

# Chapter 8

## Work Design

### Chapter Outline

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### **Job Specialization, Job Enlargement, And Job Enrichment**

While financial incentives provide extrinsic motivation, job design programs try to provide intrinsic rewards from the job itself by creating optimal levels of variety, responsibility, autonomy, and interaction. Carefully designed jobs that minimize wasted effort and maximize employee motivation improve productivity, attendance, and organizational effectiveness. Job satisfaction and overall life satisfaction are greatly influenced by the job demands and whether they match one's abilities and interests. Sometimes very simple job changes can make a big difference to employees.

The history of organizational behavior contains a continuous stream of job redesign programs, each with its own distinctive focus. For example, the construction of galleys as they were towed through the canals in the Arsenal of Venice (1104-1796) demonstrated the efficiency of assembly-line construction and specialized craft jobs. The cottage industry of the 15th and 16th centuries allowed workers to produce at home as independent contractors, occasionally with the assistance of family members. During the 18th and 19th centuries, self-directed work teams of skilled craftsmen worked together as autonomous groups in craft guilds such as the barrel makers, the hat makers, and the cordwainers (boot makers).<sup>1</sup>

Elements of these early job design programs are visible in recent programs such as “flexible manufacturing systems” that require workers with broad skills to work on alternating product lines, flexible work scheduling that allows workers to select their own working hours, and sociotechnical redesign where workers participate in redesigning both their social interactions and the work they do.

Other recent job design programs also use strategies of earlier periods, such as job rotation (moving employees from one job to another), job enlargement (combining previously fragmented tasks into one job), job enrichment (increasing job responsibility and the variety of tasks performed), self-directed work

teams (delegating a task to a work group and letting them decide how to do it), job sharing (having two people share one job), and telecommuting (allowing workers to work at home with a computer and telephone).

Two major strategies of job redesign are *job specialization* (sometimes called job simplification), and *job enlargement*. These two strategies are almost exact opposites. Job specialization involves simplifying a job by reducing the number of elements performed by the worker. Job enlargement involves making a job more complex by combining elements to increase the number of activities performed by each worker.

## **Job Specialization**

The job specialization versus job enlargement controversy has a long history. One of the major themes of the industrial revolution was task specialization: complex jobs were divided into separate tasks and assigned to separate individuals. Indeed, the history of the industrial revolution was the history of task specialization. When the production of a product was separated into many highly specialized tasks, manufacturing was taken out of the craft shops and brought into the factories. One of the earliest descriptions of the advantages of task specialization was Adam Smith's book, *The Wealth of Nations*, published in 1776. Smith described how one person could make twenty ordinary pins per day, whereas ten specialized workers could make forty-eight thousand per day.<sup>2</sup>

**Scientific Management.** Although the modern factory system existed throughout most of the nineteenth century, the development of highly specialized jobs became much more widespread at the end of that century, thanks to the scientific management movement. Under the leadership of Frederick Winslow Taylor, scientific management significantly changed the practices of management from traditional “handed down” methods to carefully analyzed tasks, methods, and piece-rate incentives.<sup>3</sup>

Scientific management involves a detailed analysis of each task to identify the best way of performing it. The goal is to find the ideal method for reducing fatigue, eliminating wasted motions, and maximizing productive efficiency. The ideal timing of rest periods is studied to reduce fatigue, changes are made in the equipment, such as large shovels for loading light materials and small shovels for loading heavy materials. The workers are “scientifically” selected to match job requirements with the workers’ abilities. Piece-rate incentives are established to motivate employees to perform highly-specialized repetitive tasks.

One of the most popular illustrations of Taylor's work was the study of handling pig iron at Bethlehem Steel Company in the 1890s. For years Bethlehem Steel had been dumping pig iron in an open field as a by-product of its smelting process. During the Spanish-American War, however, the price of pig iron increased enough to create a market for it, and the mountains of pig iron needed to be loaded onto railroad cars. When Taylor first analyzed the task he found a group of seventy-five men working at the rate of 12 1/2 tons per man per day. By calculating the ideal walking speed and the percent of time a worker needed to be free of a load to avoid excessive fatigue, Taylor designed a method of increasing productivity almost fourfold. By following Taylor’s instructions of when to lift, how fast to walk, and when to rest, the workers succeeded in loading 47 1/4 tons per day, and found that the new method was no more exhausting than the old method.

To gain the cooperation of workers, Taylor proposed a differential piece-rate incentive system that paid a low piece-rate for substandard workers and a higher piece-rate for those who exceeded the standard performance. By following his procedures and observing the prescribed rest pauses, Taylor claimed that the workers reported less fatigue, even though they were performing three or four times the volume of

work. Taylor argued that scientific management was in the best interests of the company, since it reduced labor costs; it was in the best interests of the workers, since it increased their wages; and it was in the best interests of society, since it increased the production of consumer goods and improved the overall economy.<sup>4</sup>

Although Taylor is frequently criticized for ignoring the feelings of workers and focusing only on task efficiency, this criticism is unjust and overlooks the breadth of his strategic vision for scientific management. Taylor clearly recognized the need for a cooperative relationship between managers and workers and the powerful influence of cohesive group norms. Indeed, the Taylor Society's mission statement—the Aims of Scientific Management—published in 1929 suggests that he also recognized the importance of analyzing competitive market forces and the need for strategic alignment.<sup>5</sup>

Perhaps the most colorful contributors to scientific management were Frank B. and Lillian M. Gilbreth, the parents of twelve children and the topic of a popular movie and book, *Cheaper by the Dozen*.<sup>6</sup> Their work focused on improving task efficiency by using motion films with a clock or a stop watch to time basic motions, called “therbligs” (Gilbreth spelled backwards). For example, after studying bricklaying Frank Gilbreth developed an improved method that reduced the number of motions required to lay interior brick from eighteen to four and one half motions per brick, which increased the rate of brick laying from 120 to 350 bricks per hour.<sup>7</sup>

The principles of scientific management significantly increased manufacturing productivity in the early 1900s. Many of these same principles are still used in job redesign, such as time and motion studies, work simplification, piece-rate incentives for individuals or groups, and error analysis to improve quality. After Taylor participated in Interstate Commerce Commission hearings in 1911, knowledge of scientific management quickly spread to other countries, especially France, Italy, Germany, Holland, Russia, and Japan.

