INTRODUCTION TO COMPUTER USER SUPPORT

In this chapter you will learn:
♦ What the job market demand is for user support employees
♦ Common ways that organizations provide a user support function
♦ Services that user support groups provide
♦ Typical position descriptions for user support staff members
♦ The knowledge, skills, and abilities needed to qualify for an entry-level user support position
♦ Career paths for user support workers

As you learned in Chapter 1, the widespread use of computer technology by employees and home users has created a new industry called end-user computing. End users are usually not computer professionals, yet they need to use computers to get their work done. In the course of their work, they frequently encounter situations in which they require help or information. They often look for someone to turn to when they have a question or problem, need advice or information, want training, or are just plain frustrated because they cannot accomplish what they want or need to get done.

Many organizations recognize the need for a user support function for their employees or their clients who use a computer at work or home. To fill this need, organizations have formal or informal ways to provide user support. Although user support may bring to mind an employee of a software vendor at the other end of a telephone line or a problem solver at a help desk at school, user support often includes a wide variety of tasks. In this chapter, you will learn about many of these tasks. Then you will look at sample job descriptions for the kinds of jobs in user support.
INCREASED NEED FOR USER SUPPORT EMPLOYEES

A manufacturing, service, or consulting organization may provide computers for its knowledge workers to help them be more productive. But the organization’s role usually does not end there. Most organizations must also provide some form of ongoing assistance to their workers so that the computers become tools that increase employee productivity instead of stumbling blocks and sources of frustration. Similarly, a hardware or software vendor provides products to its clients who, in spite of rigorous product testing and extensive documentation, inevitably encounter problems that the vendor must help them solve.

Organizations have recognized an increasing need for the user support function, and therefore for user support workers, in the past decade. With the growth of end-user computing in offices and homes, along with the growth of the Internet as a way to obtain information, organizations often find themselves unable to meet the need for user support and support workers. The demand for user support positions grew significantly during the 1990s while the economy grew and the unemployment rate in the United States declined from around 7.5% in the early 1990s to about 4% in 2000, according to the U.S. Bureau of Labor Statistics.

During the early years of the first decade of the 21st century, three important trends have influenced the demand for user support employees in organizations.

First, the economic recession that began in March 2001 caused a gradual increase in the unemployment rate to about 6%. As a result, hiring in all information technology fields, including user support, decreased from the levels of the 1990s.

Second, U.S. companies are increasingly moving technical support jobs overseas (especially to India and Asian countries), where well-trained workers are available and wages are comparably lower. This has reduced the demand for IT and technical support workers in the United States.

Third, some organizations that need technical support workers now contract with temporary employment agencies for the workers they need. Some of these temporary work opportunities evolve into permanent positions over time, so that the temporary assignment is effectively a trial period for both the employee and the employer.

To learn about temporary employment agencies in your area that seek computer professionals, see the Web site of the American Staffing Association at www.staffingtoday.net.

The Information Technology Association of America (ITAA) periodically reports on the need for workers in all information technology fields. In 2003, it reported a total of 10.3 million workers in information technology, of which about 1.9 million, or 18.5%, were in technical support fields and another half million (5%) were technical writers. Thus, about one-fourth of the workers in information technology are in some user support capacity.
ITAA forecasts that about a half million positions in IT will be filled during 2003, down from a peak of over 1.5 million in 2000. It concludes that hiring in IT fields continues, but at a much slower pace than during the 1990s.

To learn more about the ITAA survey of the current need for workers in the information technology fields, visit its Web site at www.itaa.org.

The Office of Employment Projections in the U.S. Bureau of Labor Statistics reports that about one-half million workers were employed in the job category Computer Support Specialist in 2000. It forecasts an increase in employment in that job category of almost 100% by the year 2010. By comparison, over 200,000 were employed in the job category Network and Computer System Administrators in 2000, with growth in this category by 2010 forecast at 80%. However, these forecasts were made prior to the U.S. recession that began in 2001, and before large numbers of user support jobs began to be outsourced to India and Asian countries.

Robert Half, a consulting company that specializes in jobs in the IT industry, publishes an annual salary survey of technology professionals. Robert Half also publishes its forecast of employment trends in technology and frequently lists computer networking and help desk/end-user support as two of the fields in IT where the demand for workers will continue to be strong during the next year.


Some organizations have formed partnerships with community colleges or vocational/technical schools and have developed training programs to prepare both new and current employees to meet the need for well-trained workers in support services.

How Organizations Provide a User Support Function

Computer user support (or simply user support) provides information and services to employees or clients to help them use computers more productively in their jobs or at home. Computer user support includes a broad spectrum of services provided to computer users to help them resolve problems that arise and to help them be more productive when they use computer technology. Technical support is a level of user support that focuses on high-level troubleshooting and problem solving. In some organizations, user support is called technical support, especially if the support staff consists of workers who are technicians or who have high-level technical skills. In other situations, user support may be called technical support for marketing or public relations purposes. Despite different naming conventions, what is important are the tasks user support performs in an organization.
Chapter 2  Introduction to Computer User Support

The user support function is known by a variety of informal names and formal titles in various organizations. Common names for user support include:

- User Support
- Help Desk
- Client Services
- Client Support Services
- Technical Support
- Computer Assistance
- Computer Help Hotline
- Call Center
- Hardware/Software/Network Support
- Information Center
- Support Services
- Computer User Services

Organizations provide support to their employees or clients in a variety of ways. Figure 2-1 lists the most common methods of organizing the user support function, which are described in more detail in the following sections.

- Informal peer support
- User support combined with other responsibilities
- User support as a separate position or group
- Help desk support
- User support center operation
- User support as an Information Services (IS) responsibility
- User support outsourced to a vendor

**Figure 2-1** Common ways that organizations provide a user support function

The strategy that an organization chooses to provide user support often depends on the organization’s size, type, location, financial situation, and goals for computer support services, as well as the skill level and the support needs of employees and clients. In fact, an organization may use different support strategies at different times as the needs of its employees and clients change, and it may use more than one strategy at the same time.

**Informal Peer Support**

Many small organizations and sometimes departments in larger organizations provide support for computer users informally. One or more employees, whose job titles usually have little to do directly with computers (for example, they are office managers, administrative specialists, or Accounting department heads), are generally recognized as the person to turn to when a computer user has a question. This form of support is called peer support because workers look to their colleagues, or peers, when they need computer assistance. For
example, a sales representative with a special interest in computer technology may become
the “guru” for computer problems that arise in the Marketing department.

Employees who provide peer support may have little special training or preparation for their
computer support role. They accept the responsibility perhaps because they have greater
interest in or more experience with computers than other employees do, because they enjoy
using their skills and having their expertise recognized, or simply because no one else is
willing or able to provide help when it is needed.

