employees simply have a more comfortable arrangement, which might not seem fair.

SOURCES: Rhymer Rigby, "Employees Feel at Home in the 'Post-Office' World," *Financial Times*, September 8, 2009, Business & Company Resource Center, <http://galenet.galegroup.com>; Dave Bailey, "How to Gear Up for a Surge in Remote Working," *Computing*, April 2, 2009, Business & Company Resource Center, <http://galenet.galegroup.com>; and Sam Narisi, "Four Reasons Office Workers Hate Telecommuters," *HR Tech News*, March 6, 2009, <http://www.hrtechnews.com>.

### Questions

1. According to this research, telework benefits some employees at the expense of others. Reviewing the ethical principles from Chapter 1, what can a person ethically do when a course of action benefits some people and hurts others?
2. Imagine that you work in human resource management at a company that has decided to adopt telework as a way to retain valued employees. Suggest ways you can help the company proceed with this plan as ethically as possible.

## SUMMARY

## LO1 Summarize the elements of work flow analysis.

The analysis identifies the amount and quality of a work unit's outputs, which may be products, parts of products, or services. Next, the analyst determines the work processes required to produce these outputs, breaking down tasks into those performed by each person in the work unit. Finally, the work flow analysis identifies the inputs used to carry out the processes and produce the outputs.

## LO2 Describe how work flow is related to an organization's structure.

Within an organization, units and individuals must cooperate to create outputs, and the organization's structure brings people together for this purpose. The structure may be centralized or decentralized, and people may be grouped according to function or into divisions focusing on particular products or customer groups. A functional structure is most appropriate for people who perform highly specialized jobs and hold relatively little authority. Employee empowerment and teamwork succeed best in a divisional structure. Because of these links between structure and types of jobs, considering such issues improves the success of job design.

## LO3 Define the elements of a job analysis, and discuss their significance for human resource management.

Job analysis is the process of getting detailed information about jobs. It includes preparation of job descriptions and job specifications. A job description lists the tasks, duties, and responsibilities of a job. Job specifications look at the qualities needed in a person performing the job. They list the knowledge, skills, abilities, and other characteristics that are required for successful performance of a job. Job analysis provides a foundation for carrying out many HRM responsibilities, including work redesign, human resource planning, employee selection and training, performance appraisal, career planning, and job evaluation to determine pay scales.

## LO4 Tell how to obtain information for a job analysis.

Information for analyzing an existing job often comes from incumbents and their supervisors. The Labor Department publishes general background information about jobs in the *Dictionary of Occupational Titles* and Occupational Information Network (O\*NET). Job analysts, employees, and managers may complete a Position Analysis Questionnaire or fill out a survey for the Fleishman Job Analysis System.

## LO5 Summarize recent trends in job analysis.

Because today's workplace requires a high degree of adaptability, job tasks and requirements are

subject to constant change. For example, as some organizations downsize, they are defining jobs more broadly, with less supervision of people in those positions. Organizations are also adopting project-based structures and teamwork, which also require flexibility and the ability to handle broad responsibilities.

## LO6 Describe methods for designing a job so that it can be done efficiently.

The basic technique for designing efficient jobs is industrial engineering, which looks for the simplest way to structure work to maximize efficiency. Through methods such as time-and-motion studies, the industrial engineer creates jobs that are relatively simple and typically repetitive. These jobs may bore workers because they are so simple.

## LO7 Identify approaches to designing a job to make it motivating.

According to the Job Characteristics Model, jobs are more motivating if they have greater skill variety, task identity, task significance, autonomy, and feedback about performance effectiveness. Ways to create such jobs include job enlargement (through job extension or job rotation) and job enrichment. In addition, self-managing work teams offer greater skill variety and task identity. Flexible work schedules and telework offer greater autonomy.

