

# **Human Resource Planning: Forecasting Demand and Supply**

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## **Abstract**

Human resource planning begins with a forecast of the number and types of employees needed to achieve the organization's objectives. Planning also involves job analysis, which consists of the preparation of job descriptions and job specifications. Of particular concern for today's executives is the growing body of laws regulating the human resource management process.

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## **Human Resource Management Process**

The overall human resource management process comprises the following programs: human resource planning, recruitment, selection, professional development, performance appraisal, and compensation. In this article, I examine one of the human resource management processes (human resource planning), because it is such an important function that is often neglected.

The planning function, in general, involves defining an organization's goals, establishing a strategy for achieving those goals, and developing a comprehensive set of plans to integrate and coordinate activities (Robbins & Judge, 2013). The necessity of this function follows from the nature of organizations as purposive (goal-seeking) entities (Gibson, Ivancevich, Donnelly, & Konopaske, 2012). Planning activities can be complex or simple, implicit or explicit, impersonal or personal. For example, a human resource manager forecasting demand for the firm's human resources may rely on complex econometric models or casual conversation with human resource personnel in the field.

Good human resource planning involves meeting current and future personnel needs. The manager ensures that personnel needs are met through ongoing analysis of performance objectives, job requirements, and available personnel, coupled with knowledge of employment laws.

## Human Resource Planning

Organizations typically plan their future needs for supplies, equipment, building capacity, and financing. Organizations must also plan to ensure that their human resource needs are satisfied. *Human resource planning* involves identifying staffing needs, forecasting available personnel, and determining what additions or replacements are required to maintain a staff of the desired quantity and quality to achieve the organization's goals. The human resource planning function involves at least three different elements: job analysis, forecasting demand and supply, and legal restraints.

### Job Analysis

Company president, manager, director of personnel, legal counsel, labor relations specialist, college president, dean, and professor are all jobs. To recruit and select the appropriate personnel for specific jobs, it is necessary to know what the jobs entail. *Job analysis* is the process of obtaining information about jobs through a systematic examination of job content (U.S. Department of Labor, 2012). A job analysis usually consists of two parts: a job description and a job specification. The *job description* is a written statement that outlines the duties and responsibilities expected of a job incumbent. It usually includes a job title, the title of the incumbent's immediate supervisor, a brief statement of the job goal, and a list of duties and responsibilities. The *job specification* is a written document that outlines the qualifications that a person needs in order to accomplish the duties and responsibilities set forth in the job description.

Job analysis provides valuable information for forecasting future staffing needs and other personnel management functions. For example, the data produced by the job analysis can be used to develop appropriate recruitment and selection methods to determine dimensions on which personnel should be evaluated, to determine the worth of jobs for compensation purposes, and to develop training programs for personnel.

**Job analysis techniques.** A variety of techniques are available for conducting a job analysis. The technique most appropriate for a given situation depends on a number of factors, such as the type of job being analyzed, the resources available for doing a job analysis, the scope of the job, and the size of the organization. Some of the most commonly used techniques for conducting a job analysis include observation, work sampling, critical incidents, interviews, and questionnaires.

**Observation.** The most straightforward method of job analysis is *observation* of people performing the job. Observation can be a good way of examining jobs that consist mainly of observable physical activity. Jobs such as maintenance worker, groundskeeper, and machine operator are examples. Analyzing a job through observation is not appropriate where the job requires much abstract thinking, planning, or decision making (e.g., company president, labor relations specialist, legal counsel).

**Work sampling.** A variation of the observation technique is the *work sampling* approach. The job analyst periodically samples employees' activities and behavior on jobs that have long cycles, that have irregular patterns of activity, or that require a variety of different tasks. For example, research on the administrative demands of department heads consistently shows that they are fragmented and rapid fire.

A personnel administrator could examine the job activities of twenty-five or thirty company executives on a given day or randomly select twenty-five or thirty days of the year and observe the job activities of five executives during those days. This approach is similar to the one used by Henry Mintzberg (1998) when he undertook a careful study of five executives to determine what they did on their jobs.

On the basis of his observations, Mintzberg concluded that company executives perform ten different, highly interrelated roles, which he divided into three categories: figurehead, leader, liaison (interpersonal); monitor, disseminator, spokesperson, decisional (informational); and entrepreneur, disturbance handler, resource allocator, negotiator (decisional). Mintzberg, however, went well beyond the work sampling approach in his analysis of executives. He used a combination of ethnographic techniques including observation, interviews, document analysis, and structured questionnaires to obtain his data.

**Critical incidents.** Another variation of the observation technique, known as *critical incidents*, examines only those job activities leading to successful or unsuccessful performance. This approach is similar to the trait approach used to identify effective and ineffective leaders. An outside consultant, an immediate supervisor, or a job incumbent can conduct this technique. Direct observation and the two variations thereof are frequently used in conjunction with interviewing.