Microsoft has extended the strategy of peer support to the Web in the form
of virtual user groups of peers who share common interests. To learn more about
Microsoft user groups, go to www.microsoft.com/communities/usergroups/
default.mspx. Click the Find a Community link to see a list of peer user groups.

An informal network of peers who provide user support to their colleagues often precedes
the formation of a more formal organizational structure. Informal peer support also occurs
in schools and colleges, where students quickly learn who among their classmates is a good
source of information and assistance. You may have provided informal peer support in a
computer or training lab when the person next to you asked for your help in solving a
hardware or software problem.

Because peer support is informal, communication with end users in this situation is often
informal, as well. Information about computer technology is often exchanged during coffee
breaks or in ad hoc meetings where interested parties discuss technology problems and issues
of mutual concern.

User Support Combined with Other Responsibilities

The first step an organization often takes toward a formal computer support function may
occur when some user support responsibilities are written into an existing employee’s
position description. This step may formalize a responsibility that existed informally for
some time. The combination of user support with other responsibilities is a good way for
very small organizations to meet the need for computer support when they cannot justify
the cost of a full-time support employee. Employees who are assigned user support
responsibilities in conjunction with other duties often see the designation as a positive career
step because their expertise is recognized formally and perhaps rewarded financially. On the
downside, these workers can become overloaded and stressed because computer support
tasks can make significant demands on their time and can interrupt or compete with other
assigned tasks. As the number of computers and users increases, or as an organization installs
new software that may increase the number of problems to solve, employees for whom
computer support is only a part-time responsibility may find it difficult to complete both
their computer support tasks and their other responsibilities successfully.
Chapter 2  Introduction to Computer User Support

Small organizations that sell computer hardware or software often provide informal client support during the early stages of product development and sales. When the volume of sales is small, client support may be assigned to a product development engineer or a programmer along with other duties. As sales increase, the need to provide client support becomes greater. At that point, the support function usually becomes more formal, in the form of full-time support positions or a user support group.

User Support as a Separate Position or Group

When organizations find that part-time, peer staff can no longer handle the volume or variety of requests for computer support, or that the hidden costs of peer support are growing, they have several options. One alternative is to devote a full-time position to provide support. Some organizations recognize that they have reached this point when a number of employees are engaged in informal peer support roles or when several employees have computer support as one of their official responsibilities. Organizations that devote a full-time position to provide user support seek the expertise of a support employee who has a greater breadth and depth of technical skills or improved communications skills.

A second alternative is to organize the part-time support employees into a user support group, a formal workgroup that is organized to provide computer support services. Depending on the needs of the organization, a user support group can consist of employees who provide support in addition to other job responsibilities. The advantage of using part-time support employees is their familiarity with the day-to-day operation of the organization. A user support group can also combine full- and part-time staff whose primary job function is to provide user support. The group may provide support either internally to employees or, in the case of a hardware or software vendor, to external clients. Although a dedicated computer support staff may provide a higher level of technical expertise, these specialists are usually less familiar with the organization's daily operation and the tasks that end users perform.

A third alternative open to companies that experience a growing demand for computer support is to outsource their support needs, a strategy that is discussed below.

Help Desk Support

When individual employees need assistance, they may turn to the staff of a user support group or they may contact a help desk facility. A help desk is organized to provide a single point of contact for users in need of technical support, whether they are internal employees or external clients. A help desk manages client problems and provides solutions-oriented support services. A help desk may be part of a larger user support group, or it may stand alone as the primary source of user support. In a large organization with many internal users, a help desk may be one of many support services offered. In a computer products vendor organization, a help desk may be the only support service provided to customers.
A help desk facility often includes one or more of these options:

- A physical location where internal employees or external clients can go when they have a question or problem, or want to request an office visit or a field service call
- A telephone number (sometimes called a hotline) that external clients or internal employees can call for assistance with a hardware or software product
- An e-mail address, Web site, or online chat session that employees or clients can contact for technical assistance

Regardless of its location or method of contact, the help desk staff attempts to resolve problems as soon as possible. If they cannot, they will ensure that someone else to whom they refer the problem resolves it. For example, the help desk may serve as an interface between an internal user with a problem and an external vendor who can solve the problem.

The operation of a help desk is described in greater detail in Chapter 6. User support provided through a hotline or telephone help desk is actually part of a much larger industry. The call center industry includes incoming, outbound, and blended telephone centers. A user support hotline or telephone help desk is technically an incoming call center. Telemarketing and political surveys are examples of activities in outbound call centers. Blended call centers combine both incoming and outbound telephone operations.

User Support Center Operation

Another organizational model for support services is a user support center. A user support center (also called an information center) provides a wide range of services to an organization's computer users who are primarily internal users. These services can include consultation on computer purchases (it may even sell computer products to employees); a training center or training program to provide learning experiences, manuals, and other documentation on supported hardware and software products; and a help desk for information, troubleshooting, and assistance. The user support center in some organizations often provides facilities management and hardware repair services as well.

User Support as an IS Responsibility

Although some organizations view computer user support as a separate function, other organizations place this responsibility with the Information Services (IS) department. In this arrangement, either the technical staff in the IS department provides user support services directly or a specialized group within IS provides them.

Making technical support part of the IS department has advantages and disadvantages. On the one hand, because the IS department's primary responsibility is usually to design and develop application programs and operate the organization's mainframe systems and telecommunications networks, some organizations have found that the IS department is not a good location for the end-user support function. The IS staff is often busy working on its own priorities, and may have little time to devote to end-user problems. On the other hand, some organizations believe that all corporate computing activities should be centralized.
under one umbrella (the IS department) in order to provide a single point of contact for all mainframe, network, and personal computer users. Whether end-user support is organized separately or combined with other computer activities in an IS department depends on an organization’s history, its experience with computer support, its organizational culture, and its users’ needs. Either structure can be successful, and, similarly, either structure can fail to meet user expectations.

Ed Engelking, in a TechRepublic article at techrepublic.com/5100-6269-5028769.html (registration required), relates some perspectives from TechRepublic members on the issue of whether a help desk operation should be part of the Information Technology (IT) department, or separate from it.

User Support Outsourced to a Vendor

Outsourcing is another alternative for organizations that need to provide support services to their employees and clients. To **outsource** its user support services, an organization contracts with a vendor that specializes in user support functions to handle support incidents. Organizations can outsource support services for both internal and external users. For example, employees may contact a support provider via a dedicated telephone line or e-mail. Alternately, an organization’s internal help desk operation may handle some incidents itself and refer difficult technical problems to an external support provider.

Outsourcing can be an attractive option for an organization that wants to control its costs or take advantage of expertise it does not have among its existing support staff.

To learn more about the advantages of outsourcing help desk and user support services, visit the Web site of EDO Technical Services Operations, a company that provides outsourced support for other organizations and vendors, at www.compusupport.com.