## LO8 Explain how organizations apply ergonomics to design safe jobs.

The goal of ergonomics is to minimize physical strain on the worker by structuring the physical work environment around the way the human body works. Ergonomic design may involve modifying equipment to reduce the physical demands of performing certain jobs or redesigning the jobs themselves to reduce strain. Ergonomic design may target work practices associated with injuries.

## LO9 Discuss how organizations can plan for the mental demands of a job.

Employers may seek to reduce mental as well as physical strain. The job design may limit the amount of information and memorization involved. Adequate lighting, easy-to-read gauges and displays, simple-to-operate equipment, and clear instructions also can minimize mental strain. Computer software can simplify jobs—for example, by performing calculations or filtering out spam from important e-mail. Finally, organizations can select employees with the necessary abilities to handle a job's mental demands.

## KEY TERMS

ergonomics, p. 113	job description, p. 99	job sharing, p. 112
Fleishman Job Analysis System, p. 104	job design, p. 107	job specification, p. 100
flextime, p. 111	job enlargement, p. 109	position, p. 96
industrial engineering, p. 108	job enrichment, p. 110	Position Analysis Questionnaire (PAQ), p. 103
job, p. 96	job extension, p. 110	work flow design, p. 96
job analysis, p. 98	job rotation, p. 110	

## REVIEW AND DISCUSSION QUESTIONS

1. Assume you are the manager of a fast-food restaurant. What are the outputs of your work unit? What are the activities required to produce those outputs? What are the inputs?
2. Based on Question 1, consider the cashier's job in the restaurant. What are the outputs, activities, and inputs for that job?
3. Consider the "job" of college student. Perform a job analysis on this job. What tasks are required in the job? What knowledge, skills, and abilities are necessary to perform those tasks? Prepare a job description based on your analysis.
4. Discuss how the following trends are changing the skill requirements for managerial jobs in the United States:
  - a. Increasing use of computers and the Internet.
  - b. Increasing international competition.
  - c. Increasing work-family conflicts.
5. How can a job analysis of each job in the work unit help a supervisor to do his or her job?
6. Consider the job of a customer service representative who fields telephone calls from customers of a retailer that sells online and through catalogs. What measures can an employer take to design this job to make it efficient? What might be some drawbacks or challenges of designing this job for efficiency?
7. How might the job in Question 6 be designed to make it more motivating? How well would these considerations apply to the cashier's job in Question 2?
8. What ergonomic considerations might apply to each of the following jobs? For each job, what kinds of costs would result from addressing ergonomics? What costs might result from failing to address ergonomics?
  - a. A computer programmer.
  - b. A UPS delivery person.
  - c. A child care worker.
9. The chapter said that modern electronics have eliminated the need for a store's cashiers to calculate change due on a purchase. How does this development modify the job description for a cashier? If you were a store manager, how would it affect the skills and qualities of job candidates you would want to hire? Does this change in mental processing requirements affect what you would expect from a cashier? How?
10. Consider a job you hold now or have held recently. Would you want this job to be redesigned to place more emphasis on efficiency, motivation, ergonomics, or mental processing? What changes would you want, and why? (Or why do you not want the job to be redesigned?)

## BUSINESSWEEK CASE

### BusinessWeek Pfizer Outsources Tasks, Not Jobs

David Cain loves his job. Well, most of it anyway. As an executive director for global engineering at Pfizer, Cain finds real satisfaction in assessing environmental real estate risks, managing facilities, and overseeing a multimillion-dollar budget for the pharmaceutical giant. What he doesn't love so much: creating PowerPoint slides and riffling through spreadsheets.

Lucky for Cain, Pfizer now lets him punt those tedious and time-consuming tasks to India with the click of a button. PfizerWorks, launched early last year, permits some 4,000 employees to pass off parts of their job to outsiders. You might call it personal outsourcing. With workers in India handling everything from basic market research projects to presentations, professionals such as Cain can focus on higher-value work. "It has really been a godsend," says Cain. "I can send them something in the evening, and the next morning it's waiting for me when I get to the office."