**Interviews.** Probably the most widely used technique for determining what a job entails is the *interview* technique, and its wide use attests to its advantages. Observation of an organization's labor relations specialist, for example, would only reveal that the role incumbent conducts research, handles conflicts, prepares proposals and counterproposals, confers with management, and negotiates at the bargaining table. This method fails to identify other important aspects of the job, such as analytic thinking and problem solving. Interviewing the labor relations specialist allows that person to describe important activities of the job that might not be revealed through direct observation.

**Questionnaires.** Many organizations use job analysis *questionnaires* to elicit information concerning what a job entails. Such questionnaires have at least two advantages. First, they can pool the responses of numerous job incumbents and compare job activities across many jobs, using a standard set of common dimensions. Second, questionnaire can generate much information quickly and inexpensively. For example, a job analyst could administer a questionnaire to 100 job incumbents in less than it would take to observe a single job or interview one job occupant.

The U.S. Air Force has developed the Comprehensive Occupational Data Analysis Program (CODAP) (Christal & Weissmuller, 1977). It elicits data about hundreds of job tasks. Another popular, structured job analysis questionnaire is the

Position Analysis Questionnaire (PAQ) developed at Purdue University. It consists of 194 items designed to assess six broad categories of work activity: information input, mental processes, work output, relationships with others, job context, and other job characteristics such as working irregular hours (McCormick, Mecham, & Jeanneret, 1972). The PAQ is inadequate for analyzing upper-level cognitive processes such as abstract thinking and strategic planning. Well-known instruments designed to elicit information about upper-level administrative jobs include the Management Position Description Questionnaire (MPDQ) and the Professional and Managerial Position Questionnaire (PMPQ) (Tornow & Pinto, 1976; Mitchell & McCormick, 1979).

### **Forecasting Demand and Supply**

The second phase of human resource planning, *forecasting* demand and supply, involves using any number of sophisticated statistical procedures based on analysis and projections. Such forecasting techniques are beyond the scope of this discussion.

At a more practical level, forecasting demand involves determining the numbers and kinds of personnel that an organization will need at some point in the future. Most managers consider several factors when forecasting future personnel needs. The demand for the organization's product or service is paramount. Thus, in a business, markets and sales figures are projected first. Then, the personnel needed to serve the projected capacity is estimated. Other factors typically considered when forecasting the demand for personnel include budget constraints; turnover due to resignations, terminations, transfers, and retirement; new technology in the field; decisions to upgrade the quality of services provided; and minority hiring goals (Noe, 2012).

Forecasting supply involves determining what personnel will be available. The two sources are internal and external: people already employed by the firm and those outside the organization. Factors managers typically consider when forecasting the supply of personnel include promoting employees from within the organization; identifying employees willing and able to be trained; availability of required talent in local, regional, and national labor markets; competition for talent within the field; population trends (such as movement of families in the United States from Northeast to the Southwest); and college and university enrollment trends in the needed field (Ball, 2012; Henderson, 2010).

Internal sources of employees to fill projected vacancies must be monitored. This is facilitated by the use of the human resource audit, or the systematic inventory of the qualifications of existing personnel. A *human resource audit* is simply an organizational chart of a unit or entire organization with all positions (usually administrative) indicated and keyed as to the "promotability" of each role incumbent.

Figure 1 depicts a human resource audit, or inventory chart, for a hypothetical firm. As Figure 1 indicates, the president can see where he or she stands with respect to future staff actions. The president's successor is probably the vice president for operations. This person has a successor, operations manager, ready for promotion. Subordinates to the manager of operations are two department heads who are promotable now, three who will be ready for promotion in one or two years, two who are not promotable, and one who should be dismissed.

The other subordinate to the vice president of operations, the sales manager, is satisfactory but not promotable. That person has two department heads who are promotable now, one who will be promotable with further training, and one who is satisfactory but not promotable.

The vice president of finance requires further training before being ready for promotion. Here is a person who knows the job of business management extremely well but lacks training in other aspects of the presidency, such as operations, personnel administration, marketing, sales, and the like. Some of the accountants reporting to the vice president for finance are promotable now, while others either are not promotable or require additional training before being ready for promotion.

The vice president of personnel, while occupying a very specialized function, is promotable now. Subordinates to that person occupy such specialized jobs that, although performing these roles satisfactorily, they require additional training before being ready for promotion to vice president of personnel.

The vice president of research and development was a newly created position in this hypothetical organization. Because of the specialized nature of the position, that person requires considerable training before being ready for promotion. Subordinates to that position are designated similarly.