Several disadvantages of outsourcing computer user support include:

1. Outsourced support usually occurs by telephone or e-mail because on-site assistance can be prohibitively expensive and is rarely included in an outsourcing agreement.
2. Outsourced support costs are predictable, but not necessarily lower than internal support.
3. When an organization outsources support, it relies on a vendor’s staff for an important organizational function. It does not develop its own in-house technical support expertise. As a result, little transfer of knowledge occurs from the support provider to internal staff about computer use issues.
4. When support is outsourced, the support staff rarely develops a personal relationship with an organization’s end users. A personal relationship between end users and support staff often encourages users to report problems and request help.
Client Outsource is an example of a technical support vendor that reflects the trend for support providers to locate in India and Asian countries. Visit their Web site at www.clientoutsource.com.

No single correct organizational structure for end-user support works well in every situation. More often than not, an organization’s approach to user support evolves over time, depending on its goals, resources, expertise, and needs.

**USER SUPPORT SERVICES**

User support centers in organizations provide a variety of services. The range of services provided depends on the goals of the organization, the specific needs of the employees or clients, and the resources the organization decides to devote to the support function. Figure 2-2 lists some common user support services.

- Staff a help desk, hotline, or chat session to provide information
- Provide technical troubleshooting assistance for hardware, software, and network problems
- Locate information to assist users
- Evaluate hardware, software, and network products
- Coordinate organization-wide support standards
- Perform needs assessment and provide purchase assistance for users
- Provide system installation assistance
- Provide training on computer systems and procedures
- Prepare documentation on computer use
- Perform computer facilities management tasks
- Assist users with software development projects

Figure 2-2  Common user support services

Figure 2-3 illustrates the variety of support services users need. User support, as a field within information technology, includes all of these functions. Not every organization provides all these services to its employees or clients, but organizations that provide user support offer at least some of these services to respond to employee or client needs.
Staff a Help Desk, Hotline, or Chat Session to Provide Information

Users who encounter problems with their computer system need a place to turn for information. A help desk, hotline, or chat session often meets this need for information. Providing information is one of the most common types of service provided by a user support organization. A help desk, hotline, or chat session can provide a variety of information services, such as:

- Respond to requests for product information
- Market and sell products and services
- Provide solutions to common problems
- Receive and log user complaints about product features
- Handle warranties and authorize product returns or exchanges

Figure 2-3  Common user support functions in organizations
Chapter 3 describes the client service and communication skills that support staff need in a help desk environment. Chapter 6 describes the operation of a help desk from the perspective of a support center staff.

Provide Technical Troubleshooting Assistance

Although a help desk, hotline, or chat session can handle common user problems and questions, some problems fall outside the help desk’s boundaries. Most organizations recognize the need for a level of technical troubleshooting that has the expertise to resolve intractable problems that occur. These problems can include hardware diagnosis, repairs, or upgrades, fixes or workarounds for difficult applications software problems, and troubleshooting network crashes or poor performance. Solutions to technical problems often require a level of support staff expertise that exceeds what a help desk or hotline can provide.

Chapter 4 describes some strategies for troubleshooting difficult technical problems. Chapter 5 provides examples of common user support problems.

Locate Information to Assist Users

A challenge that continually confronts user support staff is the need to locate information to resolve a user’s question or problem. Although organizations provide their employees with computers and software, they often do not supply manuals or other useful materials. In other cases, manuals get misplaced, lost, or thrown away by end users, or become obsolete. Users can use online help, which is sometimes excellent in commercial software products. But online help is often neither in-depth nor technical enough to help users solve every problem, especially difficult ones. And sometimes vendor documentation is just not very good. For their information needs, users often turn to the support staff. Therefore, the ability to access, search for, locate, and work with information is a critical skill for user support staff members. Information can exist in a variety of locations: printed manuals from vendors, trade and text books, online help, CD-ROM databases, Internet Web sites, interactive fax services, and automated telephone voice-response units. User support workers need to understand the characteristics of each of these information resources and be able to use them effectively. For example, the ability to ask the right question is an important skill needed to locate information quickly.

Several chapters in this text contain pointers to information resources that user support staff have found helpful. Appendix 1 suggests other information you may want to have in your support toolkit.
Evaluate Hardware, Software, and Network Products

Most organizations are constantly on the lookout for new technologies that will help their employees enhance productivity. Consequently, the user support center must continually research, compare, and evaluate new technology products and services, including hardware, software, and network products, against existing products. The user support staff must find answers to such questions as:

- Will a new product make employees more productive?
- Will a specific product meet employee needs better than another product?
- Should some or all users upgrade from software version 2000 to version 2003? Or wait until version 2005 or later?
- What features are important to evaluate in the purchase of a new computer?
- Will a particular system or software package be cost-effective?

Individual employees do not always have the information and expertise they need to make these decisions wisely. When employees make individual purchasing decisions, organizations can encounter compatibility, cost, usability, and productivity issues that can be difficult to resolve. For example, employees in the Accounting department of a small manufacturing organization may use the latest version of QuickBooks to prepare company financial statements. The Production department in the same company may use an older version of the QuattroPro spreadsheet to prepare and monitor its budgets. Consequently, the Production department cannot use the Accounting department’s data files unless Accounting personnel remember to save QuickBooks files in a format that is compatible with the older version of QuattroPro. This kind of software compatibility problem can cause wasted time, possibly require manual reentry of data, and affect employee productivity. The evaluation of new hardware and software products is an important, challenging, and ongoing task for user support staffs.

Chapter 8 describes some tools to help support staffs with product evaluation tasks.

Coordinate Organization-wide Support Standards

A task closely related to product evaluation is the establishment of support standards. Support standards are lists of computer products that an organization allows its employees to use and that it will support. Support standards limit the hardware, software, and network products that a support staff must be able to support. Therefore, standards reduce support costs. Support standards are important because it is impossible for an organization to support every hardware configuration marketed by all hardware vendors or all software packages. To arrive at a set of standards, the user support center evaluates competing products and often consults with users and management.
Chapter 8 describes the role of support standards in organizations.

**Perform Needs Assessment and Provide Purchase Assistance for Users**

In addition to evaluating computer products and establishing support standards, the support center staff tries to match supported products with the needs of each user. Occasionally the match between a user's needs and specific products is obvious. In other cases, support staff may perform a user **needs analysis** (or needs assessment), which is an investigation to determine the features and configuration of hardware and software (from among those supported) that will best match a user's specific needs. Based on the needs analysis, the support staff then can recommend the purchase or upgrade of a system to improve the user's productivity. Most support centers that offer this service also assist users with the paperwork required to purchase a system, such as justifying the purchase, placing an order, and processing the paperwork to pay for the system.

Chapter 9 describes how to perform a needs analysis for an end user.