This novel twist on outsourcing comes at a time when other resources are dwindling. As companies cull people by the thousands—Pfizer itself announced some 8,000 job cuts in January [2009]—those who stay behind are being asked to do more. In a down economy, though, it's especially critical that executives direct their energies to motivating teams, creating new products, and thinking strategically about their next move. "The stakes go up even higher," says David Kreutter, Pfizer's vice president for U.S. commercial operations.

Originally dubbed the Office of the Future, PfizerWorks is partly the by-product of a cost-cutting push that began several years ago. Jordan Cohen, the architect and head of the program, came up with the idea after reading Thomas L. Friedman's book *The World Is Flat* and observing how his own team worked. Cohen recalls seeing one of his recruits, a new father, stay late at the office one night to crunch numbers and search for information on the Web. To Cohen, it didn't seem like time best spent.

Instead of shifting jobs overseas, as companies have done for years, Cohen wanted to find a way to shift tasks. He also felt the program should let employees do one-stop shopping. Instead of setting up a few specialized services, Pfizer employees click a single button on their computer desktop that sends them to the PfizerWorks site. They write up what they need on an online form, which is sent to one of two Indian service-outsourcing firms: Genpact, in Gurgaon, and a unit of Chicago's R. R. Donnelley.

Once a request is received, a team member such as R. R. Donnelley's Biju Kurian in India sets up a call with the Pfizer employee to clarify what's needed and when. The costs involved in each project are charged to the employee's department.

Pfizer is now looking to expand the program to more employees and to a wider array of tasks. While he was introducing a group of Pfizer scientists to the service last year, Cohen says, one of them immediately pointed out its limitations. "I got it, Jordan, we can use this," the

researcher said. "But what I really need is a smart guy for a day." He had a point. Some tasks can't easily be broken down into instructions on an online form, Cohen admits, and sometimes employees need an assistant working in the same time zone.

As a result, Pfizer is testing an arrangement with a small Columbus, Ohio-based firm called Pearl Interactive Network. Pearl employs mostly people with physical disabilities who help with such administrative tasks as organizing a marketing team's research documents on a shared server or scheduling meetings. While the partnership is modest and isn't meant to supplant arrangements in India or administrative jobs, Cohen hopes it will make Pfizer staff even more productive.

Although PfizerWorks hasn't quite reached its first anniversary, Cohen estimates that it has already freed up 66,500 hours for employees. Pfizer finds employees are now spending less money on other providers, such as graphic design shops or market research firms. Employees are asked to rate their satisfaction with the finished product. If the score isn't high enough, a department can refuse to pay, which has happened only a handful of times.

SOURCE: Excerpted from Jena McGregor, "Outsourcing Tasks Instead of Jobs," *BusinessWeek*, March 12, 2009, <http://www.businessweek.com>.

### Questions

1. As PfizerWorks is described here, the analysis of work flow and decisions about which tasks to outsource are handled by individual employees, rather than HR teams or outside analysts. What are some advantages and drawbacks of this approach?
2. If you worked in HR for Pfizer, how would you need to adjust job descriptions and requirements to account for employees' ability to outsource tasks?
3. The examples in this case refer to managers and scientists. What positions, if any, at Pfizer should *not* have access to PfizerWorks? Why?

## Case: Creative Jobs at W. L. Gore

When the husband-and-wife team of Bill and Vieve Gore founded W. L. Gore & Associates, their aim was not just to make and sell products from high-tech materials. Rather, they believed they could create a thriving, creative organization by giving smart people a chance to fully use their talents and ideas. They believed creativity could be stifled by rigid structure and hierarchy, so they built their company without managers, assigning teams of employees to work on opportunities.