**Ergonomics.** The professional disciplines that study job design include industrial psychology, human factors engineering, and ergonomics, sometimes called biotechnology. Ergonomics is that aspect of technology concerned with the application of biological and engineering factors to problems relating to the mutual adjustment of people and machines. Professionals in ergonomics are concerned with the adaption of technology to the betterment of productive efficiency and human life.

An illustration of ergonomics is research on the health problems associated with working at a computer terminal. People who work long continuous hours at a computer terminal often experience a variety of problems such as carpal tunnel syndrome, arm and shoulder muscle cramps, back strain, and eye fatigue. Concern has also been expressed about the possibility that radiation from the video display terminal (VDT) causes birth defects, cancer, or eye cataracts. Although research indicates that the radiation from the VDT is no more harmful than emissions from an ordinary electrical appliance, the physical problems caused by repetitive motions can be quite serious, especially back and wrist problems.<sup>8</sup> Through ergonomic research, keyboards have been redesigned and wrist braces have been developed to reduce the incidence of carpal tunnel syndrome and special chairs have been designed to reduce back strain by providing lumbar support, adjustable arm rests, and an adjustable front edge.

**Advantages of specialization.** The advantage of job specialization is greater efficiency. Since the early writings of Adam Smith and Charles Babbage, specialized jobs have been known for substantially increasing both quantity and quality performance for the reasons summarized in Exhibit 8.1.

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## Exhibit 8.1 Advantages of Job Specialization

1. *Learning time.* Training time is dramatically reduced, since the worker only masters a small segment of the job. Complex and highly sophisticated products can be produced by relatively unskilled workers who are required to master only the skills needed for their particular job rather than the entire production process.
2. *Time spent changing jobs.* Workers performing highly specialized jobs are able to perform the same repetitive motions without losing time changing from one activity to another. Workers who are required to perform a variety of tasks are less efficient because of the time required to change their physical position, move from one station to another, or pick up different tools.
3. *Increased proficiency.* By performing the same repetitive activity, workers are able to develop greater proficiency and speed in their work. Practicing the same motions time after time helps workers develop habits and work more rapidly.
4. *Development of technology.* Highly specialized jobs are more conducive to the development of new machines and unique tools to help workers eliminate wasted motions, perform several activities simultaneously, or perform each activity more rapidly.
5. *Greater precision and control.* When each worker performs a small definable task, it is easier for management to observe the quantity and quality of performance, detect errors, and pay each worker for the exact amount produced. Supervisors have better control over workers, since deviations from standards can be easily recognized and corrected.

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The advantages of job specialization can be seen in companies that use assembly line procedures. In the sewing industry, for example, one company has 425 employees; only 120 of these employees are sewing machine operators, and the remainder work in other departments such as shipping, receiving, and cutting. All the jobs in this company are highly specialized, and each worker performs the same repetitive activity hundreds of times each day. Rather than using scissors to cut cloth, several dozen layers of material are rolled onto a large table and are cut simultaneously by a cutter who uses a specialized cutting tool. The materials then go from operator to operator along an assembly line. For example, one operator sews two button holes on the back of each dress and is paid \$.38 per dozen dresses. Each bundle of one dozen dresses is then passed to the next operator, who sews two buttons adjacent to the holes and receives \$.39 per dozen. Two operators tend a row of specialized machines that are guided by a computer program, as they make ruffles and special design markings.

Using highly specialized jobs, this sewing company produces an average of 7,000 dresses per day. If job specialization were eliminated and each worker had to design, cut, and sew an entire dress, even experienced workers could not make two dresses per day. These data illustrate the advantages of job specialization. With job specialization, the employees produce over seven thousand dresses per day; without it, they could produce less than seven hundred dresses, and these dresses would lack the ruffles, special design markings, and periodic design changes. The enormous advantages of job specialization have led some to conclude that the real reformers and revolutionaries of our society who have significantly improved the quality of life are not the leaders of revolts who overthrow oppressive

governments, but the leaders of industry who mass-produce abundant and inexpensive consumer goods that raise the standard of living.<sup>9</sup>

**Disadvantages of specialization.** The major disadvantage of task specialization is that highly specialized jobs are extremely repetitive, causing workers to feel bored and alienated. Workers are expected to perform like machines, they do not see the final product, and they never have the satisfaction of pointing to a finished product and saying, “I made that myself.”

The disadvantages of specialization – boredom and worker dissatisfaction – were apparent from the beginning. These problems were ignored, however, as the productive efficiency and increased profitability of task specialization led to the widespread adoption of assembly line manufacturing. During the 1950s a large-scale study of assembly line work, particularly in the auto industry, identified a list of criticisms, as shown in Exhibit 8.2.

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### Exhibit 8.2 Disadvantages of Job Specialization on Assembly Lines

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| <ol style="list-style-type: none"><li>1. <i>Mechanical pacing.</i> The production rate is determined by the speed of the conveyor line rather than by the workers’ natural rhythm or inclination.</li><li>2. <i>Repetitiveness.</i> Workers are required to perform the same short work cycle over and over each day. Most work cycles are less than one minute, and workers may be required to perform the same activity over five hundred times a day.</li><li>3. <i>Low skill requirements.</i> Highly specialized jobs prevent workers from developing and displaying a variety of skills and talents.</li><li>4. <i>Concentration on only a fraction of the product.</i> Each job represents only a small fraction of the total product, and workers cannot see the final product.</li><li>5. <i>Limited social interaction.</i> Even though they work as a team, the workers feel socially isolated because they are physically separated along an assembly line. The speed of the line and the noise levels prevent workers from interacting or developing meaningful relationships.</li><li>6. <i>Elimination of the need to think.</i> The production processes, equipment design, and use of tools are determined by staff specialists to maximize operating efficiency.</li></ol> |
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See C. R. Walker and R. Guest, *The Man on the Assembly Line* (Cambridge, Mass.: Harvard University Press, 1952) pp. 71-83.