**Provide System Installation Assistance**

Once an organization or individual user has purchased a system or upgrade, the support center may offer to unpack, set up, install, and configure the system for an end user. The purpose of this service is efficiency: the support center staff has the tools and expertise to make sure the installation is done correctly and can identify and solve many common installation problems that might frustrate an inexperienced user. Where applicable, the support staff can ensure that the appropriate network software is installed and configured to connect a computer to the organization's network. They can also install peripheral devices, such as printers and scanners, and install and configure driver software for these devices. Some end users might be able to perform these tasks, but user support staff members can often get the work done faster and with fewer errors because they tend to have more experience with system installations than end users do.

Chapter 10 describes the system installation process.
Provide Training on Computer Systems and Procedures

Users who have new hardware or software, or new job responsibilities, may require training to use their new or upgraded system effectively, or to use their existing system more efficiently. With proper training, users can become productive more rapidly than if they learn by trial and error. User support centers in many organizations provide end-user training. The support center may have periodic group training sessions, provide one-on-one training, or suggest ways to learn a new system that match a user’s personal learning needs and style. Training programs can include basic, introductory classes to help users get started quickly with a new system or with new software. Training can also provide experienced users with the knowledge and skills they need to use advanced features of hardware and software.

Chapter 11 provides guidelines on how to prepare effective user training materials and conduct training sessions.

Prepare Documentation on Computer Use

Although end-user training is a necessary and often efficient way to teach computer users how to use a computer system, documentation is equally important. Whereas a training session is generally a one-time event, documentation is always available to answer questions or to remind users how to perform a task they may perform only occasionally.

Documentation includes introductory “getting started” manuals for new users, explanations of organizational computer use procedures and guidelines, as well as “how to” tutorials and reference manuals on specific software products. It also includes online documentation in the form of help files, answers to frequently asked questions (FAQs), and e-mail responses to remote users.

Chapter 12 provides pointers on how to write documentation and other materials targeted to end users.

Perform Computer Facilities Management Tasks

Large, mainframe computer installations often employ a professional staff of computer operators; hardware, software and network maintenance engineers; and facilities managers who ensure that the computer systems run on a daily basis. In a distributed PC environment, the need to keep the computers operational is just as great. To accomplish this goal, user support centers often perform computer facilities management tasks such as network security, media backups, virus detection and prevention, ergonomic analyses, supplies management, preventive maintenance and repairs on hardware and peripherals, and other related tasks.
Chapter 13 describes some facilities management challenges, resources, and tools in an end-user environment.

Assist Users with Software Development Projects

Most user support centers do not provide software development or programming as part of their regular services to users. However, in some organizations, the support center staff may help users develop software applications to solve specific problems or meet specialized requirements for information. For example, support staff may advise users on the most effective way to program a difficult task in a spreadsheet.

Software development has long been considered the domain of the IS department. However, with today’s powerful application development tools, such as scripting languages, spreadsheets, database management packages, and Web-page development tools, end users often can develop applications independent of the IS department. But when end users encounter problems during the development process, they frequently turn to the support staff for assistance.

Supporting users by developing applications software can be a potential source of conflict between the IS department staff and the support center staff. User-developed applications may not include compatibility features, design standards, documentation, security, and other capabilities and controls that the IS department feels are necessary in a well-designed application. While software development is probably the least common service provided by user support centers, it is a service some support centers provide.

Because software development is an extensive topic, no chapter in this book is devoted specifically to software development tasks for support staffs. Interested readers should consult books dedicated to this topic, such as:


Although the missions of user support centers differ considerably, the tasks they perform define their service profile in an organization. Whereas most support centers provide help desk services and troubleshooting assistance, a smaller percentage provide documentation or product training. Few provide applications development assistance. A job applicant for a position in a support center should ask about the amount of emphasis placed on various user support tasks to obtain an accurate picture of the user support role in a particular organization.
The internal support function at Course Technology (CT) is part of the IT department, and since the company’s creation in 1989 has evolved from a technical support focus to a customer support focus. We now think of CT employees as clients, and we act as consultants to them. Our goal is to produce 100% client satisfaction.

**Organization.** We have three workstation support specialists and a manager, who support 260 employees. In the past, employees experiencing hardware or software problems would call one of these specialists for help. This worked in many cases, but not all. If a specialist was away from his or her desk, on the phone, or on vacation, the client didn’t know when the problem would be solved. We now use a help desk at our corporate parent’s facility to take calls, enter them in our call tracking system, and provide first line support. Only those problems that cannot be handled are passed off, via problem queues, to the CT help desk. The help desk manager constantly monitors the problem queue and assigns the tasks to the individual technicians based on expertise and availability. This allows individual technicians uninterrupted time to work on big projects or to improve their knowledge base through study.

**Tasks.** PC purchases are done in bulk with a yearly standard model for all employees. Our support specialists prepare master “ghost” images of a standard hard drive configuration that are heavily tested. They spend a significant amount of time upgrading users to new machines and preparing machines for “new hires.” They also help clients troubleshoot and solve problems, and train users on things like e-mail, the network, and dial-in access. Specialists sometimes prepare documentation. For example, if there is a new virus going around the office, a specialist will write instructions on how to identify and get rid of it, and will circulate the instructions to our clients. Their facilities management responsibilities include managing user accounts on servers, as well as file backup and recovery tasks. For a while, one support specialist held regular office hours to supplement on-call support by offering one-on-one help with standard applications or other issues.

We also have three business analysts who help individuals and departments with specialized software needs. Most applications they develop are custom database solutions. They also do group training.

**Standards.** We have company standards for hardware and software products, and we aim to maintain them. But having strict policies can sometimes conflict with getting the job done. Sometimes we find we have to be flexible in order to meet client requirements.
POSITION DESCRIPTIONS FOR USER SUPPORT STAFF MEMBERS

Positions in the user support industry often include some combination of the tasks outlined in the previous section. Position descriptions reflect how an organization structures its user support function. For example, an organization with a full-fledged support center is more likely to include in a user support position description the ability to analyze employee computer needs and recommend hardware and software purchases. On the other hand, an organization that relies primarily on part-time support positions is much less likely to expect applicants to assess user needs or to be able to train end users. Similarly, an organization that provides a hotline service to external clients often does not expect its staff members to be able to provide facilities management or a wide variety of other support services to clients.

To understand more about the specific job of a user support center staff member, let's look in detail at three position descriptions of actual support positions. The first position description, shown in Figure 2-4, describes the duties and responsibilities of an end user support analyst at Calpine Corporation, an electric utility in California. The position is part of an Information Services group at Calpine, called Management Information Systems (MIS). The description provides a good picture of the wide range of activities you might encounter in user support positions in today's job market. If you are a prospective user support center employee, you should know that managers would probably look for these kinds of capabilities.

