

Staffing the Software Organization

This module defines the process used to staff a software engineering organization and orient new employees. We will begin with recruiting challenges.

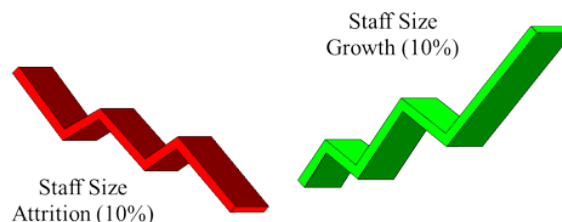


Staffing Challenges

Today, finding qualified candidates is more challenging due to the changing workforce; we have increasing diversity with more working women, an international labor force, older workers, generation Xers, and more technical professionals pursuing self-employment. During the past 10 years there has been a dramatic decline in the ratio of women receiving computer science degrees from 37% in the mid 1980's to 28% in the mid 1990's. This can be explained in part by the rise of personal computers. We have the stereotypical personality of boys, who often desire to play violent games and work individually, which is more consistent with the use of personal computers. Studies show that most games and educational software are designed for boys. Also parents are more likely to purchase computers for their boys than for their girls. This trend is changing but it still holds true. Additionally, the computer science workplace has become more defined by isolated development, that is, most work is accomplished in front of a computer with the use of email, net meeting, instant messaging and social networking tools. Studies have shown that women prefer a work environment with more personal interaction.

The Association for Computing Machinery (ACM) established a committee that aims to improve the working and learning environments for women in computing. Check out their website at <http://www.acm.org/women/>

In addition, we now face global competition and certainly a volatile economy. Organizations report on average a 10% attrition rate and a 10% staff growth rate. This means an organization of 100 people will require 20 new employees each year, that is, 10 replacements and 10 new staff. An organization of 300 will require 60 new employees each year, 5 each month, and **more than one (1) new employee every week!**



Also there are legal issues that every hiring professional must be aware of including diversity & affirmative action, the Americans with disabilities Act (ADA), privacy, workforce reductions rules and regulations, and recruiting from competitors (unfair recruiting practices). Lastly there are increased expectations of potential new employees including more on-the-job-training (OJT), technical training, and education;

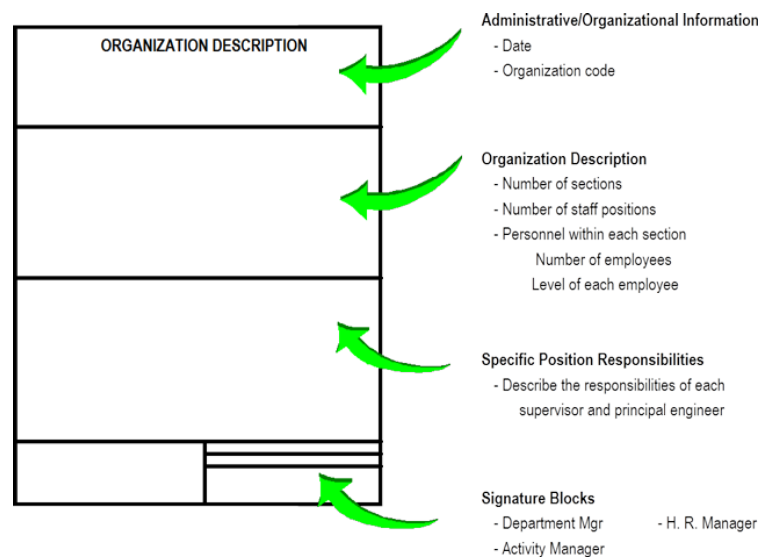
alternate work arrangements such as flex time, part time, and leave of absence; transportation issues and whether tolls, parking, or commuting will be covered; and telecommuting.

Specifying Human Resource Needs

As organizations win new programs, they increase staff. When this occurs, companies generally provide a large Organizational Description that will:

- Define a new section, department, or even activity;
- Identify the manager, supervisor, and principal engineer positions; and
- Identify the number of personnel required in the new organization along with the grade levels.

