

Analyzing Work and Designing Jobs

WHAT DO I NEED TO KNOW?

After reading this chapter, you should be able to:

- LO1** Summarize the elements of work flow analysis and how work flow relates to an organization's structure.
- LO2** Discuss the significance of job analysis and identify the elements of a job analysis.
- LO3** Explain how to obtain information for a job analysis and review job analysis developments.
- LO4** Understand the different approaches to job design.



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Do you associate STEM education with designing a skate park?

Exceptionally Interesting Jobs in STEM?

What comes to mind when you think of a job in Science, Technology, Engineering, or Math (STEM)? Do you associate STEM jobs with lab coats and whiteboards filled with equations? How about skate park half-pipes, food trends, video games, and fireworks?

Many jobs in STEM may be unexpected and reflect the dynamic nature of work that needs to be accomplished by organizations. For example, a skate park engineer's job description may include duties such as "calculating the amount of building materials such as concrete, wood, and coping needed."

Rebecca Kapogiannis, talent acquisition and inclusion at 3M Canada, provides some additional background to explain the changing nature of jobs—"most of our STEM-educated workforce is directly in the field with our customers" (e.g., working on site to troubleshoot issues).¹

Introduction

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 rewards. In contrast, job design has emphasized making jobs more efficient or more motivating. However, as this chapter shows, the two activities are interrelated.

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 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 Analysis

Before designing its work flow, the organization's planners need to analyze what work needs to be done. Figure 3.1 shows the elements of a work flow analysis. For each type of work, such as producing a product 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 an individual. Outputs may be identifiable objects such as a solar panel or a drivetrain for a passenger vehicle. However, an output can also be a service such as an airline flight or information (e.g., an answered question about employee benefits). In identifying the outputs of particular work units, work flow analysis considers both quantity and quality. Thinking in terms of these outputs gives HRM professionals a clearer view of how to increase each work unit's effectiveness.

Work flow analysis next considers the *work processes* used to generate the outputs identified. Work processes are the activities that a work unit's members engage in to produce a given output. They are described in terms of operating procedures for every task performed by each employee at each stage of the process. Specifying the processes helps HR professionals design efficient work systems by clarifying which tasks are necessary. Knowledge of work processes also can guide staffing changes when work is automated, outsourced, or restructured.

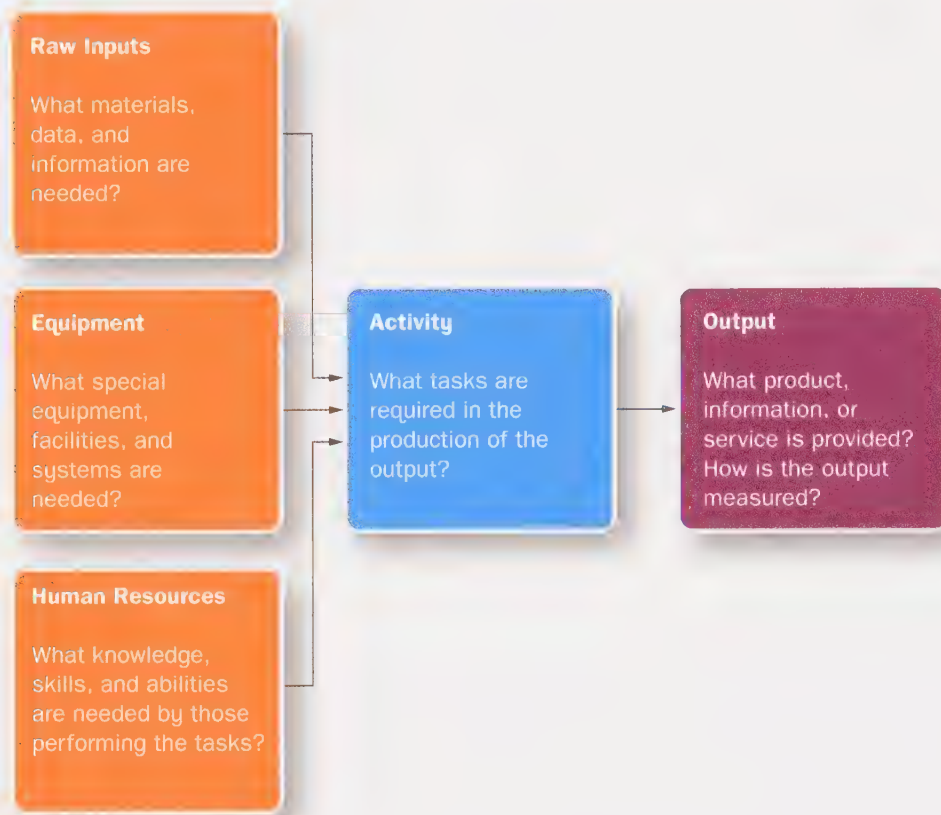
Finally, work flow analysis identifies the *inputs* required to carry out the work processes. As shown in Figure 3.1, inputs fall into three categories: raw inputs (materials and information), equipment, and human resources (knowledge, skills, and abilities). In the advertising industry, for example, technology has changed the relative importance of inputs. The stars of the ad business used to be the creative minds who dreamed up messages for television ads that would get people talking (and buying). But as consumers turn their attention to digital media, ad agencies need people who understand the latest in social media and who not only can generate a stream of messages but also can interpret the reaction streaming back from consumers.²

How Does the Work Fit with the Organization's Structure?

Work flow takes place in the context of an organization's structure. It requires the cooperation of individuals and groups. Ideally, the organization's structure brings together the people who must collaborate to produce the desired outputs efficiently. The structure may do this in a way that is highly *centralized* (i.e., with authority concentrated in a few people at the top of the organization)

FIGURE 3.1

Developing a Work Flow Analysis



or *decentralized* (with authority spread among many people). The organization may group jobs according to functions (e.g., 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 need to set up structures and jobs that enable broad responsibility, such as jobs that involve employees 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 specific function. In contrast, managing a functional department requires skill in managing conflicts and aligning

employees' efforts with higher-level goals, because these employees tend to identify significantly with their department or profession.³

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 resources professionals should also understand their organization as a whole.

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 management, and many other HR activities

FIGURE 3.2

Job Analysis Provides Information for HR Processes



(see Figure 3.2). For instance, a supervisor's assessment of an employee's work should be based on performance relative to job requirements. In very small organizations, managers may perform a job analysis, but usually the work is done by a human resources professional. A large company may have a compensation management or total rewards function that includes *job analysts*. Organizations may also contract with firms that provide this service.