Future needs and the potential of the existing administrative staff have been identified, and weaknesses have been uncovered. These data can help administrators plan immediate promotions for personnel from within the organization who are promotable, plan for appropriate training and development of others, or dismiss those who are unsatisfactory. If there are an insufficient number of candidates inside the firm to fill vacancies, staffing specialists typically analyze labor markets.

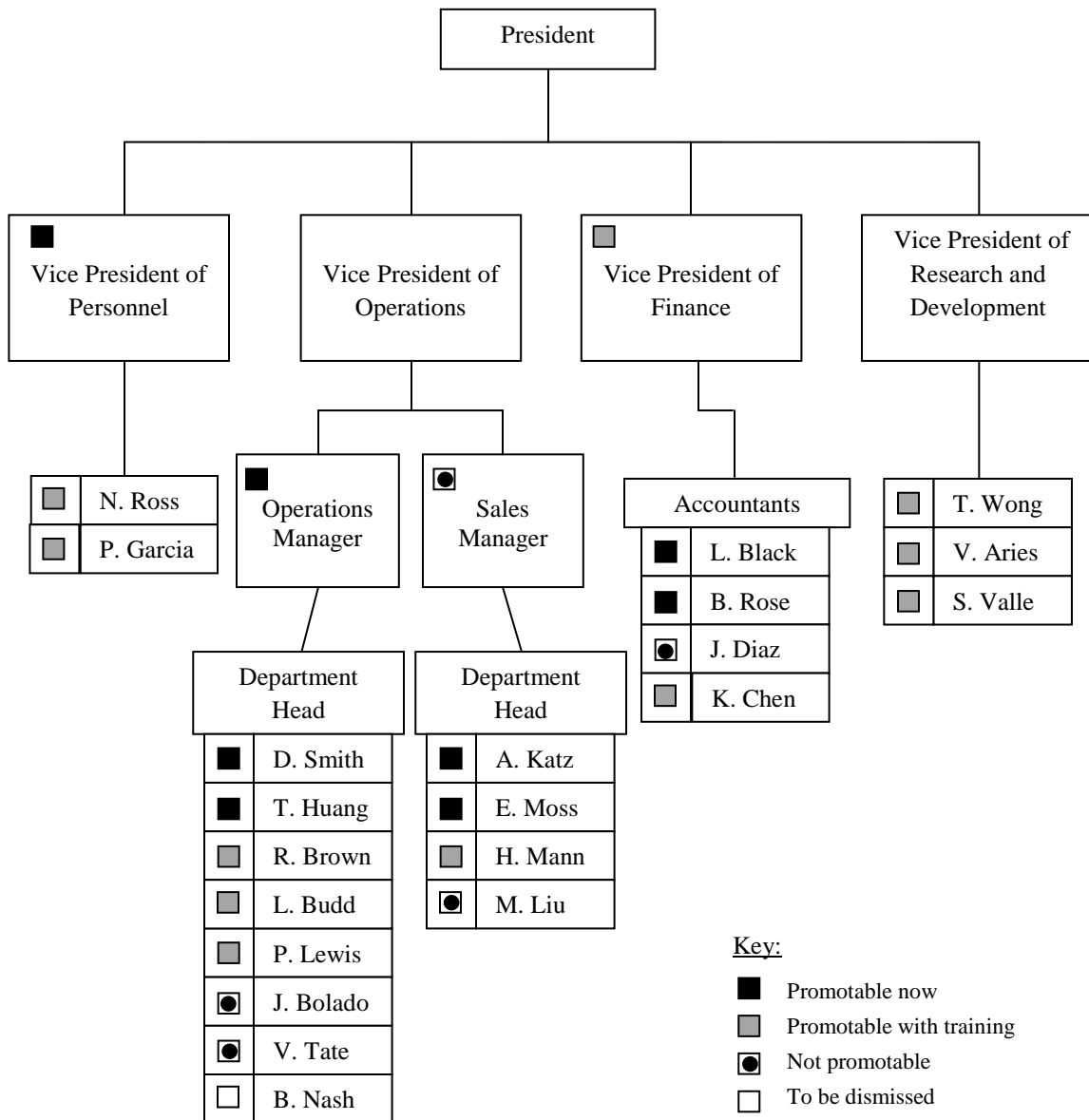


Figure 1. Human resource audit for administrative personnel.

## Legal Constraints

Legislation designed to regulate hiring practices affects nearly every aspect of employment—from human resource planning to compensation. Our intent is not to make managers into attorneys but to examine the basic laws that relate to employment decisions. Managers must avoid possible charges of discrimination on the basis of race, color, gender, national origin, age, or disability (Cushway, 2011; Moran, 2011). Table 1 summarizes some of the major laws pertaining to the personnel process.