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The effects of depersonalization and loss of control in auto assembly lines was dramatically highlighted in 1972 by a wildcat strike at the General Motors assembly plant in Lordstown, Ohio. This new plant was an engineering showplace in which jobs had been carefully designed using the latest information in engineering technology, and even using computers. This unauthorized strike lasted twenty-two days and attracted public attention to the workers’ dissatisfaction with assembly line work. The issues were not pay, benefits, or any of the traditional grievances; the workers went on strike over what they called dehumanizing work. Chevrolet Vegas were coming off the assembly line at the rate of 101.6 per hour – a pace that required each worker to perform the same specialized task every thirty-six seconds. The assembly line had been recently designed to represent the best in engineering knowledge, and the workers were mostly young employees who had the health and stamina to make Lordstown the most productive assembly-line in the world. But for twenty-two days they produced nothing. The initial complaint was

that the line was moving faster than it should. Further examination, however, concluded that the problem was the very existence of a line. All assembly-line work was condemned as monotonous, boring, and dehumanizing.<sup>10</sup>

## **Job Enlargement and Job Enrichment**

During the 1940s the trend toward highly specialized jobs was countered by a trend toward job enlargement. The proponents of job enlargement argued that it created greater satisfaction and productivity. Even though enlarged jobs were less efficient than specialized jobs, the proponents argued that increased motivation more than compensated for the loss in efficiency. Job enlargement gradually came to be seen as the solution to many organizational problems. By the 1970s, job enlargement was being proposed as the primary cure for such diverse forms of worker discontent as job dissatisfaction, labor grievances, careless work, and drug abuse.<sup>11</sup>

**Job enlargement.** Job enlargement consists of making a job larger in scope by combining additional task activities into each job through what is called “horizontal expansion” or “loading.” An example of job enlargement would be to allow a sewing machine operator to sew both sleeves on a piece of clothing rather than just one. Job enlargement tries to increase task variety by extending the length of the work cycle, which refers to the length of time required to complete a task from start to finish before the worker begins the same activity again. In addition to lengthening the work cycle, some job enlargement programs allow workers to determine their own pace of work (within limits), to serve as their own inspectors by giving them responsibility for quality control, to repair their own mistakes, to be responsible for their own machine setup and repair, and to select their own work procedures.

**Job enrichment.** The greatest criticism of job enlargement is that it does not really change the essential nature of the task; sewing two sleeves is not materially different than just sewing one. To make a noticeable change in the job requires vertical rather than horizontal loading; the job must be redesigned to include functions performed by management.

Many job enrichment programs extensively rely on Frederick Herzberg's hygiene-motivator theory. Herzberg classified work characteristics as either hygienes or motivators and suggested that these two factors were as separate and independent as vision and hearing. He argued that the only way to make meaningful changes in work design is to improve the motivator factors rather than the hygiene factors.

In his research, Herzberg found that workers used different lists of job characteristics to describe times when they felt good versus bad at work. When describing what made them feel bad about their jobs they usually mentioned factors in the context surrounding the job, such as company policy and administration, supervision, salary, interpersonal relations, and working conditions. These factors were referred to as *maintenance factors* or *dissatisfiers* because they had the potential to make employees unhappy with their jobs, but lacked the potential to make them satisfied. Herzberg also labeled them *hygienes* to emphasize their preventive nature. When these context factors were present they prevented dissatisfaction. Thus, context factors = dissatisfiers = hygienes.

When employees described the times they felt especially good about their jobs, they tended to identify factors directly associated with the content of the job: achievement, recognition, the work itself, responsibility, and advancement. These content factors were directly associated with the task itself and were called *satisfiers* or *motivators*. Herzberg claimed that they were effective in motivating the individual to superior performance and effort. Thus, content factors = satisfiers = motivators.

Herzberg argues that meaningful job changes can occur only if the job is redesigned to include more of these seven motivator factors.<sup>12</sup>

1. *Accountability.* Workers should be held responsible for their own performance.
2. *Achievement.* Workers should feel that they are accomplishing something worthwhile.
3. *Control over resources.* If possible, workers should have control of their resources and costs. Cost and profit centers should be delegated to lower levels in the organization.
4. *Feedback.* Workers should receive direct and timely information from the job itself regarding their performance.
5. *Personal growth and development.* Workers should have the opportunity to learn new skills.
6. *Work pace.* Within constraints, workers should be able to set their own work pace and have the flexibility to schedule rest pauses and work breaks.
7. *Client relationships.* When possible, workers should develop a relationship with the customers who use the products they produce to know if they are satisfied.

Herzberg's theory guided the job enrichment and job redesign programs in many companies, such as AT&T, which conducted a series of nineteen generally successful experiments in job enrichment.<sup>13</sup> Job enrichment can make a significant change in a job. Unlike simple job enlargement, job enrichment seeks to improve both task efficiency and personal satisfaction by building into a job a greater scope for personal achievement and its recognition, more challenging and responsible work, and more opportunity for individual growth and advancement.

## Job Characteristics

In job redesign projects, managers need to analyze the characteristics of each job, called the *job scope*, and decide which characteristics to change. This analysis involves reviewing the range of activities performed by the worker and the types of decisions a job holder must make.