Importance of Job Analysis

Job analysis is so important that it has been called the building block of everything that HR does.⁴ The fact is that almost every human resource management process requires some type of information gleaned from job analysis:⁵

- **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.
- **Workforce 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.
- **Talent acquisition.** To identify the applicants most likely to be the highest performers in various positions, decision makers need to know what tasks the individuals must perform, as well as the necessary knowledge, skills, and abilities.
- **Training, learning, and development.** Almost every employee hired by an organization will require training and/or development. Any learning initiative requires knowledge of the tasks performed in a job, so that the learning is related to the necessary knowledge and skills.
- **Performance management.** Performance management requires information about how well each employee is performing in order to reward employees who perform well and to improve their performance. Job analysis helps in identifying the behaviours and the results associated with effective performance.

- **Career planning.** Matching an individual's skills and aspirations with career opportunities requires that those responsible for developing career planning processes know the skill requirements of the various jobs. This facilitates matching of individuals to jobs in which they will succeed and be satisfied.
- **Job evaluation.** The process of job evaluation involves assessing the relative 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 advancement. To put values on jobs, it is necessary to get information about different jobs and compare them.

Job analysis is also important from a legal standpoint. As we saw in Chapter 2, governments impose requirements related to human rights and pay equity. Detailed, accurate, objective job analysis information helps decision makers comply with these requirements by keeping the focus on tasks and abilities. Employers have a legal obligation to eliminate discrimination against employees and prospective employees requiring workplace accommodation. Job redesign may be required to meet the needs of the job applicant. When accommodation is discussed with the employee or job applicant, it is important to have a mindset and use language that focuses on the person's abilities (in contrast to "disability").⁶

Besides helping human resources professionals, job analysis helps supervisors and 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, discuss performance, and recommend rewards.



EyeWire Collection/Getty Images

Careful job analysis makes it possible to define what a person in a certain job does and what qualifications are needed for the job. Firefighters use specific equipment to extinguish fires, require physical strength to do their jobs, and must possess the ability to make decisions under pressure.

Job Descriptions

A key outcome 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 job holder 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 (i.e., the TDRs). This information makes it possible to determine how well an individual is meeting each job requirement.

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

A job description typically has the format shown in Figure 3.3. It includes the job title, an overview of the job, and a list of the main duties. Although organizations may modify this format according to their needs, all job descriptions within an organization should follow the same format. This helps the organization make consistent decisions about matters such 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. Preparation of a job description begins with gathering information about the job from people already performing the job, the supervisor or the managers creating the job, and external experts or sources of information. Based on that information, the writer of the job description identifies the essential duties of the job, including mental and physical tasks and any methods and resources required. Job descriptions should be reviewed periodically (say once a year) and updated if necessary. Performance feedback conversations 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.

When organizations prepare many job descriptions, the process can become repetitive and time consuming. To address this challenge, a number of companies have developed software that provides forms into which the job analyst can insert details about the specific job. Typically, the job analyst would use a library of basic descriptions, selecting one that is for a similar type of job and then modifying it to fit the organization's needs.

Organizations should provide newly hired employees with access to their job description. This helps an employee 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

FIGURE 3.3

Sample Job Description

FINANCIAL AND INVESTMENT ANALYSTS (NOC 1112)

Financial and investment analysts collect and analyze financial information such as economic forecasts, trading volumes and the movement of capital, financial backgrounds of companies, historical performances, and future trends of stocks, bonds, and other investment instruments to provide financial and investment or financing advice for their company or their company's clients. Their studies and evaluations cover areas such as takeover bids, private placements, mergers, or acquisitions.

Main Duties

Financial analysts perform some or all of the following duties:

- Evaluate financial risk, prepare financial forecasts, financing scenarios, and other documents concerning capital management, and write reports and recommendations
- Plan short- and long-term cash flows and assess financial performance
- Analyze investment projects
- Advise on and participate in the financial aspects of contracts and calls for tender
- Follow up on financing projects with financial backers
- Develop, implement, and use tools for managing and analyzing financial portfolios
- Prepare a regular risk profile for debt portfolios
- Assist in preparing operating and investment budgets

Investment analysts perform some or all of the following duties:

- Collect financial and investment information about companies, stocks, bonds, and other investments using daily stock and bond reports, economic forecasts, trading volumes, financial periodicals, securities manuals, company financial statements, and other financial reports and publications
- Examine and analyze financial and investment information collected, including profiles of companies, stock and bond prices, yields, and future trends and other investment information
- Provide investment advice and recommendations to clients, senior company officials, pension fund managers, securities agents, and associates
- Prepare company, industry and economic outlooks, analytical reports, briefing notes, and correspondence

Source: Government of Canada - National Occupational Classification (NOC 2016), Financial and Investment Analysts, <http://noc.esdc.gc.ca/English/NOC/QuickSearch.aspx?ver=&val65=1112>, accessed January 29, 2018.

include the phrase *and other duties as required* 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) a job holder must have to perform the job.

job specification

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

Knowledge refers to factual or procedural information 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—the capability to perform it well. With knowledge and experience, you could 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 collaborate with others or to write clearly and concisely. Finally, *other characteristics* might be personality traits such as persistence or motivation to achieve. Some jobs also have legal requirements, such as licensing or certification. Figure 3.4 is a sample job specification for the job description in Figure 3.3.

FIGURE 3.4

Sample Job Specification

FINANCIAL AND INVESTMENT ANALYSTS (NOC 1112)

Employment Requirements

- A bachelor's degree in commerce, business administration, or economics *and* on-the-job training and industry courses and programs are usually required.
- A master's degree in business administration (MBA—concentration in finance) or in finance may be required.
- The Chartered Financial Analyst (CFA) designation, available through a program conducted by the Institute of Chartered Financial Analysts in the United States, may be required.

Source: Government of Canada - National Occupational Classification (NOC 2016), Financial and Investment Analysts, <http://noc.esdc.gc.ca/English/NOC/ProfileQuickSearch.aspx?val=1&val1=1112&ver=16&val65=Financial%20Analyst>, accessed January 29, 2018.