The second user support position description, shown in Figure 2-5, is from Stream International, a national support services vendor that provides a range of information services to other organizations, including contract end-user support. Organizations that outsource their support function would consider a vendor like Stream International. For example, when Microsoft unveils a new software product and expects a large volume of support calls, it may contract with Stream to augment its own support staff. The position description describes a support services representative. Employees in these positions primarily provide telephone support to client organizations that have purchased Stream's help desk support services. Compare the responsibilities in this position, which is primarily a telephone support position, with those listed in the Calpine position, which primarily provides on-site support to internal employees.

The third position description represents a recent trend in the user support industry: a position that combines network support with user support. The position description, shown in Figure 2-6, is for a network technical support specialist at St. Petersburg Junior College. Although many of the job duties in the network technical support specialist position description are similar to those of other user support positions, some of the duties are more like those you would expect to find in a position description for a network administrator. This example emphasizes the wide variety of tasks that user support specialists may be expected to perform, depending on the specific needs of the organization in which the support position is located.
Knowledge, Skills, and Abilities

One way to better understand the requirements for a specific position is to analyze them in terms of KSAs, the knowledge, skills, and abilities needed to perform the job. Human Resources personnel often analyze a position description and prepare a check list of KSAs to screen applicants.

Knowledge. Each position includes a description of what an employee needs to know in order to do the job. The knowledge component may be stated in terms of a specific number of years of education, a degree in a specified field, or a list of topics an employee is expected to know.
FIGURE 2-5 Position description for support services representative at Stream International

St. Petersburg College

POSITION TITLE: Network Technical Support Specialist

DEPARTMENT: Academic Computer Support

BASIC FUNCTION:

Provides technical network expertise for the instructional labs, office computers, printers, network electronics, and other network devices. Cooperates with other technical staff in installing, maintaining, and troubleshooting technical equipment. The position is primarily assigned to work at one or two of the operating sites of the college.

RESPONSIBILITIES:

- Provides the first line of on-site network technical support to resolve network-layer issues related to passive and active network hardware, servers, IP address problems, network connection problems, and network-centered system configuration issues.
- Works as the direct information conduit and liaison between the end users and the Administrative Information Systems managers responsible for centrally managed network-centric services like e-mail, student registration and course management systems, the finance system, Web-based systems, the college-wide area network, and other information management systems.
- Works in cooperation with the site computer support specialist to install, maintain, and troubleshoot end-user computers, printers, scanners, and other network devices.
- Assists in the design of network systems.
- Performs preventative maintenance on network systems.
- Researches network-related solutions to technical and business process problems.
- Performs related duties as required.

FIGURE 2-6 Position description for network technical support specialist at St. Petersburg College

Copyright © 2004 by Course Technology. All rights reserved. This publication is protected by federal copyright law. No part of this publication may be reproduced without prior permission in writing from Course Technology. Some of the product names and company names have been used for identification purposes only and may be trademarks or registered trademarks of their respective manufactures and sellers.
Examples of knowledge required for the end user support analyst position listed in Figure 2-4 include:

- Knowledge of basic computer operation
- Knowledge of applications software

**Skills.** Each position requires specific job skills or tasks that a support specialist must be able to perform well. User support positions may require advanced skills in one or more areas. In general, a skill is a task that a support specialist can perform better (at a higher level of effectiveness or efficiency) with practice and experience.

Examples of skills required for the end user support analyst position shown in Figure 2-4 include:

- Skill in troubleshooting hardware and software problems
- Skill in configuring desktop computers to optimize performance

**Abilities.** Each position requires special tasks that a support specialist must be able to perform. Abilities are functions that an applicant can either do or not do. For example, some positions may specify abilities such as being able to lift 50-pound boxes or communicate in Spanish. Other abilities are based on combinations of knowledge and skills that help a support specialist perform a specific task.

Examples of abilities required for the end user support analyst position shown in Figure 2-4 include:

- Ability to work as a member of a team
- Ability to write documentation

If you have difficulty with the precise difference between skills and abilities, don’t worry. People often use the terms interchangeably.

If you want to learn more about the KSAs required for entry-level positions for computer support specialists, visit America’s Career InfoNet Web site at www.acinet.org/acinet/ksas1.asp?soccode=151041&stfips=41. The Web site includes a short video on help desk technicians (requires RealOne Player to view, which is a free download). You can also get information on the employment outlook and typical wages for computer support specialists for your state at this site.

How does one person ever learn to do all the tasks described in these position descriptions? Few employees in an entry-level position start on day one with all the knowledge, skills, and abilities they need to perform every task listed in the job description. Most user support positions include a training program before a support employee ever answers an actual telephone call or installs and configures a piece of network hardware. Most user support positions also include a significant amount of continuing education or on-the-job learning. So don’t get discouraged if you can’t do everything in these job descriptions today.
To assess some of your skills with software tools, you can try a simple assessment activity at the ACE Training Web site, www.ace.co.nz/tools/skills/index.asp (registration is required, but the skill assessment is a free service).

If you compare the services offered by user support centers and the job duties in the position descriptions with the table of contents, you will find that this book is organized around these job duties—many of the primary tasks of a support staff member are described in this book. Chapters are devoted to each of the major topics to expose you to the many and varied responsibilities that are required of user support staff in today’s job market.

**Alternative Career Paths for User Support Workers**

Many user support workers select this field as an entry into other, more advanced positions. Into which careers can an entry-level position in user support lead?

**Programmer/Developer**

Some user support workers who are technically oriented want to work toward a position as a computer programmer or Web applications developer. Workers in these positions write code (instructions) in a computer language such as C++, Java, or Visual Basic, or in a scripting language such as JavaScript, VBScript, Perl, or PHP. Advancement into a programmer/developer position usually requires coursework in programming languages and a four-year degree.

**Network Technician**

Another career path for user support workers is into network technical positions. These positions often involve tasks such as installing and configuring network servers and client systems, network cabling and troubleshooting, performance analysis and configuration, facilities management, and related tasks. Although many user support workers perform simple network administration and monitoring tasks, a career as a network technical support worker usually requires a two- or four-year degree that specializes in advanced network topics.

**Web Site Maintainer**

A Web site maintainer is a worker who uses software packages, such as Dreamweaver, FrontPage, GoLive, or CityMax, to build and maintain Web sites. These positions are less technically demanding than Web applications developers described above, but require someone who has a good eye for visually pleasing layouts and understands Web navigational tools to make Web sites usable. A Web site maintainer can take coursework or read self-teaching books on site design and on the software tools required to perform these tasks.
Support Management

End-user support workers who enjoy the challenge of user support can aspire to a lead worker or supervisory position in a support group. These workers often plan and schedule the work of other support employees as well as prepare budgets, hire and evaluate support staff, and work with user departments or groups to better understand their support needs. Many colleges and vocational/technical schools offer courses aimed at workers who want to become supervisors or managers. Courses that are designed for beginning supervisors or managers of technical and professional employees are especially useful for those who aspire to a support management position.