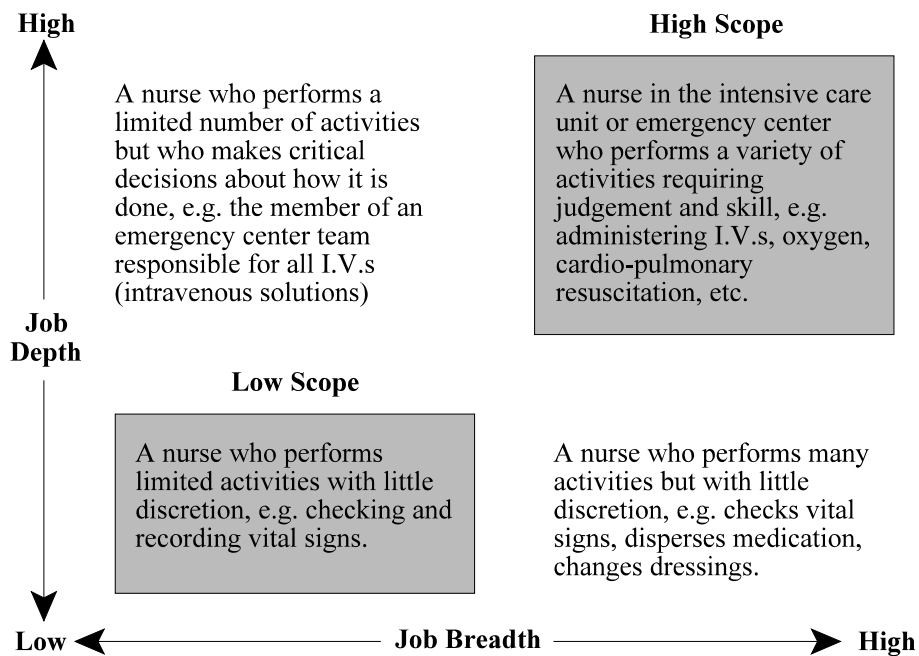
Job scope is defined by the breadth and depth of the job. *Breadth* refers to the number of different activities performed on the job, while *depth* refers to the degree of discretion or control the worker has over how these tasks are to be performed. Jobs are said to have a greater breadth if the individual is required to perform a wide range of different activities. In general, the greater the number of tasks performed and the longer it takes to complete the job, the greater is the job breadth.

Job depth refers to the degree of discretion or control the worker has over how these tasks are to be performed. Workers who have control over when they do the job, how it is to be done, and the order in which the activities are to be performed, are said to have jobs with greater depth.

Assembly line work is the classic example of jobs with low depth and low breadth. Assembly line workers perform the same repetitive activities with little variation and no control over when or how they perform them. Other jobs may vary from organization to organization in the depth and breadth of the job. For example, in some hospitals nursing jobs are highly specialized, creating very limited job breadth. At other hospitals, the nurses perform a wide variety of tasks, making for a very wide range of activities and greater job breadth. The nurses in intensive care units typically have greater job depth than the nurses in other units, since they have greater discretion in making decisions about the care of patients. These combinations of job depth and job breadth are illustrated in Exhibit 8.3

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### Exhibit 8.3 Job Scope of a Nursing Job

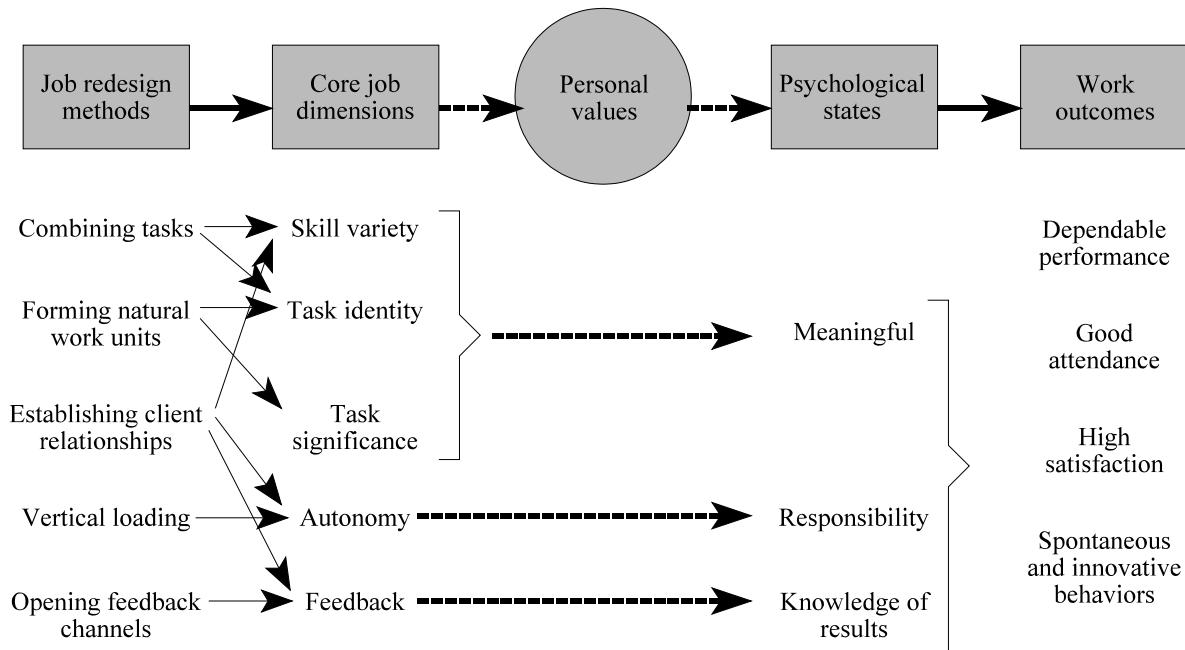


### Job Characteristics Model of Job Enrichment

The best conceptual framework for examining the effects of job enrichment on work attitudes and behavior is the job characteristics model.<sup>14</sup> This model explains the psychological impact of various job characteristics and predicts what effects the resultant psychological states will have on work attitudes and performance. The usefulness of a job enrichment program can be predicted from this model by analyzing how the program changes the core dimensions of the job and thereby influences the behavior of the worker. Questionnaires measuring each concept in the model have been developed and tested in numerous companies. The results indicate that the interactions specified in the model, as shown in Exhibit 8.4, are generally correct.<sup>15</sup>

**Exhibit 8.4 Job Characteristics Model**





**Work outcomes.** The model is explained best by starting at the outcome end and working backwards. Organizations desire four important outcomes from each worker.<sup>16</sup>

1. *Dependable performance:* high quantity and quality work.
2. *Good attendance:* low absenteeism and low tardiness.
3. *High satisfaction with work:* positive feelings about the job, the company, and the treatment received at work.
4. *Spontaneous and innovative behaviors:* doing more than is called for in one's formal job description, such as showing initiative, making creative suggestions, cooperating with fellow workers, and pursuing self-development and training.