In developing job specifications, it is important to consider all of the elements of the 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, trained job analysts, and external sources. A study by ACT's Workforce Development Division interviewed manufacturing supervisors to learn what they do each day and what skills they rely on. The researchers learned that the supervisors spend much of their day monitoring their employees to make sure the workplace is safe, product quality is maintained, and work processes are optimal. Also, they rely heavily on their technical knowledge of the work processes they supervise.⁷ Based on this information, a job specification for a manufacturing supervisor would include skill in observing how people work, as well as in-depth knowledge of manufacturing processes and tools.

In contrast to tasks, duties, and responsibilities, KSAOs are characteristics of people and are observable only when individuals are carrying out the TDRs of the job—and afterward, if they can show the product of their work. Thus, when individuals apply for a job as a news photographer, you could not simply look at them to determine whether they can spot and take effective photos. However, you would be able to draw conclusions later about their skills by looking at examples of their photos. Similarly, many employers specify educational requirements. Meeting these requirements is treated as an indication that a person has some desired level of knowledge and skills.

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.

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 to appear more valuable to the organization. Information from incumbents should therefore be supplemented with information from observers, such as supervisors. Supervisors should review the information provided by incumbents, looking 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.⁸ For analyzing skill levels, the best source may be external job analysts who have more experience rating a wide range of jobs.⁹

The federal government also provides background information for analyzing jobs. Employment and Social Development Canada, working with Statistics Canada, maintains the **National Occupational Classification (NOC)** to provide standardized sources of information

National Occupational Classification (NOC) Tool created by the federal government to provide a standardized source of information about jobs in Canada's labour market.

about jobs in Canada's labour market. The NOC is a tool that uses a four-digit code to classify occupations based on the types and levels of skills required. The NOC classification system supports the needs of employers and individual job seekers, as well as career counsellors, statisticians, and labour market analysts, by providing a consistent way to identify and interpret the nature of work. A recent addition to the site is a publication titled *Job Descriptions: An Employers' Handbook* that may be particularly helpful to managers and human resource professionals.

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)**, a standardized tool containing 194 items that represent work behaviours, work conditions, and job characteristics that apply to a wide variety of jobs. The questionnaire is organized into six sections concerning different aspects of the job:

Position Analysis Questionnaire (PAQ) A standardized job analysis questionnaire containing 194 questions about work behaviours, work conditions, and job characteristics that apply to a wide variety of jobs.

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.
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 scores the questionnaire and generates 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 postsecondary-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.¹⁰ 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

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.¹¹ The survey is based on 52 categories of abilities, ranging from written comprehension to deductive reasoning, manual dexterity, stamina, and originality. 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.

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.

Analyzing Teamwork

Work design increasingly relies on teams to accomplish an organization's objectives, so HR professionals often must identify the best ways to handle jobs that are highly interdependent. Just as there are standardized instruments for assessing the nature of a job, there are standard ways to measure the nature of teams. Three dimensions are most critical:¹²

1. **Skill differentiation**—The degree to which team members have specialized knowledge or functional capacities.
2. **Authority differentiation**—The allocation of decision-making authority among individuals, subgroups, and the team as a whole.
3. **Temporal (time) stability**—The length of time over which team members must work together.

Competency Models

These traditional approaches to job analysis are too limited for some organizational needs. When human resource management is actively engaged in talent management as a way to support strategy, organizations need to think beyond skills for particular jobs. They must identify the capabilities they need to acquire and develop in order to

promote the organization's success. For this purpose, organizations develop competency models. A **competency** is an area of personal capability that enables employees to perform their work successfully.¹³

competency An area of personal capability that enables employees to perform their work successfully.

For example, success in a job or career path might require leadership strength, skill in coaching others, and the ability to bring out the best in each member of a diverse team of employees. A competency model identifies and describes all the competencies required for success in a particular occupation or set of jobs. Organizations may create competency models for occupational groups, levels of the organization, or even the entire organization. The Conference Board of Canada recently reported that almost three-quarters (72 percent) of organizations have a clearly defined set of competencies for key roles and positions. Highest use of competencies was in government (83 percent) and in organizations with 1,500–4,999 employees (88 percent).¹⁴

A competency model might require that all middle managers or all members of the organization be able to act with integrity, value diversity, and commit themselves to providing an excellent customer experience. Table 3.1 shows an example of a competency model for a project manager. The left side of the table lists competencies required for a project manager (organizational and planning skills; communications; and financial and quantitative

skills). The right side of the table shows behaviours that might be used to determine a project manager's level of proficiency for each competency. As in this example, competency models focus more on how people work, whereas job analysis focuses more on work tasks and outcomes. By focusing on performance and development aligned with organizational strategy, competency modelling provides the potential to create a fuller integration of human resource functions than traditional job analysis that examines specific jobs.¹⁵

Developments in Job Analysis

As we noted in the earlier discussion of work flow analysis and competency models, organizations have been appreciating the need to analyze jobs in the context of the organization's structure, strategy, and performance. In addition, organizations are recognizing that today's workplace must be agile and 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 adjustments to match personal preferences or changing conditions.¹⁶ Indeed, although errors in job analysis can have many sources, most of the 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.

TABLE 3.1

Examples of Competencies and a Competency Model

Project Manager Competencies	Proficiency Ratings
Organizational and Planning Skills Ability to establish priorities on projects and schedule activities to achieve results.	1—Below Expectations: Unable to perform basic tasks. 2—Meets Expectations: Understands basic principles and performs routine tasks with reliable results; works with minimal supervision or assistance. 3—Exceeds Expectations: Performs complex and multiple tasks; can coach, teach, or lead others.
Communications Ability to build credibility and trust through open and direct communications with internal and external customers.	1—Below Expectations: Unable to perform basic tasks. 2—Meets Expectations: Understands basic principles and performs routine tasks with reliable results; works with minimal supervision or assistance. 3—Exceeds Expectations: Performs complex and multiple tasks; can coach, teach, or lead others.
Financial and Quantitative Skills Ability to analyze financial information accurately and set financial goals that have a positive impact on company's bottom line and fiscal objectives.	1—Below Expectations: Unable to perform basic tasks. 2—Meets Expectations: Understands basic principles and performs routine tasks with reliable results; works with minimal supervision or assistance. 3—Exceeds Expectations: Performs complex and multiple tasks; can coach, teach, or lead others.

Source: Based on R. J. Mirabile, "Everything You Wanted to Know about Competency Modeling," *Training and Development* (August 1997): pp. 73–77.