Project Management

A career path that many entry-level support workers do not consider, but perhaps should, is project management. Information Technology projects in both business and government often require leaders who can successfully manage other workers, as well as budgets, schedules, and deadlines.

Chapter 7 describes some project management tools you should learn about if you have an interest in project management as a career. Some schools and colleges offer coursework on project management and how to use project management software tools.

Trainer and Technical Writer

Many entry-level support positions include some percentage of time devoted to end-user training and technical writing, which are described in detail in Chapters 11 and 12. Support employees who enjoy these tasks may want to specialize in either of these areas. A full-time trainer designs, prepares, presents, and evaluates training materials not only for computer users, but also for other employees. Common training topics include company orientations for new employees, introductory supervisory training, time and project management, stress management, conflict resolution, and other subjects. A full-time technical writer designs, writes, and edits a variety of technical documentation, such as brochures, newsletters, user’s guides, management reports, Web-based materials, and other printed and online documents. A support employee who is interested in training as a career should take some “train-the-trainer” courses or courses in education. Those who aspire to technical writing careers can take additional preparatory coursework in a college or vocational/technical school.

Security Specialist

A growing job category after the attacks on the United States on September 11, 2001 is computer security specialist. Workers in these positions develop and implement plans to protect computer systems and networks from various sources of threat that could result in
destroyed, lost, or stolen information. These positions generally require additional study and specialization beyond a basic user support degree.

To learn more about the job duties, knowledge, skills, and abilities associated with the jobs described in this chapter, visit the Occupational Information Network (O*NET) Web page at online.onetcenter.org/gen_search_page. Enter a keyword from the list below:

<table>
<thead>
<tr>
<th>Job Category</th>
<th>O*NET Keyword</th>
</tr>
</thead>
<tbody>
<tr>
<td>User support specialist</td>
<td>Computer support specialist</td>
</tr>
<tr>
<td>Network support specialist</td>
<td>Network administrator</td>
</tr>
<tr>
<td>Computer security specialist</td>
<td>Computer security specialist</td>
</tr>
<tr>
<td>Computer programmer</td>
<td>Computer programmer</td>
</tr>
<tr>
<td>Trainer</td>
<td>Training specialist</td>
</tr>
<tr>
<td>Technical writer</td>
<td>Technical writer</td>
</tr>
<tr>
<td>Project manager</td>
<td>Information system manager</td>
</tr>
<tr>
<td>Network technical support specialist</td>
<td>Network analyst</td>
</tr>
</tbody>
</table>

**Chapter Summary**

- End users who are not computer professionals often need help when they encounter problems with their computer system. Help can be organized in several ways, including peer support from a colleague, support from a user support group, a help desk/hotline/chat session operation, a user support center, directly from the technical staff in the Information Services department, or from a vendor who contracts to provide support services.

- Users need a variety of support services, depending on how they use their computers and their level of expertise. User support centers frequently provide help that includes: operating a help desk, hotline, or chat session; troubleshooting difficult problems; locating information; evaluating new hardware, software, and network products; establishing organization-wide product support standards; analyzing and assessing user needs; installing systems; training users; writing user documentation; managing computer facilities; and assisting with software development projects.

- The job descriptions for support staff members reflect the variety of services a support center offers. Many jobs require a combination of knowledge, skills, and abilities in hardware (microcomputers and mainframes), operating systems, applications software, networks, interpersonal communications, problem solving and analysis, and supervision or leadership.
KEY TERMS

chat session — A Web-based interactive service that allows two or more users who are both online to communicate by alternately typing and viewing messages; also called instant messaging.

computer facilities management — Support services to help users with information and questions about security, media backups, viruses, ergonomics, purchase of supplies, preventive maintenance, and other tasks required to keep a computer system operational.

computer user support — A job function or department in an organization that provides information and services to employees or clients to help them use computers more productively in their jobs or at home.

help desk — A single point of contact for users in need of technical support, whether employees or external clients; may provide information and problem-solving services face-to-face, by telephone, by e-mail, or in an online chat session.

hotline — A telephone number that an internal or external user can call to reach a help desk service.

information center — An older name for a user support center.

KSAs — The knowledge, skills, and abilities required to perform a job.

needs analysis — An investigation to determine the features and configuration of hardware and software that will best match a user's specific needs; also called needs assessment.

outsource — An arrangement or agreement in which an organization contracts with a vendor that specializes in user support functions to handle support incidents for internal and external users.

peer support — An informal level of user support whereby colleagues in an organization or department exchange information and provide assistance about computer use and problems encountered.

support standards — A list of computer products that an organization allows its employees to use and that it will support; product support standards limit the hardware, software, and network components that a staff supports in order to reduce support costs.

technical support — A level of user support that focuses on high-level troubleshooting and problem solving; whereas computer user support deals with a broad spectrum of support issues, technical support deals with the more complex and difficult problems that users encounter.

user support center — A group or department in an organization that provides a wide range of services to an organization’s computer users who are primarily internal; services may include a help desk, consulting on product purchases, training, documentation, and facilities management.

user support group — A formal workgroup that is organized to provide computer user support services.
CHECK YOUR UNDERSTANDING

1. True or False? Small companies often meet their need for computer support by combining user support with another position.

2. True or False? A help desk provides a single point of contact for computer users in need of support.

3. Help desk services can be provided by ________________ .
   a. a physical location where users can get help
   b. a telephone hotline number users can call for help
   c. an e-mail address where users can send a message for help
   d. any of the above

4. Which of the following statements is an advantage to outsourcing as a way to provide user support?
   a. Outsourcing is a low-cost support method.
   b. Outsourcing develops in-house support expertise.
   c. Outsourcing takes advantage of expertise a company may not have.
   d. Outsourcing provides on-site assistance.

5. True or False? The purpose of product standards is to limit the hardware and software configurations a support staff must support and therefore reduce support costs.

6. The process of matching a user’s needs with supported computer products is called a(n) ________________ .

7. In order to make effective use of a new or upgraded computer system, a user may require ________________ .
   a. user training
   b. programming
   c. facilities management
   d. a computer operator

8. ________________ are lists of approved and recommended computer products that an organization is committed to support.

9. True or False? End users do not encounter the same kinds of security, media backup, preventive maintenance, and ergonomic problems that are common in mainframe computer facilities.
62 Chapter 2 Introduction to Computer User Support

10. Which of the following responsibilities would you least expect to find in a position
description for a user support specialist?
   a. troubleshoots problems
   b. recommends product standards
   c. operates a mainframe computer
   d. installs hardware and software

11. Printed or online tutorial or reference materials for computer users is called
_________________.

12. True or False? The ability to search for, locate, access, and work with information is an
important job skill for user support staff members.