These four outcomes are clearly in the organization's best interests. An organization that can elicit such behavior from its members will be more effective than an organization that cannot. Generally, these outcomes are also in the individual's best interest, since pay and other rewards are usually associated with good performance.

**Psychological states.** The desired work outcomes result from three psychological states, as shown in Exhibit 8.4. These three states represent the motivating force behind all activity (including nonwork activity, such as practicing a golf swing at a driving range).

1. *Meaningful.* The activity must have a purpose and be perceived as important and worthwhile.
2. *Responsibility.* Employees must believe that they are personally accountable for results and that their efforts will influence the outcome.
3. *Knowledge of results.* Employees need systematic and timely information about how well they are performing so they can make corrective adjustments if necessary.

When these three conditions are present, individuals are expected to feel good about their activities and perform well because of their own internal motivation. They are willing to continue performing the activity because of the positive internal feelings created by the activity itself. If any one of the three psychological states is missing, motivation will decline significantly. When all three are present, however, employees demonstrate dependable performance, good attendance, high satisfaction, and spontaneous and innovative behaviors.

**Core job dimensions.** The three psychological states are created by five core job dimensions, as shown in Exhibit 8.4. However, the relationships between the core dimensions and the psychological states are influenced by the personal values of the worker, as indicated by the dashed arrows. The five core dimensions include the following:

1. *Skill variety*: the degree to which a job allows workers to develop and use their skills and to avoid the monotony of performing the same task repeatedly.
2. *Task identity*: the degree to which a task consists of a whole or complete unit of work as opposed to a small, specialized, repetitive act.
3. *Task significance*: the degree to which a task has a significant impact on the organization, the community, or the lives of other people.
4. *Autonomy*: the degree to which workers are free of the direct influence of a supervisor and can exercise discretion in scheduling their work and in deciding how it will be done.
5. *Feedback*: the degree to which workers obtain evaluative information about their performance in the normal course of doing their jobs.

A questionnaire for measuring these five job dimensions is shown in Exhibit 8.5. According to the model, skill variety, task identity, and task significance contribute to the meaningfulness of a job, as indicated by the arrows in Exhibit 8.4. Responsibility and personal accountability are created by autonomy, the ability of workers to schedule their own work and decide how it will be done. Performance feedback provides employees with knowledge about the results of their efforts.

To measure the motivating potential of a given job, the five core characteristics can be combined algebraically into a “motivating potential score” (MPS). The MPS provides a single score measuring how well a job will provide high internal work motivation. The formula for the MPS is:

$$MPS = \frac{\textit{variety} + \textit{identity} + \textit{significance}}{3} \times \textit{autonomy} \times \textit{feedback}$$

According to the job characteristics model, a job high in motivating potential will create a higher state of internal work motivation than a job with a low motivating potential score.

**Job redesign methods.** Five job enrichment programs are proposed to improve the core job dimensions.

1. Combine tasks to eliminate highly specialized jobs and to make larger work modules, called *horizontal loading*.
2. Form natural work units – work teams – in which each person feels part of the team, and where jobs can be rotated among team members. Job rotation increases the variety of skills workers can use and contributes to greater task identity. Rotation can occur informally, such as when workers

trade assignments, or it can be a formal program, such as when workers are assigned to a new department.

3. Establish client relationships so workers will know who uses the products or services they produce and how the clients feel about their work.
4. Give workers greater authority and discretion by allowing them to perform functions previously reserved for higher levels of management, called *vertical loading*.
5. Open feedback channels so that information about the quality of performance goes directly to the employee performing the job.

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### Exhibit 8.5 Selected Questions from the Job Diagnostic Survey

Please describe your job as objectively as you can.

1. How much *variety* is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1 — 2 — 3 — 4 — 5 — 6 — 7

Very little; the job requires me to do the same routine things over and over again.

Moderate variety

Very much; the job requires me to do many different things, using a number of different skills and talents.

2. To what extent does your job involve doing a “*whole*” and *identifiable piece of work*? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a part of the overall piece of work, which is finished by other people or by automatic machines?

1 — 2 — 3 — 4 — 5 — 6 — 7

My job is only a tiny part of the overall piece of work; the results of my activities cannot be seen in the final product or service.

My job is a moderate-sized “chunk” of the overall piece of work; my own contribution can be seen in the final outcome.

My job involves doing the whole piece of work, from start to finish; the results of my activities are easily seen in the final product or service.

3. In general, how *significant or important* is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1 — 2 — 3 — 4 — 5 — 6 — 7

Not very significant; the outcomes of my work are not likely to have important effects on other people.

Moderately significant.

Highly significant; the outcomes of my work can affect other people in very important ways.

4. How much *autonomy* is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7

Very little; the job gives me almost no personal “say” about how and when the work is done.

Moderate autonomy; many things are standardized and not under my control, but I can make some decisions about the work.

Very much; the job gives me almost complete responsibility for deciding how and when the work is done.

5. To what extent does *the job itself* provide you with information about your work performance? That is, does the actual *work itself* provide clues about how well you are doing—aside from any “feedback” coworkers or supervisors may provide?

1 ——— 2 ——— 3 ——— 4 ——— 5 ——— 6 ——— 7

Very little; the job itself is set up so I could work forever without finding out how well I am doing

Moderately; sometimes doing the job provides “feedback” to me; sometimes it does not.

Very much; the job is set up so that I get almost constant “feedback” as I work about how well I am doing.

*Source:* J. Richard Hackman and Greg R. Oldham, “The Job Diagnostic Survey: An Instrument for the Diagnosis of Jobs and the Evaluation of Job Redesign Projects,” Technical Report No. 4, Department of Administrative Sciences, Yale University, May 1974, pp. 2-3.