With global competitive pressures, automation, and weak demand growth, 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 downsizing tend to have a broader scope of responsibilities coupled with less supervision. In some cases, organizations preserve jobs by asking employees to get the same amount of work done during fewer hours for less pay (because of the reduced hours). These changes can succeed with the right people in the jobs, working in conditions that allow them to focus on what matters most.¹⁷

These changes in the nature of work, the expanded use of “project-based” organizational structures, and the increasing shift to an on-demand economy require the type of broader understanding that comes from an analysis of work flows. For example, Uber’s business model relies upon independent contractors as drivers, most of whom work only a few hours per week. In this context, work analysis focused on the tasks involved in the work is likely more relevant than traditional job analysis.¹⁸

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 2) 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 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 resources 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.

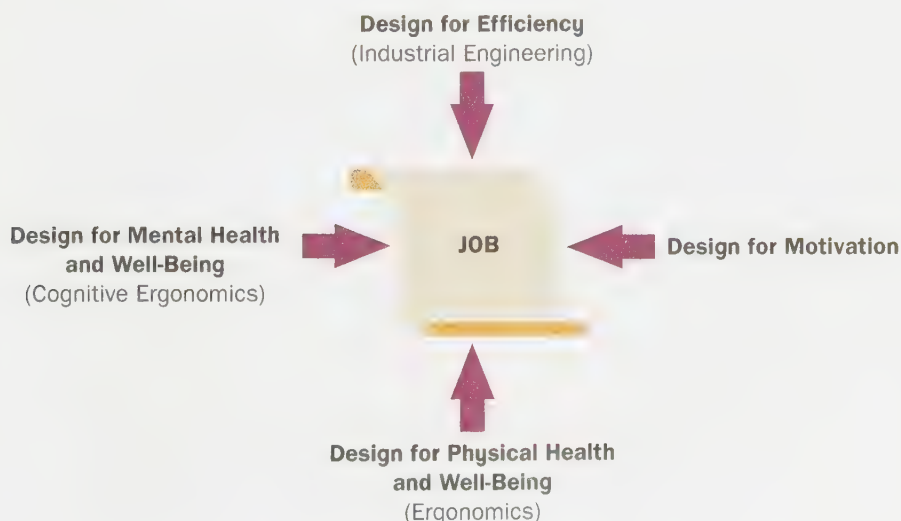
These situations call for *job design*, the process of defining the way work will be performed and the tasks that a given job requires, or *job redesign*, a similar process that involves changing an existing job design. To design jobs effectively, a person must thoroughly understand the job itself (through 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 3.5, the available approaches emphasize different aspects of the job: the mechanics of doing a job efficiently, the job’s impact on motivation, and the job’s impact on both the physical and mental health and well-being of the people performing 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 also workers should be less fatigued. This point of view has for years formed the basis

FIGURE 3.5

Approaches to Job Design



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.

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

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. (Chapter 8 discusses total rewards.)

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 have to 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. Organizations need jobs that employees find

interesting and satisfying, and job design should take into account factors that make jobs motivating to employees.

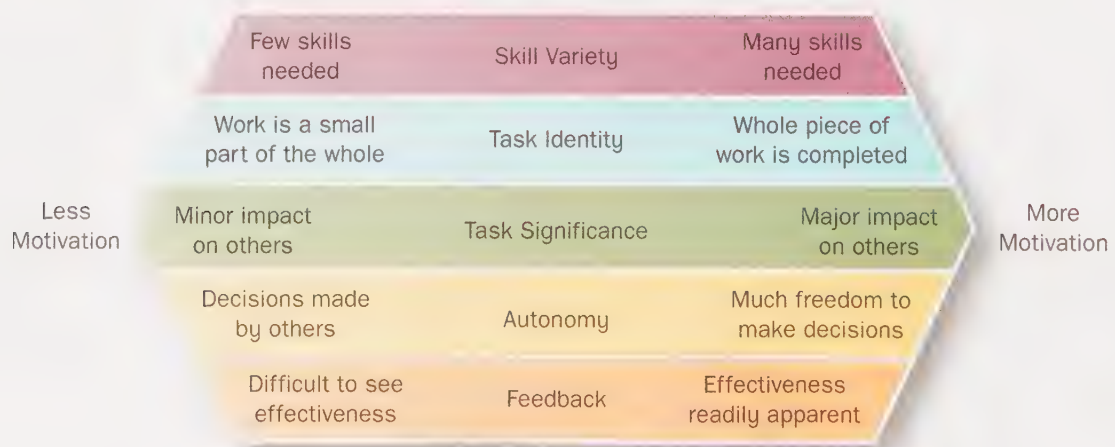
A model that shows how to make jobs more motivating is the Job Characteristics Model, developed by Richard Hackman and Greg Oldham. This model describes jobs in terms of five characteristics:¹⁹

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 (e.g., building an entire component or resolving a customer’s issue);
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 3.6, 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 an example of such a job, consider the skill variety and task significance of some of the positions companies are filling in order to have a stronger web presence. Front-end developers apply knowledge of software, design, and user behaviour to create a user interface that is clear and easy to use. Data scientists translate business problems into mathematical models they can test and then translate their

FIGURE 3.6

Characteristics of a Motivating Job



statistical test results into business solutions. Now imagine employees in jobs like this working in an environment such as Square Root, a tech company that analyzes data to help businesses improve their performance. Square Root's policies are based on a belief that employees do their best work when they have autonomy concerning their schedule and other working conditions. Its employees say the company provides great challenges and a great atmosphere—and their co-workers go above and beyond to meet goals.²⁰

Applications of the job characteristics approach to job design include job enlargement, job enrichment, self-managing work teams, flexible work schedules, and remote work. In applying these methods, HR professionals should keep in mind that individual differences among workers will affect how much they are motivated by job characteristics and able to do their best work.²¹ For example, someone who thrives in a highly structured environment might not actually be motivated by autonomy and would be a better fit where a supervisor makes most decisions.

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. Jobs also become enlarged when organizations add new goals or ask fewer workers to accomplish work that had been spread among more people. In those situations, the challenge is to avoid crossing the line from interesting jobs into jobs that burn out employees.

Organizations that use job enlargement to make jobs more motivational employ techniques such as job extension and job rotation. **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, data entry clerk, and records 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 does not actually redesign the jobs, but rather 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 enlargement
Broadening the types of tasks performed in a job.