**Women and minorities.** The landmark legislation designed to ensure equal employment opportunity is the Civil Rights Act of 1964. In 1965, President Lyndon B. Johnson issued Executive Order 11246 (amended by Executive Order 11375 in 1967). These executive orders obligated employers to go beyond the provisions of nondiscrimination of the Civil Rights Act and to actively seek out women and minorities and hire, train, develop, and promote them. In 1972, Congress established the *Equal Employment Opportunity Commission* (EEOC) and passed the Equal Employment Opportunity Act. This amendment to the Civil Rights Act of 1964 extended the jurisdiction of the EEOC and gave it the power to initiate court action against noncomplying organizations.

**Older workers.** Congress passed the Age Discrimination in Employment Act in 1967. The act originally prohibited discrimination in employment of those people forty to sixty-five years of age; the act was amended in 1978 to move the top age from sixty-five to seventy years; and in 1986 the upper age limit was removed. In essence, the law prohibits discrimination in hiring, firing, compensating, or any other conditions of work of any person forty years of age or over. Exceptions to the legislation include tenured faculty and some high-salaried executives or for documented health- or performance-related reasons.

**The handicapped.** The Vocational Rehabilitation Act was passed in 1973 and amended in 1978. The act requires employers who have a contract with the federal government worth \$2500 or more to take affirmative action to hire and promote qualified handicapped persons. A handicapped person is defined as any individual with a physical or mental disability that limits normal activities such as walking, seeing, speaking, or learning. The law stipulates that the handicapped individual must be capable of performing the particular job for which she is being considered.

**Veterans.** The Vietnam Era Veterans' Readjustment Act of 1974 requires employers with federal contracts to take affirmative action to employ disabled veterans. The act also provides job assistance for Vietnam-era veterans in the form of job counseling, training, and placement.

**Equal employment opportunity.** Equal employment opportunity (EEO) is the right of all persons to work and to advance on the basis of merit, ability, and potential without regard to race, color, religion, gender, or national origin. Table 1 summarizes the primary legal base for EEO and supporting legal activities. The provisions of these acts generally apply to all public and private organizations employing fifteen or more people. The EEOC administers and federally enforces the various equal employment opportunity acts. The EEOC provides assistance to employers in developing affirmative action programs and in resolving discrimination complaints brought against employers.

Table 1

*Major Laws Affecting Hiring Practices*

<b>Law</b>	<b>Basic Requirements</b>
Title VII of the Civil Rights Act of 1964 (as amended)	Prohibits discrimination in employment on the basis of race, color, religion, gender, or national origin.
Age Discrimination in Employment Act of 1968 (as amended)	Prohibits discrimination in employment against any person 40 years of age or over.
Equal Pay Act of 1963	Prohibits wage discrimination on the basis of gender; requires equal pay for equal work regardless of gender.
Rehabilitation Act of 1973	Requires employers to take affirmative action to employ and promote qualified handicapped persons.
Pregnancy Discrimination Act of 1978	Requires employers to treat pregnant women and new mothers the same as other employees for all employment-related purposes.
Vietnam Era Veterans' Readjustment Act of 1974	Requires employers to take affirmative action to employ disabled Vietnam War veterans.
Occupational Safety and Health Act (OSHA) of 1970	Establishes mandatory safety and health standards in organizations.

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**Affirmative Action Programs**

Whereas EEO legislation prohibits discrimination in recruitment, hiring, promotion, compensation, discharge, *affirmative action programs* are designed to increase employment opportunities for women and other minorities including veterans, the aged, and the handicapped. Based on two executive orders, originally issued by President Johnson, affirmative action requirements apply to public and private employers and educational institutions that either have contracts with or receive monies from the federal government. The intent of the program is to ensure that women and other minorities are represented in the organization in percentages similar to their percentage in the labor market from which the organization draws personnel. For example, if the labor pool in a community is 15 percent black and 5 percent Hispanic, then 15 percent and 5 percent of the labor force of an organization operating in that community should be black and Hispanic respectively.



In general, affirmative action programs should include the following (Kranz, 2012): (a) making concerted efforts to recruit and promote women, minorities, the handicapped, and veterans, including recruiting through state employment services and at minority and women's colleges; (b) limiting the questions that can be asked in employment applications and interviews; (c) determining available percentages of women, minorities, and the handicapped in the labor market; (d) setting up goals and timetables for recruiting women, minorities, the handicapped, and veterans; and (e) avoiding testing unless it meets established guidelines.

### Conclusion

Human resource planning begins with a forecast of the number and types of employees needed to achieve the organization's objectives. Planning also involves job analysis, which consists of the preparation of job descriptions and job specifications. Of particular concern for today's executives is the growing body of laws regulating the human resource management process.

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