This model provides a useful framework for diagnosing jobs and for deciding whether they ought to be enriched. The core dimensions represent the important areas of each job that need to be examined. If the decision is made to redesign a job, the model suggests some of the most appropriate changes that ought to be considered. In recent years, a broad assortment of changes have been tried and are frequently referred to as “quality of work-life” (QWL) programs.

Which is the best way to enrich a job? A review of thirty job enrichment studies where productivity was measured suggested that the most effective redesign method was opening feedback channels so that workers could learn how well they were doing from the job itself rather than from someone’s description of how well they were doing. A comparison of the studies which opened feedback channels with those that didn’t found that more feedback led to increased productivity, higher quality of work, and a decrease in absenteeism. Although opening feedback channels appeared to have the greatest impact, other redesign methods were also effective, especially if they were used in combination. This review also revealed that the productivity increases were related to the number of redesign methods that were used. All five redesign methods were used in eight studies, three or four methods were used in another eight studies, and only one or two methods were used in the remaining fourteen studies. The median increases in productivity were 10.2 percent, 7.7 percent, and 2.5 percent, respectively.<sup>17</sup>

**Personal values.** The job characteristics model recognizes that not everyone will respond equally to the core job dimensions. According to the model, skill variety, task identity, and task significance should contribute to the meaningfulness of a job. But whether an activity is actually perceived as meaningful depends on an employee’s personal values. Some people (such as social workers and school teachers who

complain of burnout) think their jobs are meaningless even though they contain extensive variety, identity, and significance. The same principle applies to assembly line work. Sewing pockets inside the waistbands of tennis shorts is a meaningful activity if you perceive it as a necessary step in producing a useful product. But if you think tennis shorts are worthless products consumed by a self-indulgent group of idlers in society, the same activity could be perceived as meaningless.

The job characteristics model, as it was originally proposed, claims that the effects of the core dimensions on the psychological states is moderated (or influenced) by a person's growth need strength. This moderator, derived from Maslow's need hierarchy, refers to whether the individual is primarily interested in satisfying lower-level survival needs or higher-level growth needs. People who are striving to satisfy their growth needs should respond more favorably to an enriched job. It is reasonable to expect, however, that many other personal values will also serve as moderator variables. Whether workers perceive a task as meaningful and whether they feel a sense of accountability or responsibility for it, depends not only on the core job dimensions, but also upon their own personal values.<sup>18</sup>

## Effects of Job Enrichment

Many studies have examined the effects of job enrichment programs on both organizational effectiveness and individual responses. The results have been both positive and negative, and part of this inconsistency seems to be explained by individual differences.<sup>19</sup>

### Organizational Effectiveness

Most of the early studies of job enrichment programs reported positive results. Although these reports were usually case studies that relied extensively on subjective impressions, more recent studies using better experimental designs have been almost as supportive. Higher levels of satisfaction and productivity are often achieved by adding variety, responsibility, and other enriching characteristics to specialized jobs.

A review of thirty-two job enrichment studies found that job redesign programs typically contribute to organizational effectiveness. The studies included in this review all assessed the impact of job redesign in terms of either measurable productivity, production quality, or absenteeism.<sup>20</sup> In thirty studies where productivity was measured the median result was an increase in production of 6.4 percent. In eleven of these thirty experiments, however, the results were zero or negative. The effects on quality were more encouraging; twenty-one studies measured quality and only one experiment reported a decline. The median result was a 28 percent increase in production quality. Absenteeism was measured in only nine experiments, and the median result was a decrease of 14.5 percent in absenteeism. All in all, the evidence suggests that job redesign frequently improves production quality, modestly reduces absenteeism, and occasionally increases productivity.

The effects of job redesign, however, are not permanent. At least one study found that the desirable results which were so encouraging after the first five months had essentially disappeared at the end of fourteen months.<sup>21</sup> Escalating levels of challenge may be required to prevent boredom and frustration. The temporary nature of these results underscores the disturbing question asked by those who have tried job enrichment: "What can we do next to keep our employees challenged and interested in their work?"

## Criticisms of Job Enrichment

Some reviews of job enrichment are not favorable. One review is very critical of job enrichment as an attempt by behavioral scientists to impose their values on others. To illustrate the point, a statement is quoted from a union newspaper denouncing General Electric's job enrichment program: "Makes no difference how you slice it, it's still monotony and more speedup."<sup>22</sup>

Some of the strongest criticisms of job enrichment come from labor unions. One union leader makes the following statement, "If you want to enrich the job, enrich the paycheck . . . If you want to enrich the job, do something about the nerve-shattering noise, the heat, the fumes . . . Worker dissatisfaction diminishes with age and that's because older workers have accrued more of the kinds of job enrichment that unions have fought for – better wages, shorter hours, vested pensions, a right to have a say in their working conditions, the right to be promoted on the basis of seniority, and all the rest. That's the kind of job enrichment that unions believe in."<sup>23</sup>

Another criticism of job enrichment programs is that some jobs are already too enriched. "When I read this stuff on job enrichment it makes me shake my head. My job is already too enriched for me or anyone else. Everyday I'm being called on to make decisions I'm not prepared to make. I don't have enough time and I've got too many things to do. It's frustrating to be spread so thin."<sup>24</sup>

Many of these criticisms about job enrichment are well deserved. The success of a job enrichment program depends not only on its design, but also on how well it is implemented. Even if appropriate job changes are made, the change may be resisted if it is not implemented properly. Six major implementation problems are described in Exhibit 8.6. Many job enrichment failures could have been avoided if the conditions had been more carefully diagnosed and the job enrichment program more carefully implemented. However, some problems cannot be eliminated, no matter how well implemented they are.

There are also limits to how much some jobs can be improved; work is still work even in an enriched job. Ford Motor Company produced a film called *It Ain't Disney* to help its workers recognize the limits of their job redesign programs. The central message of the film was "Listen folks, we've really tried to enrich the jobs and improve the working conditions. But there is only so much we can do. The jobs are still hard work with much repetition and we can't eliminate it all."