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

job rotation
Enlarging jobs by moving employees among several different jobs.

Job Enrichment

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 (e.g., 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 sales associate 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.

job enrichment
Engaging workers by adding more decision-making authority to jobs.

In practice, however, it is important to note that not every worker responds positively to enriched jobs. These jobs are best suited to employees who are flexible and responsive to others; for these employees, enriched jobs can dramatically improve motivation.²²

Self-managed Work Teams

Instead of merely enriching individual jobs, some organizations engage employees by designing work to be done by self-managed work teams. 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 motivating characteristics such 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.²³ 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 satisfied 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 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 about when employees work. As introduced in Chapter 1, types of flexibility include flextime and job sharing. Figure 3.7 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 a.m. and 3:00 p.m. 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

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



Antonio Mo/Getty Images

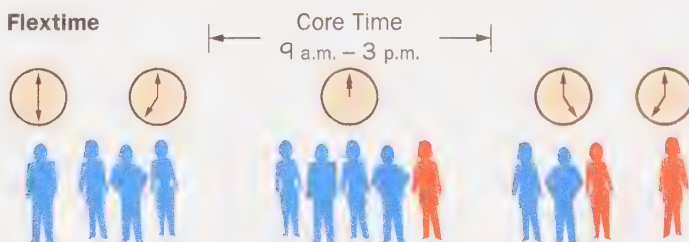
Employees who have enriched jobs and/or work in self-managed teams are likely to be motivated and engaged when they have decision-making authority.

3:00 p.m. to pick up children after school. Another employee might need to check in on an aging parent in the morning, or prefer going to the gym before arriving for work at 10:00 a.m. and work until 6:00 or 7:00 p.m. A flextime policy may also enable workers to adjust a specific day's

FIGURE 3.7

Alternatives to the 8-to-5 Job

Flextime



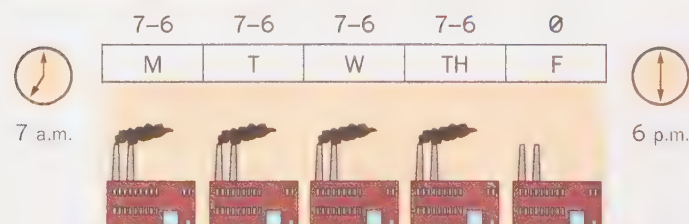
IBM permits a meal break of up to two hours so employees can do personal tasks.

Job Sharing



Two lawyers, both fathers, share the job of assistant general counsel at Timberland.

Compressed Workweek



All employees of Red Dot Corporation have the option of working ten hours per day, Monday through Thursday.

hours in order to make time for outside appointments, family activities, or volunteer work. A work schedule that allows time for personal, community, and family interests can be extremely motivating for some employees.

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

job sharing

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

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 might 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 choose 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 a specific number of hours during a week, employment/labour standards legislation may require the payment of overtime wages to certain groups of employees. For ideas on how to set up flexible scheduling, see HR How To.

HR How-To



Planning for Workplace Flexibility

Many companies allow for some flexibility in work arrangements, but far fewer have established formal policies for it, according to a recent survey by World at Work and FlexJobs. Providing guidelines in “print” is one important step in ensuring that such arrangements are fair and well understood. Here are some additional tips for setting up flexible arrangements:

- Set guidelines or boundaries for what is flexible. For example, employees may work any hours between Monday and Friday as long as these include at least 30 hours worked in the office each week.
- Establish performance standards that managers can track whether or not they and their employees are working in the same place at the same time.
- Recognize that some jobs are suitable for flexible work hours and locations, but others are not. Review job requirements to ensure that decisions about flexibility are related to the conditions for successful job performance.
- Avoid making any pre-conceived conclusions about which employees will value flexibility. Stereotypes might suggest that women are more concerned about having flexibility because they have more responsibilities for family care. However, surveys that ask about flexibility are finding that men also value flexibility.
- Plan what measures to use to monitor the success of any flexibility policies. For example, the company might measure employee turnover, absenteeism, and output before and after starting to offer flexibility, in order to estimate its impact on business success.
- Develop managers' understanding of and ability to support flexible arrangements. If managers are comfortable with, say flextime, employees will be more likely to use it. These policies will be more effective if managers feel confident in leading employees and measuring performance.

Sources: Ellen Galinsky, “Relationship Management: The New Flexibility,” *HR Magazine*, December 2015, <https://www.shrm.org>; Genevieve Douglas, “Flexible Work Programs Plentiful, but Not Formalized,” *HR Focus*, November 2015, pp. 13–14; Kathy Gurchiek, “Five Companies That Get Workflex Right,” *HR Magazine*, October 2015, <https://www.shrm.org>; “Study: Men Value Flex Just as Much as Women Do,” *HR Specialist: Compensation & Benefits*, January 2015, *Business Insights: Global*, <http://bi.galegroup.com>; Clare Benteley, “Turn for the Better,” *Employee Benefits*, March 2015, EBSCOhost, <https://web.a.ebscohost.com>.

HR Oops!



Neglecting Remote Workers?

Although more people are working remotely, Gallup research identifies three areas where managers fall short in engaging their fully remote workers—not recognizing or praising their good work as frequently; being less likely to have a conversation about career goals and personal growth; and not providing opportunities to connect with co-workers. And, according to a recent survey of 1,153 employees conducted by VitalSmarts, remote workers say that colleagues leave them out and even mistreat them. For example, 84 percent of remote workers report that when they experience routine workplace

challenges “the concern dragged on for a few days or more.” Remote workers are also more likely to report that “their colleagues don’t fight for my priorities, say bad things behind my back, and make changes to a project without warning me,” than on-site employees.

Questions

1. What can managers do to build trust and keep remote workers focused and high-performing?
2. What can remote workers do to maintain strong connections to their organizations?

Source: Michael Ferguson, “Stop Neglecting Remote Workers,” *Harvard Business Review*, January 17, 2018, <https://hbr.org>; John Dujay, “Remote workers feeling excluded: Study,” *Canadian HR Reporter*, 30 (21), December 11, 2017, p. 3, 10; Joseph Grenny and David Maxfield, “A Study of 1,100 Employees Found That Remote Workers Feel Shunned and Left Out,” *Harvard Business Review*, November 2, 2017, <https://hbr.org>; Annamarie Mann, “3 Ways You Are Failing Your Remote Workers,” *Gallup News*, August 1, 2017, <http://news.gallup.com>, accessed February 1, 2018.