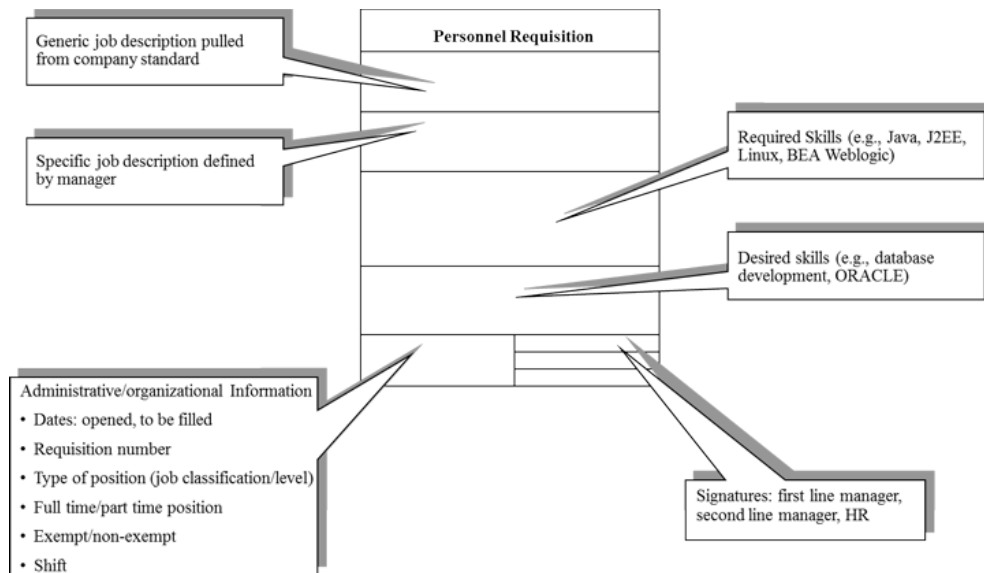
The organizational description will include administrative and organizational information, the organizational description, specific responsibilities for key positions, and the required signature blocks.



Also organizations need Individual Personnel Requisition which will:

- Define position requirements,
- Describe required skills, and
- State advancement potential.

The individual personnel requisition is similar but provided a more detailed description of each opening including a generic description of the job often taken from the company's job categories, a specific job description, the required and desired skills for the job, the type of position, and the required signature blocks. Be aware that **required skills** are just that, required, and can be subjected to court decisions. If two candidates apply for a job and the first candidate has the required skills and the second candidate does not, even if you prefer the second candidate, you may not hire him/her for this position. If the first candidate challenged you in court, you would likely lose based on the required skills identified!



The Recruiting Process

Internal Recruiting

Most companies post requisitions internally for about five (5) days. If no qualified internal applicants apply, then they turn to external recruiting activities. If the new position offers a career move upward for anyone in the current organization, discuss the opportunity with all potentially qualified personnel, interview, select the best qualified (if any), and recruit to backfill that person's position. This internal interviewing approach demonstrates willingness to promote from within, provides a definite morale booster, and enables the supervisor to keep on top of employee career objectives. It also provides a good opportunity to communicate with the potential employee. Internal interviews can be within the local organization, that is, within the same department or with another department, or with other divisions. Some corporations encourage more internal interviewing than others.

The Human Resource department has guidelines that must be followed for both internal and external recruiting. For internal recruiting, often employees will inquire about the process before formally applying for the position and following formal process. Employees want to know what chance they have before revealing desire to transfer to their current supervisor. The typical formal process is:

- An employee sees the requisition posted internally or externally.
- He/she talks to current supervisor to let them know that they are interested in the position.
- The employee submits the request for interview. In some companies, the current supervisor must sign off on the request.
- He/she is interviewed by new supervisor.
- If the employee is selected, an offer is extended subject to Program Manager's and current supervisor's concurrence.
- Lastly the transfer date is negotiated and the employee moves to the new department.

In some organizations, employees are reluctant to talk to their current supervisor, fearing that he/she will not let them transfer; however, most managers want to help employees with their careers and welcome transfers knowing it is in the best interest for the employee. Yet it likely means that the supervisor will have to recruit someone to fill the employee's opening. Be aware that in some companies, it can be more difficult to process a transfer than to hire someone from outside!

External Recruiting

There are a number of external recruiting techniques including the more traditional methods such as advertising, job fairs, recruiting agencies, networking, employee referrals, and campus recruiting. The newer more modern techniques include: online recruiting, automated screening, temporary to hire, retiree job banks, telerecruiting, creative promos, and social networking like LinkedIn.