## Alternative Schedules of Work

Since the Great Depression, the typical workweek for most employees has been a five-day, forty-hour week. Five eight-hour days from Monday through Friday have generally represented the standard workweek in the minds of most people. However, numerous exceptions to the standard workweek have always existed, particularly in the farming and transportation industries. In recent years, many employees enjoy considerable flexibility in scheduling the hours they work.

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### Exhibit 8.6 Problems in Implementing a Job Enrichment Program

1. *Inadequate diagnosis before jobs are redesigned.* Some job enrichment projects have tried to enrich jobs that did not need to be changed because they were adequately enriched or already too complex. Because of a faulty diagnosis, some jobs have been changed improperly.
2. *The work itself remains unchanged.* Some job redesign efforts involve such trivial and minor changes that the work itself is not actually changed.
3. *Failure to consider unexpected effects.* Changes in one part of an organization almost always entail consequences for other parts of the organization. The benefits of a job enrichment program may be offset by the dysfunctional consequences to the nonenriched jobs.
4. *Inadequate evaluation.* Most job evaluation programs are not adequately evaluated, and managers have inadequate information to refine or make continued improvements in the job design program.
5. *Lack of training in job enrichment.* Managers may receive inadequate training in job redesign and feel overwhelmed by its demands. They may also lack the knowledge required to deal with the technology and complexity of the redesign.
6. *Creeping bureaucracy.* Many job enrichment efforts are casually inserted into the existing management process without being carefully integrated into the organization. As a consequence, the organization tends to revert to its old, established methods when the job enrichment program fails to achieve its expected results.

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Five of the most popular alternatives to the standard workweek include flextime, permanent part-time, job sharing, the compressed workweek, and telecommuting. These five alternative patterns of work have both advantages and disadvantages. They are not universally desirable to all workers, and they are not feasible for some jobs. But the fact that they are being implemented in so many companies indicates the concern of top managers for improving the quality of life at work. The major reason for trying these alternatives is that they contribute to the quality of life by being more consistent with the unique circumstance of workers and the non-work demands of their lives.

## **Flextime**

An attractive alternative to the standard workweek is the concept of flexible working hours, or flextime. Under flexible work hours, employees choose when to arrive at work and sometimes when to depart, subject to limits set up by management. Most companies have a core period when all employees are expected to be at work with flexible hours at both ends of the workday.

Flextime is not appropriate for jobs that require continuous coverage, such as receptionist, switchboard operator, and bus driver unless employees cover these jobs during their core hours and perform discretionary activities during their flexible hours. Interdependent jobs, such as assembly line jobs, also are not appropriate for flextime. Some of the major advantages and disadvantages of flextime are presented in Exhibit 8.7.

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### **Exhibit 8.7 Advantages and Disadvantages of Flextime**

Advantages	Disadvantages
1. Tardiness is virtually eliminated since employees are not tardy unless they miss the core hours.	1. Communication problems increase since employees frequently need to communicate during the flexible hours.
2. Absenteeism is reduced, especially the one-day absences caused by employees deciding to miss work rather than come to work late.	2. Keeping attendance records can become a problem. Employees do not like time clocks, but some tend to misrepresent their hours when they are on their own.
3. It is easier to schedule personal appointments and personal time.	3. If administrative decisions need to be made throughout the day, providing supervision for twelve to fifteen hours a day can become a problem.
4. Employees can schedule their work to match their biorhythm or internal clock. Some people work best early in the day, and others work better late in the day.	4. Legislation presents some obstacles to the use of flextime since overtime pay is required for certain jobs that exceed the standard workweek.
5. It reduces traffic congestion and creates less stress on getting to work on time.	5. Utility costs may be higher with flextime because of longer operating hours.
6. It provides greater flexibility in handling uneven workloads.	
7. It provides increased customer service because the company is open longer.	

Studies on the effects of flextime indicate that it creates more favorable job attitudes. Employees say that flextime makes them feel more trusted, and they report higher levels of satisfaction. The effects on productivity are not as clear. Most studies have indicated that flextime either increases productivity or has no effect. However, these studies generally relied on employees' perceptions of their performance rather than objective measures of productivity. Nevertheless, very few companies that have tried flextime have reported undesirable results.<sup>25</sup>

Many companies have found that most employees do not make extensive use of flextime when the option is offered to them. Even on jobs where flextime is appropriate and employees are free to set their own work hours, companies find that employees tend to follow the standard workday and generally vary their starting times by fewer than plus or minus thirty minutes. The typical response of most employees is to start work a few minutes earlier. But even if employees do not use flextime much, they like having the option of flexible hours.

### **Permanent Part-Time**

Part-time employment is defined as a job consisting of less than thirty-five hours per week and is usually considered temporary work. However, many part-time employees do not consider themselves temporary.



Working less than thirty-five hours per week is a permanent position for them. In recent years the part-time work force has increased significantly; more workers are choosing to work less than full-time.

One of the reasons for the growth of permanent part-time employment is that it fits the needs of people who prefer working shorter hours. Mothers who have children at home and older employees who have less stamina are two groups who especially prefer part-time employment. Part-time positions have increased the size of the work force. Many individuals who are unable to work full-time are attracted to part-time work. The advantages of part-time employment include (1) greater job satisfaction for those who need to work but do not want to work full-time, and (2) greater flexibility in hiring employees to meet erratic work requirements.<sup>26</sup>

One disadvantage of part-time employment is that it creates additional administrative and scheduling difficulties – half-time employees require almost as much supervision as full-time employees. The greatest problem, however, concerns benefits coverage. Although some part-time workers are covered by their spouses' benefit program, those who are not covered cannot afford their own coverage and it is very costly for companies to provide full coverage for part-time workers.

## **Job Sharing**

One of the most popular variations of permanent part-time employment is job sharing. Here a full-time position is divided into two part-time positions, and the duties and responsibilities of the job are assigned to two separate employees. In some cases the job functions of the two individuals may be distinctly different, since each may be responsible for separate activities. Accountability for the total job may be divided between the two sharers, or both may assume equal and full accountability. Job sharing usually involves a splitting of the responsibilities and the accountability between the sharers. When both part-time employees are held responsible for the whole job it is sometimes called “job pairing.”