Telework and Remote Work

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. Escalating prices for office space, combined with drastically reduced prices for computers and communication technologies, are forces working to reverse this trend. The broad term for doing one’s work away from a centrally located office is *remote work*, *telework*, or *telecommuting*; however, it was been suggested that *remote workers* work solely from home, whereas *telecommuters* work from home an average of 1–3 days per week.²⁴ Wayne Berger, executive vice-president of Regus Canada, a flexible workplace provider based in Toronto, describes remote work/telework being at the highest level ever with 47 percent of Canadians working “outside the office for half the week or more.”²⁵

For employers, advantages of remote work include reduced need for office space and the ability to offer greater flexibility to employees. A recent report by Global Workforce Analytics and FlexJobs estimates that half-time telecommuting would reduce real estate costs by 25 percent; reduce absenteeism costs by 31 percent, and increase productivity by 15 percent.²⁶

Remote work/telework can also support a strategy of sustainability because these employees do not produce the greenhouse gas emissions that result from commuting by

vehicle. Remote work and telework is easiest to implement for people in managerial, professional, office, or sales jobs. A remote arrangement is generally difficult to set up for manufacturing workers and has become a hot topic in tech companies. For example, IBM, once a “remote-work pioneer” with 40 percent of its 386,000 global employees working remotely, recently informed 2,600 remote employees that the company would be calling them back to state-of-the-art office spaces to inspire collaboration, innovation, and team work.²⁷

Leslie Sarauer, senior vice-president of human resources at Waterloo, Ontario-based OpenText, explains that “when it comes to tech developers and engineering teams, it’s helpful to have those teams working together as opposed to remotely.”²⁸

Designing Ergonomically Correct Jobs

The way people use their bodies when they work—whether lifting heavy furniture into a moving truck 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

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

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.²⁹

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 more people are able to perform them. In addition, many interventions focus on redesigning machines and technology—for instance, adjusting 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 *repetitive strain injuries* (injuries that result from performing the same movement over and over), lost production time, and restricted-duty days.³⁰

A more recent ergonomic challenge comes from the popularity of mobile devices. As workers find more and more uses for these devices, they are at risk from

repetitive-stress injuries (RSIs). Typing with one's thumbs to send frequent text messages on a smartphone can result in inflammation of the tendons that move the thumbs. Laptop computers are handy to carry, but because the screen and keyboard may be contained in a single device, it can be difficult to create the ergonomically correct standards of screen at eye level and keyboard low enough to type with arms bent at a 90-degree angle. Frequent users of these devices must therefore trade off eyestrain against physical strain to wrists, unless they hook up their device to an external, properly positioned keyboard. Touchscreens pose their own risks. They are typically part of a flat device such as a smartphone or tablet, and these are difficult to position for optimal viewing and typing. Using vertically oriented touchscreens causes even more muscle strain than tapping on a screen lying flat. In addition, because touchscreens usually lack the tactile feedback of pressing keys on a keyboard, users tend to strike them with more force than they use on real keys. Attaching a supplemental keyboard addresses this potential source of strain. When using mobile devices or any computer, workers can protect themselves by taking frequent breaks and paying attention to their posture while they work.³¹

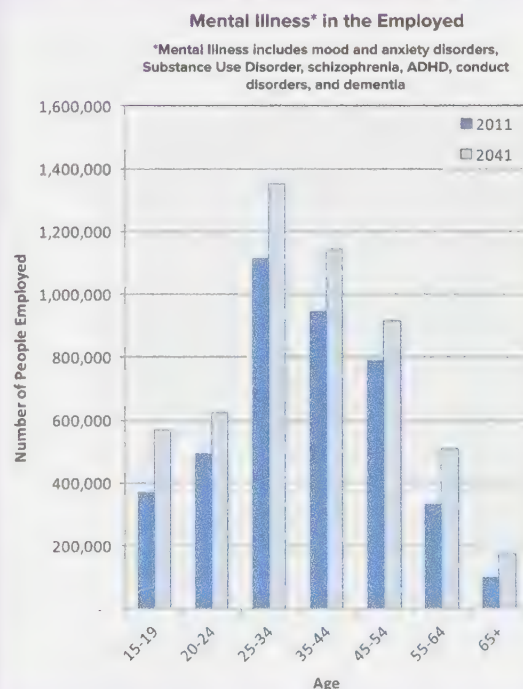
Did You KNOW?



Mental Illness in the Employed Is Increasing for All Age Groups

The Mental Health Commission of Canada (MHCC) reports that 1 in 5 Canadians experience a mental health or addiction problem in any given year and that mental health costs the Canadian economy about \$51 billion every year. Information about a job's cognitive demands including time pressures, social interactions, and general stressors that could increase the mental stress of people performing the job is important to designing jobs and matching employees' capabilities to an organization's jobs.

Sources: "Advancing the Mental Health Strategy for Canada: A Framework for Action 2017–2022, (2016), www.mentalhealthcommission.ca, accessed February 1, 2018; Joseph Cohen-Lyons, Samantha Seabrook, "The Rise of cognitive demands analysis," *Canadian HR Reporter*, December 12, 2016, p. 17; P. Smetanin, D. Stiff, D., C. Briante, C.E. Adair, S. Ahmad, and M. Khan, "The Life and Economic Impact of Major Mental Illnesses in Canada: 2011 to 2041," (2011), RiskAnalytica, on behalf of the Mental Health Commission of Canada.



Designing Jobs That Consider Cognitive Demands

Just as the human body has capabilities and limitations, addressed by ergonomics, the mind, too, has capabilities and limitations. As more and more work activities become information processing activities, the need to consider *cognitive ergonomics* is likely to be an emerging trend.³² 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 redesigned jobs, workers may be less likely to make mistakes or have accidents. Of course, less complex jobs may also 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

Thinking ETHICALLY



How Can You Ethically Design a Dangerous Job?

One of the most popular professional sports in North America is football, but the Canadian Football League (CFL) and the National Football League (NFL) face new scientific evidence suggesting that injuries sustained by football players are more serious than had previously been thought. Winning a game requires aggressive play, including head collisions. Sometimes the result is a major concussion, known to be serious. But scientists have observed a link between taking less severe hits day in and day out and a condition called chronic traumatic encephalopathy (CTE). With CTE, the brain's repeated contact with the skull causes the formation of abnormal protein tangles. People with CTE suffer from headaches, memory loss, episodes of anger, and suicidal tendencies. Although the NFL has conceded there is a link between football brain injuries and brain disease, CFL Commissioner Randy Ambrosie recently stated, "We're continuing to look at all of it but right now I think the answer is we don't know yet. There is not conclusive evidence. The science is still unclear."