13. What you need to know or be able to do to perform in a job is called
_________________.

14. A Web-based communication between two Internet users who are online at the same
time and alternately type and view messages is called _________________.
   a. peer support
   b. e-mail
   c. hotline
   d. chat session

Discussion Questions

1. Do you agree or disagree with the following statement: “Facilities management is more
of a concern with large mainframe computer systems than in an end-user computing
environment.” Explain your position.

2. Which is more important to a user support staff member, the ability to solve difficult
technical problems or the ability to communicate with a difficult user? Why?

3. How do you think the knowledge, skills, and abilities needed for telephone support are
different from the KSAs needed to provide e-mail or chat session support? Compare
these to the KSAs needed for face-to-face support.

Hands-On Projects

Project 2-1

Explore an organization’s user support services. Find the user support function at the
organization where you work, the school you attend, or another organization. Learn how its
user support is organized and where the support function is located within the larger
organization, and get a list of the services it provides. If possible, ask two computer users whether they feel the user support function is responsive to their needs. Write a summary of your findings.

**Project 2-2**

**Evaluate user support position descriptions in your organization.** Locate one or more position descriptions for user support staff members at your organization or your school. How do the duties and responsibilities compare with those described in this chapter? What are some similarities? What are some differences?

**Project 2-3**

**Evaluate user support position descriptions in government and national databases.** Use the Internet to locate position descriptions for user support jobs in government and other organizations. Find information for positions in your state government or local employment area. Some Internet sites you could visit are listed in Table 2-1. How do the duties and responsibilities you found compare with those described in this chapter? What are some similarities? What are some differences?

<table>
<thead>
<tr>
<th>Table 2-1</th>
<th>Internet sites with information about user support positions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>URL</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>hr.dop.wa.gov/lib/hrdr/specs/00000/03271.htm</td>
<td>State of Washington job description for an information technology systems specialist</td>
</tr>
<tr>
<td><a href="http://www.ci.des-moines.ia.us/departments/HR/Job%20Descriptions/User%20Support%20Technician.htm">www.ci.des-moines.ia.us/departments/HR/Job%20Descriptions/User%20Support%20Technician.htm</a></td>
<td>City of Des Moines, Iowa, job description for a user support technician</td>
</tr>
<tr>
<td><a href="http://www.computerjobs.com">www.computerjobs.com</a></td>
<td>IT employment Web site</td>
</tr>
<tr>
<td><a href="http://www.JustHelpDeskJobs.com">www.JustHelpDeskJobs.com</a></td>
<td>Site specializes in user support positions</td>
</tr>
<tr>
<td>jobsearch.monster.com</td>
<td>Global online network for careers</td>
</tr>
<tr>
<td><a href="http://www.dice.com">www.dice.com</a></td>
<td>Job search Web site for computer professionals</td>
</tr>
</tbody>
</table>
64 Chapter 2  Introduction to Computer User Support

Project 2-4
Evaluate user support positions. Select a position description for a user support staff in this chapter or one you have found. Answer the following questions:

1. Would you classify the job described in the position description as primarily a technical position or a people-oriented position? Why?

2. Do you think the position description requires a person who is a specialist (one with depth of knowledge) or a generalist (one with breadth of knowledge)? Why?

3. What personal qualities do you think would be necessary for someone to be successful in the position?

If you are a member of a project group, meet with the other members and discuss your answers to these questions. Write a one-page summary of your conclusions.

Project 2-5
Maximize power users. Sometimes people use the term “power user” to describe users who have extensive experience, excellent breadth and depth of knowledge, and well-developed skills. Assemble a team of at least three classmates or coworkers, and discuss the following questions:

1. What are some characteristics of a power user? Be as specific as possible.

2. Are you a power user? Is anyone in your group?

3. Is it necessary to be a power user, according to you or your group’s consensus definition, in order to be a user support agent?

4. How can an organization make maximum use of a power user to assist with support functions within a department?

Write a one-page summary of your conclusions.

Project 2-6
Compare your KSAs to a user support position. The position description in Figure 2-7 is an example of a user support position in a government agency. List the knowledge, skills, and abilities (KSAs) you would need to perform the duties in the position description. Don’t worry too much about the differences between skills and abilities. Compare your list of KSAs with three classmates or coworkers. Where do you agree and disagree? How do the KSAs you listed correspond to courses you are taking now or have taken in the past? Which additional courses could you take to satisfy some of the KSAs on your list?
To compare your personal skills with those in some basic job categories, visit the Occupational Information Network (O*NET) Web site at onetcenter.org/gen_skills_page. Check the skills you have or are working to build in the list of skills and learn which job categories best match your skills. Is Computer Support Specialist on your list? Click the ‘Skills Matched’ column to learn why or why not.

Figure 2-7  Position description for information systems specialist in Oregon

State of Oregon
DEPARTMENT OF ADMINISTRATIVE SERVICES
Human Resource Services Division
INFORMATION SYSTEMS SPECIALIST 1

The ISS 1 provides support in operating, maintaining and installing systems and helps staff use the systems.

This is an entry-level position.

The ISS 1 has daily contact with system users to answer questions, solve problems and clarify instructions and with other Information Systems support staff for assistance with solving problems and to ensure conformity of methods and practices.

The ISS 1 works within well-defined guidelines and receives supervision from a supervisor or team leader. Work is spot-checked for accuracy and completed assignments reviewed for conformance with timelines, production standards and policies and procedures.

Processing standards and procedure manuals provide guidelines to ensure conformity of operations. Technical manuals are used for references and assistance is readily available from other IS staff or vendors for solving non-routine problems and clarifying instructions on new procedures or assignments.

1. Customer Assistance (help, use and fix)
   Answers common user questions from internal employees about Software, Hardware, Communications or Data. Identifies problem by asking established questions and using basic diagnostics. Provides operational assistance. Follows established processes to fix problems or coordinates solutions with other staff resources. Tracks and reports problems. May test new features. Provides one-on-one operational training to users.

2. Operations (day-to-day)
   Tasks in this function relate to keeping the computer operations going on a day-to-day basis. This includes installation, performance monitoring, access, security, backups, scheduling, inventory management and processing orders.

   Uses precedents and basic troubleshooting techniques and does installations following established instructions. Examples of typical installations at this level include installing established software with limited impact to other software or simple hardware memory upgrades. Monitors daily performance of communications system, software or database and identifies and reports performance problems and issues.