One company provided tray liners to numerous universities for use in their dining halls. The tray liners promoted the company on one side and contained an application on the other.

Another company paid local grocery stores for a recruiting advertisement printed on each register receipt.

The Recruiting Process

Campus recruiting process

Most companies have a campus recruiting process. They start with selecting the set of universities and colleges where they want to draw applicants. These can be local universities/colleges, schools with specific programs and curriculum, or employees' school alma maters. HR will work with Job Placement Center to schedule campus interviews. Generally this occurs months in advance and often is set up for October to hire the May graduates and March or April to hire the summer and fall graduates. The company identifies and shares interview criteria needs including selected major(s), minimum grade point average (GPA), U.S. Citizenship, and cooperative employment (coop) if offered with the job placement center. The company also provides the Job Placement Center at each school with corporate information including web site, brochures, posters, video tape, and give away trinkets. Several days prior to on-campus interview, the Job Placement Center will provide schedule of interviews and a package on each student candidate including his/her resume, letters of recommendation, and transcript. The hiring manager or HR will review the students' credentials prior to conducting the on-campus interviews. These interviews are typically 30 minutes in length — 15 minutes to interview the student and 15 minutes to "sell" your organization. It is imperative that you keep good notes! You will probably see 10 to 20 candidates so use the interview as a "screening interview" to down-select to targeted number of candidates, usually no more than two or three students from a specific school. Many companies bring employees' who are recent college graduates, often from the target school, to support the interview. This allows the hiring manager to jot down notes as this employee describes his/her orientation, roles, and responsibilities in your organization. Once you have selected your top candidates, invite them to your work facility to conduct a more extensive interview. This number depends on how many schools you attend and how many college graduates you are trying to recruit. If possible, one person from your organization should participate in all of the extensive interviews to provide a common point of comparison. Make offers to the top group, and be sure to keep records in case you want to hire more students later.

Traditional external recruiting methods are summarized in the following chart.

Recruiting Method	Applicant Credentials	Target Specific Skills	Timeliness	Cost	Senior Level Position	Entry Level Position
Advertising	<ul style="list-style-type: none"> Cover Letter Resume 	Good	Moderate	Moderate		
Job Fairs	<ul style="list-style-type: none"> Resume Personal contact 	Good	Slow	Moderate		
Recruiting Agencies	<ul style="list-style-type: none"> Applicants screened Resume Personal contact 	Best	Fast	Very Expensive	Best	
Networking	<ul style="list-style-type: none"> Resume Personal evaluation 	Fair	Only during business decline	Least Expensive		
Campus Recruiting	<ul style="list-style-type: none"> Resume Transcript Personal contact 	Fair	Twice per year	Moderate		Best
Employee Referrals	<ul style="list-style-type: none"> Resume Personal endorsement 	Good	Moderate	Low		
Social Networking	<ul style="list-style-type: none"> Resume Online contact 	Fair	Moderate	Low		
Online Recruiting	<ul style="list-style-type: none"> Resume Online contact 	Poor	Only when people are searching	Low		

In summary, both internal and external recruiting activities are necessary and important. There are advantages and disadvantages to both methods. Internal candidates usually take less time to hire and ramp up on the new project since the company culture is familiar, are less expensive, and promote morale within the company; however, you may not see all the qualified candidates and it is possible that you could create a morale problem among those not chosen. External candidates on the other hand bring new ideas, stimulate competition, and may allow you to gain expertise that does not currently

exist in your company. The disadvantages are external candidates cost more to hire, take more time to learn the company culture, and need receive training and orientation to your company's guidelines and processes.

	Advantages	Disadvantages
Internal Candidate	<ul style="list-style-type: none">• Less time involved in hiring• Less expensive• Promotes morale	<ul style="list-style-type: none">• Might not see all qualified candidates• Possible morale problems among those not chosen
External Candidate	<ul style="list-style-type: none">• Brings new ideas• Stimulates competition• Can obtain expertise that does not exist in the company	<ul style="list-style-type: none">• re expensive to hire• More time involved• Need to orient and train

Best answer is mix of both

There are a number of recruiting strategies. This chart lists company approaches as reported by students.

Recruitment Excel Spreadsheet (XLSX attached to the same item as this PDF in Blackboard).