A group of players and their families have sued the NFL for covering up the dangers of concussions in the past. They say the league formed a committee to investigate the consequences of these injuries but downplayed the long-term dangers it learned about. The plaintiffs are seeking a settlement of \$5 billion to be paid out over 25 years. One of the lawyers points out that for

a business earning \$9 billion a year, it could be seen as reasonable to compensate former players who are disabled by brain injuries sustained on the job. In Canada, a \$200 million class action lawsuit has been filed over concussions and brain trauma.

Meanwhile, the NFL has tried modifying players' jobs by creating new rules for the game. The rules include requiring knee pads to reduce knee-to-head collisions and moving kick-offs up five yards to reduce the number of returns. Another change is that players will have fewer full-contact workouts during the preseason. In addition, when players experience symptoms associated with concussions, they may not return to play or practise until they have been cleared by a neurologist who is not affiliated with their team. These changes may reduce the injuries to players, but some players are concerned the changes will make the game less appealing to fans.

Questions

1. How do the rights of Canadian workers protected by occupational health and safety legislation (Chapter 2) apply to professional football players and the safety risks described here?
2. Will making football players' jobs safe achieve the ethical goal of the greatest good for the greatest number of people? Why or why not? Is there an ethical level of safety in football?

Sources: Devin Heroux, "It's time to say football is not a safe sport: CFL great challenges commissioner on concussions," *CBC Sports*, November 24, 2017, <http://www.cbc.ca/sports>; Heather Hansman, "Can This New Football Helmet Prevent Head Injuries?" *Smithsonian Magazine*, February 5, 2016, <http://www.smithsonianmag.com>; David DiSalvo, "Is the NFL Doing Enough to Prevent Brain Trauma? '60 Minutes' Probes for Answers," *Forbes*, November 16, 2015, <http://www.forbes.com>; William Weinbaum and Steve Delsohn, "Dorsett, Others Show Signs of CTE," *ESPN Outside the Lines*, April 5, 2014, <http://espn.go.com>; Joseph Serna, "Study Finds Chronic Brain Damage in Former NFL Players," *Los Angeles Times*, January 22, 2013, <http://articles.latimes.com>.

some control and social support, especially if they enjoy learning and are unafraid of making mistakes.³³ 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 air-traffic controller). Analysis of a job's cognitive demands also provides valuable information to support employees' mental health and well-being (see Did You Know?).

There are several ways to reduce a job's mental demands. One is to limit the amount of information and memorization 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 reduce 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, mental focus, and social interaction, so for every job, organizations need to evaluate whether their employees can meet the job's cognitive 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, browsing the Internet for information during a team member's business presentation, or repeatedly stopping work on a project to check email or text messages. In these cases, the mobile device and email or text 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. Research by a firm called Basex, which specializes in the knowledge economy, found that a big part of the information overload problem is *recovery time*; that is, the time it takes a person's thinking to switch back from an interruption to the task at hand. The Basex researchers found that recovery time is from 10 to 20 times the length of the interruption. For example, after a 30-second pause to check a social media feed, the recovery time could be five minutes or longer.³⁴

SUMMARY

LO1 Summarize the elements of work flow analysis and how work flow relates to an organization's structure.

Work flow analysis identifies the amount and quality of a work unit's outputs (products, parts of products, or services) and determines the work processes required to produce the outputs, breaking down tasks into those performed by each person. Finally, the work flow analysis identifies the inputs used to carry out the processes and produce the outputs. Within an organization, units and individuals must cooperate to create outputs, and the organization's structure brings people together for this purpose.

LO2 Discuss the significance of job analysis and identify the elements of a job analysis.

Job analysis is the process of getting detailed information about jobs. Job analysis provides the important foundation for carrying out many HRM responsibilities. Key elements of job analysis are job descriptions, which identify the tasks, duties, and responsibilities (TDRs) associated with the job, and job specifications, which provide the knowledge, skills, abilities, and other characteristics (KSAOs) that the jobs will demand of the people performing them.

LO3 Explain how to obtain information for a job analysis and review job analysis developments.

Information for analyzing an existing job often comes from incumbents and their supervisors. The federal government provides information about jobs in the National Occupational Classification (NOC), and tools such as the Position Analysis Questionnaire (PAQ) or the Fleishman Job Analysis System may be used. Analyzing teamwork and using competency models provides the potential to support talent management and facilitate a more robust integration of human resource functions with organizational strategy and performance.

LO4 Understand the different approaches to job design.

Four approaches to job design are identified including consideration of how to design (redesign) jobs that are efficient, motivating, and take into account both the physical and mental health and well-being of the people performing the jobs.

CRITICAL THINKING QUESTIONS

1. Assume you are the manager/owner of a local coffee house. 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 barista's job at the local coffee house. What are the outputs, activities, and inputs for that job?
3. Consider the "job" of university or college student. Perform a job analysis on this job. What tasks are required in the job? What knowledge, skills, abilities, and other characteristics (KSAOs) are necessary to perform those tasks?
4. Discuss how the following trends are changing the skill requirements for managerial jobs:
 - a. Increasing use of social media
 - b. Increasing global competition
 - c. Increasing use of remote work
5. Suppose you have taken a job as a training and learning specialist in a financial institution that has created competency models for all its positions. How could the competency models help you implement training, learning, and development initiatives for employees? How could the competency models help you succeed in your career at the financial institution?
6. Consider the job of a customer service representative for a telecommunications provider who handles calls from residential customers for billing inquiries and routine service requests. What measures can the 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? Would these considerations apply to the barista'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. Data scientist
 - b. UPS driver
 - c. Registered nurse
9. What are the trade-offs between the different approaches to job design? Which approach do you think should be weighted more heavily when designing jobs? Why?
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 cognitive considerations? What changes would you want, and why? (Or why do you *not* want the job to be redesigned?)