Job sharing has been tried successfully among many different employees, including clerical and office workers, elementary school teachers, district attorneys, librarians, and various production-level workers. In most instances job sharing has been initiated by two individuals who submitted a proposal to split a job in response to a job opening. Two mothers, for example, prepared a proposal to split the job of an elementary school teacher. They convinced the school district that their combined efforts and unique contributions were superior to what was offered by any of the alternative full-time applicants for the job. Some of the major advantages of job sharing include these:<sup>27</sup>

1. Productivity is usually higher because two people sharing one job have higher levels of energy and enthusiasm than one full-time person. In an early study of job sharing among social workers it was found that half-time social workers handled 89 percent as many cases as full-time workers.<sup>28</sup> Other studies have also reported greater productivity for job sharers. However, most of the evidence relies on subjective perceptions.
2. Increased flexibility in scheduling work assignments allows for better coverage during peak periods.
3. Reduced absenteeism and turnover have resulted from job sharing. One of the major causes of absenteeism is the need for more personal time than a forty-hour workweek allows. Job sharing not only provides more personal time but also provides the option of trading hours between partners during times of crisis or illness. Reduced turnover rates are probably an indication that

part-time work is more consistent with the personal needs of employees as they try to balance competing responsibilities and interests.

4. Job training is improved by job sharing. When one member of a team quits, the remaining partner can provide on-the-job training and coaching for the new employee. The remaining partner also provides continuity during the transition period.
5. Better employment options are provided through job sharing for people who cannot perform a full-time job. Job sharing provides greater employment opportunities not only for parents but also for individuals who are older, handicapped, or disabled, part-time employment in the form of job sharing may provide meaningful employment to people who might otherwise be unable to work.

Job sharing has similar disadvantages as part-time employment. The most serious problem again concerns the allocation of benefits. Generally benefits are prorated to each partner according to the percentage of the job that each performs. If they want full benefits, job sharers are sometimes allowed to pay the additional costs themselves; however, job sharers are usually surprised at the cost of benefits and sometimes prefer to take fewer benefits. A growing number of companies have decided to provide full benefits to job sharers.

### **Compressed Workweek**

The compressed workweek, consists of scheduling a full-time job in fewer than five workdays per week. The most typical compressed workweek consists of four workdays of ten hours per day. This alternative is usually referred to as the 4/40 alternative. A workweek that is further compressed consists of three twelve-hour days; however, this 3/36 alternative has not been very popular except in some hospitals.

The idea of a compressed workweek was quite exciting when it was first tried in a few companies. Working a couple of extra hours each day did not seem like much of an added burden since many employees frequently worked overtime anyway. The trade-off was a free day with no work. The compressed workweek was typically scheduled to free either a Friday or a Monday to provide an extended weekend. The advantages of a compressed workweek include these:

1. It reduces the time and costs of commuting to work.
2. It increases the leisure time of employees.
3. It creates greater job satisfaction and morale for employees who like it.
4. It reduces the setup and cleanup costs on certain jobs.

In a field experiment, it was found that the initial enthusiasm for a 4/40 workweek led to increased employee satisfaction and performance. After two years, however, the novelty and enthusiasm for change disappeared and performance had returned to original levels.<sup>29</sup>

The disadvantages of a compressed workweek usually outweigh the advantages. The early proponents of the compressed workweek expected it to increase productivity and lead to higher quality work. The results have suggested just the opposite. Working more than eight hours per day generally increases

fatigue. An extended schedule of ten-hour days (beyond two or three weeks) often results in less total productivity during a ten-hour day than during a regular eight-hour day. Heavy physical work or taxing mental work is generally not suited to a compressed workweek schedule. Accidents and safety violations are likely to increase with a compressed workweek schedule because of fatigue and carelessness.<sup>30</sup>

The compressed workweek is not popular with some employees. Even though the initial response to a compressed schedule is usually favorable, many dislike it after a short time. This schedule is not convenient for working parents who want a steady daily routine that enables them to handle family responsibilities, for older employees who are prone to fatigue, or for young employees who do not want long work schedules to interfere with their social lives. A compressed workweek appears to be most suitable for middle-aged males, especially those who want to hold a second job. Compressed workweeks usually lead to increased moonlighting.

Compressed workweeks are best-suited for jobs where the responsibility to initiate action comes from the job itself rather than from the worker. Security guards, hospital nurses, and refinery workers who monitor dials are examples of jobs where actions are made in response to a job demand. These jobs are better suited for compressed workweeks than physically tiring jobs that require the worker to initiate action, such as most construction jobs.

### **Telecommuting**

For some people, the epitome of flexible work is “*telecommuting*”-- working at home or at a satellite office and communicating with the home office electronically. Technological advances have made it possible for many jobs to be performed at home more effectively than at the office. Working at home eliminates the disadvantages of lengthy commutes to work and reduces the number of unnecessary interruptions, unless other family members are present. Some companies have found that telecommuters actually work more hours, they are more productive, and they are easier to manage. The disadvantage of telecommuting is the loss of social and intellectual stimulation that come person-to-person communication. Face-to-face conversations satisfy affiliation needs and help employees feel part of a group. Creative ideas and improved work procedures occasionally come from such casual conversations.

## **Discussion Questions**

- 1 Describe the advantages and disadvantages of job specialization. Are repetitive jobs necessarily boring? Why are some jobs with a short work cycle, such as bingo and playing slot machines, not perceived as boring? Describe a repetitive activity you perform and explain your reactions to it.
- 2 What are the benefits of job enrichment? Identify a job you have done in the past and use the Job Characteristics Model to explain how you would redesign and possibly enrich that job.
- 3 How important is it to you to have a job that provides flexible work hours? Which jobs are particularly well suited for flex-time, permanent part-time, job sharing, compressed work-week, and telecommuting? Which jobs are poorly suited for each of these alternative patterns of work?

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