Thus, at W. L. Gore, work flow is often about ideas as well as products. To produce good ideas, the company needs scientists and engineers with a profound understanding of their field of expertise, be it chemistry or the

fabrication of a new prototype. At the same time, the company's long-term success requires that it back only ideas that will meet real market needs, so expertise must extend to business knowledge coupled with a willingness to terminate projects that have little chance of success. This pairing of skill sets is especially powerful when an innovation isn't working out because Gore employees are gifted at analyzing the idea to see what aspects can be carried over into new projects, so the company builds on ideas. Also related to business skills, Gore employees must be good at communicating with customers, who can help the company identify needs and assess the value of ideas. This combination of skills is broad

because jobs at Gore are broadly defined; in contrast, at many other companies, scientists and engineers communicate mainly with other technical experts, leaving customer communication and market knowledge to the sales force.

The basic principle for organizing work at Gore is the team, established to meet a particular opportunity. Thus, each team includes a variety of functions and areas of expertise. As a result, team members see how different viewpoints are necessary to meet the team's objectives. Teams appoint a leader, so leadership is accountable to the team, rather than to corporate hierarchy.

Team members are expected to balance autonomy in how they work with responsibility for meeting team goals. They also must balance time spent on existing, known business requirements with time spent on ideas for creating value in new ways. To help employees maintain the balance, Gore assigns a "sponsor" to each individual, even the chief executive. The sponsor is someone who has made a commitment to the sponsored employee's success and provides the employee with learning opportunities, such as meeting a customer, building relationships with others in the company, or getting involved in a particular project. Sponsors also advocate for their employees' ideas and help them obtain resources to develop those ideas.

The Gore emphasis on teams provides fertile ground for creative thinking. For example, one of the company's biochemical engineers routinely collaborates with an excellent prototyper to develop innovations. The practice of building, reviewing, and discussing prototypes engages more people in thinking about an idea, so it can be improved and made practical in its early stages. Collaboration across teams and functions is encouraged, too. One employee says he can find an answer to any question from someone in the company in three phone calls or less. Facilities are kept relatively small and incorporate

all the functions for a particular line of business, making it easier for employees to know who they work with across various functions. Of course, the company also needs to provide enough lab space and other physical resources. Employees feel reinforced by Gore's culture of trusting them to develop new ideas and tackle big challenges. They report feeling able to create something unique and valuable.

For HR staffers, working for W. L. Gore entails knowing the business unit they support and protecting the organizational culture so carefully laid out by Bill and Vieve Gore. As you might expect, the emphasis is less on forms and structure. When new employees are hired, HR provides them with an orientation and three-day workshop that teaches how work is done at the company. Employees are paired up with their sponsor at the beginning as well. The transition to Gore's culture is tricky for some people who are used to the traditional hierarchy they've experienced at other companies. Some need guidance on how to be influential when they can't rely on their position in a hierarchy.

SOURCES: Debra Ricker France, "Creating Compelling Environments for Innovators," *Research-Technology Management*, November–December 2009, pp. 33–38; and "The World Is Flat," *Personnel Today*, July 22, 2008, Business & Company Resource Center, <http://galenet.galegroup.com>.

### Questions

1. According to the information given, what basic inputs, work activities (processes), and outputs can you identify for work at W. L. Gore?
2. What are some strengths of designing work around teams, as Gore has done? What are some challenges for managing this structure?
3. If you worked in HR for W. L. Gore, what are some knowledge, skills, ability, or other characteristics (KSAOs) you would include in the company's job descriptions?



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### Review

- Chapter learning objectives

### Application

- Manager's Hot Seat segment: "Virtual Workplace: Out of Office Reply"
- Video case and quiz: "Working Smart"
- Self-Assessments Find Your Match: O\*NET
- Web exercise: Comparative Job Analysis
- Small-business case: Inclusivity Defines BraunAbility's Products and Its Jobs

### Practice

- Chapter quiz

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# Acquiring and Preparing Human Resources

## Chapter 5

Planning for and Recruiting Human Resources

## Chapter 6

Selecting Employees and Placing Them in Jobs

## Chapter 7

Training Employees