EXPERIENCING HR—DEVELOPING A PROFESSOR'S JOB DESCRIPTION AND JOB SPECIFICATION

Form small working groups (3–6 students is recommended). In your group, develop a job description for your professor's job. Use your knowledge and assumptions about the job's tasks, duties, and responsibilities. If you have been given time for research, review the chapter for additional ideas on where to gather information for your job description, and use it to improve your job description. Then use your completed job description as a basis for developing a job specification for your professor's job.

With the whole class, share which tasks, duties, and responsibilities you included in your job description and

what you included in your job specification. Discuss what requirements you define as important and what your professor defines as important. Ask your professor how closely your job description and job specification match the school's actual expectations. Was your professor given a job description? Would professors at your school be more effective if the school used the job description and job specification written by you and your classmates? Why or why not? How would you adjust your team's job description and specification, based on what you learned from this discussion? Turn in your job description and job specification for credit on the assignment.

CASE STUDY: EVIDENCE-BASED HRM

Analytics Drive Success at United Parcel Service (UPS)

United Parcel Service (UPS) is one of the world's largest package-shipping companies, so saving a tiny bit of gasoline on every truck route can generate enormous savings, in both expenses and impact on the environment. For example, reducing each route by 1.6 km (1 mile) per day for a year can save the company about 162 million km (100 million miles) per year, a reduction of carbon emission of 100,000 tonnes and a cost saving of about \$50 million. Thus, efficiency is a major factor in work design. UPS keeps improving its ability to gather, analyze, and apply data to making every aspect of package handling use fewer resources.

Some of its detailed requirements once included requiring drivers to hook their truck keys over one finger instead of stashing them in a pocket. This task was updated when drivers were provided with a digital-remote fob to wear on their belts. With the keyless systems, drivers stop the truck and press a button to turn off the engine and unlock the bulkhead door. This change saves 1.75 seconds at each stop. That's equivalent to an average of 6.5 minutes per driver per day. Besides saving time, the changes save motions by the driver, reducing fatigue.

Recently, the company began using a system called ORION (On-Road Integrated Optimization and Navigation).

The ORION system gathers data from customers, vehicles, and drivers' handheld mobile devices. It analyzes the data—even times for pickup and delivery when customers have special requests—and designs routes for each driver to use the minimum time and fuel, driving the minimum distance.

According to UPS, once fully implemented, ORION is expected to save the company \$300 to \$400 million a year. The company hopes that ORION will eventually do even more to improve outcomes—for example, updating routes when accidents or construction sites cause traffic congestion. With results like these, it is easy to see why UPS invested years to develop the ORION system. The challenge for managers is to find drivers who are willing to commit to a system in which their every turn is planned by a computer and to keep those jobs engaging.

Questions

1. What benefits does UPS derive from using ORION to help it make drivers' work more efficient?
2. What challenges does the system pose for drivers and their managers?

Sources: "ORION Backgrounder," UPS Press Room, January 30, 2018, <https://pressroom.ups.com>; Steven Rosenbush and Laura Stevens, "At UPS, the Algorithm Is the Driver," *Wall Street Journal*, February 16, 2015, <http://www.wsj.com>; Thomas H. Davenport, "Big Brown Finds Big Money from Big Data," *Wall Street Journal*, April 9, 2014, <http://blogs.wsj.com>; Richard Waters, "Big Data Sparks Cultural Changes," *Financial Times*, March 25, 2014, <http://www.ft.com>; Mary Schlangenstone, "UPS Crunches Data to Make Routes More Efficient, Save Gas," *Bloomberg News*, October 30, 2013, <http://www.bloomberg.com>; Jennifer Levitz, "Deliver Drivers to Pick Up Pace by Surrendering Keys," *The Wall Street Journal*, September 16, 2011, <http://online.wsj.com>.

CASE STUDY: HRM SOCIAL

With Effective Analysis, Work Isn't *Just* a Game

Job analysis can support one of the hot trends in business, called *gamification*. To gamify work, organizations use elements of games designed to yield better results, and they apply them to jobs to enable stronger performance. For example, they observe how runners and cyclists are motivated when they can share their routes and data such as duration, distance, and speed with their friends on social media, or how teams of players collaborate to defeat an enemy in an online game. A "leaderboard" displaying a list of the top scorers also is a widely used tool to motivate players to improve and earn a place on the list.

Employers can easily create a leaderboard of top salespeople, ask employees to post their progress on a team project, or award badges for completing training modules. But when a gamification effort is just a matter of adding playful features to the company's internal website, employees may ignore it. Well-planned gamification helps employees achieve goals that are relevant to their own and their organization's success. This is where job analysis comes in, by pinpointing what employees should be accomplishing and what skills and resources they need. Gamification works when it aligns with job requirements

and the learning of relevant skills. For example, Dominos has transformed its training to make pizzas into a web-based game with achievements, points, and levels.

In the United Kingdom, the Department of Work and Pensions (DWP) wanted its employees to become more active in developing useful ideas for innovation. To gamify this aspect of employees' jobs, the company set up a collaboration site on its internal network. Employees are encouraged to submit ideas and vote on the ideas they think are most valuable. As ideas earn votes, they move up a leaderboard, and the company acts on them. Coming up with an idea that wins votes is exciting; seeing it move up the

leaderboard is even more motivating; and of course, seeing it make a change for the better is the best prize of all.

Questions

1. Suppose you are a human resources manager at a company that is going to gamify the job of its salespeople. How would job analysis help you advise the team on which behaviours to reward?
2. In the same scenario, how would job analysis help you advise the team on which kinds of rewards to incorporate?

Sources: M. Teresa Cardador, Gregory B. Northcraft & Jordan Whicker, "A theory of work gamification: Something old, something new, something borrowed, something cool?," *Human Resource Management Review* 27 (2017), pp. 353–365; Tony Ventrice, "What the Future of Gamification in the Workplace Looks Like," *Fast Company*, February 4, 2015, <http://www.fastcompany.com>; Brian Burke, "Why Gamification's Not a Game," *CIO Journal*, May 6, 2014, <http://blogs.wsj.com>; Farhad Manjoo, "High Definition: The 'Gamification' of the Office Approaches," *Wall Street Journal*, January 12, 2014, <http://online.wsj.com>; Meghan M. Biro, "Five Ways Leaders Win at Gamification Technology," *Forbes*, September 15, 2013, <http://www.forbes.com>; Cliff Saran, "A Business Case for Gameplay at Work," *Computer Weekly*, August 20–26, 2013, pp. 19–22.