Copyright © 2004 by Course Technology. All rights reserved. This publication is protected by federal copyright law. No part of this publication may be reproduced without prior permission in writing from Course Technology. Some of the product names and company names have been used for identification purposes only and may be trademarks or registered trademarks of their respective manufactures and sellers.
Project 2-7

List KSAs for advertised positions. Find two ads in the Help Wanted section of a city newspaper (the Sunday edition usually carries the most Help Wanted ads) or on a Web site such as www.monster.com, www.dice.com, or www.computerjobs.com. Locate one for a position that supports internal users in an organization and one for a position that supports clients of a hardware or software vendor. For each ad, list the knowledge, skills, and abilities (KSAs) the position requires. At the end of your lists, discuss whether the KSAs for an internal and external support position are different, and if so, how.

Project 2-8

Interview a user support staff member. Find an organization that has a user support or help desk staff (such as one at your workplace or school), and interview a member of the staff. Ask the staff member if he or she will share the position description for his or her position with you. Find out the answers to the following questions:

1. How does his or her position description and job duties compare with those in this chapter?
2. Does he or she actually perform tasks that are not listed in the official position description?
3. What percentage of his or her time is spent on each job duty in the position description?
4. How has his or her job duties changed in the last couple of years?

Write a one-page summary of what you learned from the interview.

Case Projects

1. Training Facility Problems at Cascade University

Mary Ann Lacy is the coordinator of Cascade University’s computer training facility. The facility offers courses in computer applications software to Cascade’s regular students and faculty, and local organizations that send their employees to Cascade’s Continuing Education Division to upgrade their computer skills.

The computer training facility consists of two rooms: a training facility where scheduled classes are conducted and an open lab facility where students can work on assignments outside of class time. The entire training facility is open from 8 A.M. to 5 P.M., Monday through Friday. Each room is equipped with 24 Pentium 4 computer systems. Mary Ann operates a Windows 2003 server so that students can access software on the network, store data files on the server, and access e-mail and the Internet. She also teaches some of the continuing education classes in the training facility. Cascade University’s computer faculty members teach in the training facility when it is not in use for continuing education classes.
Mary Ann recently conducted a user satisfaction survey to learn how Cascade students, faculty, and continuing education students rated the entire training facility. She was pleased that users were very satisfied with the equipment because she tries to keep the systems properly maintained and gets units repaired as soon as a problem arises. The Electronics Shop at Cascade maintains the hardware. The users also expressed satisfaction with the operation of the network server and with the selection of software that is available to them. However, Mary Ann was less pleased about some of the comments users wrote on their survey forms. Here is a sample of some comments she was willing to share:

“I am an advanced user of the open lab. Some of the inexperienced students have discovered that I know quite a bit about the hardware and the network. They ask me a lot of questions. I don’t mind answering them, but when I have a class assignment due, I can’t take time out to help everyone who has a question. After a while, some of the questions get pretty repetitious.”

“The open lab runs smoothly when the coordinator is in the room. But when she is next door teaching a class in the training facility, there is no one to ask for help. I feel badly when students have to interrupt her training session to report a problem like a server crash or even to get a new ink cartridge put in the printer.”

“The software manuals are in a locked cabinet. When I need one, I have to track down Mary Ann to get the key. Why can’t the documentation cabinet be left unlocked?”

“Last year, there was seldom a wait to get a computer in the open lab. This year, with more classes in the training facility, the wait is longer. It would be nice if the lab were open more than 8 to 5. Some evening and weekend hours would be great.”

Mary Ann has decided to ask a small group of training facility users, consisting of students, faculty, and continuing education students, to meet to discuss the responses to her survey. If you were a member of the group, what advice would you give Mary Ann that would address the concerns described about the operation of the training facility? What support issues have users raised? What are some other ways Mary Ann could address these issues? Are some alternatives more expensive than others?

2. Employment Trends in the User Support Field

Research the current employment trends in the user support and help desk industry. Look for both current employment statistics and forecasts of the future need for workers with the job titles described in this chapter. Also, see if you can locate employment statistics and outlook for your local area, region or state. Write a report on your findings.
Here are a few Web resources that contain current information as of the publication date of this book. Can you find more up-to-date information?

- www.microsoft.com/traincert/training/careers/trends.asp
- www.itaa.org/workforce/studies/03execsumm.pdf (requires Acrobat Reader)
- www.dol.gov/wb/factsheets/hitech02.htm
- www.computerworld.com/careertopics/careers/labor
- biz.yahoo.com/prnews/030827/sfw014_1.html

3. Computer User Satisfaction at Indiana University Bloomington

Indiana University Bloomington (IUB) is a public university in Bloomington, Indiana. University Information Technology Services (UITS) conducts a survey of its students, staff, and faculty to measure their satisfaction with computer use on campus. A summary of the results of their survey for 2003 is available at about.uits.iu.edu/~uitssur/2003/iub/summary03.html. Most questions are answered on a scale of 1 to 5, where 5 is very favorable. Analyze the results of the survey and respond to the following:

1. Use responses to questions 3 through 6 to write a description of a typical (average) computer user at IUB.
2. Based on the responses to question 5a, which kinds of computers should be supported by UITS staff? Which should not be supported?
3. Based on responses to question 8, which e-mail software should be supported by UITS staff? Which should not be supported?
4. Describe and explain any differences you see between students, staff, and faculty in the kind of e-mail software used.
5. Based on the responses to question 12, if you were on the computer support staff in UITS, what services would you target for improvement over the next year?
6. Are users at IUB satisfied with the computer services they receive? Explain your answer.

4. Productivity at Re-Nu-Cartridge

For background information about Re-Nu-Cartridge, see Case 4 in Chapter 1.

Re-Nu-Cartridge currently has about 25 desktop computers. These machines range from 386s to the latest Pentiums and run a variety of software. Most employees use Microsoft Word for word processing (but there are several versions in use including 2.0, 6.0, 97, and 2000), and even one user who uses AmiPro. AmiPro is used by Joleen, the executive secretary at Re-Nu-Cartridge. Joleen learned AmiPro more than ten years ago, and says that
she is used to the program, that it meets her needs very well, and that she doesn’t want to learn to use a new word processor. She has told CEO Fred Long that she would rather retire than learn a different word processor.

Fred says he is aware of a growing frustration among his employees. During the last six months, he has talked with several of them about the computer situation at Re-Nu-Cartridge. The employees are particularly concerned about how hard it is to get help with computer problems when they need it. Several said they feel that they are on their own whenever they run into problems with their computers.

Fred says that most of the four departments (manufacturing, retail sales, marketing, and administration) have a person whom everyone recognizes as the computer “expert.” For example, the head bookkeeper, Patricia, is very knowledgeable and willing to help people in the administrative office when they have problems with Lotus 1-2-3 or with the accounting program that Re-Nu-Cartridge purchased to prepare financial reports. However, employees in the administrative office point out that she is not always available when they need help.

Examples of some of the complaints Fred hears from employees include:

- They can’t find the manuals when they want to look up something.
- Department computer “experts” are frequently busy, so employees have to wait for help with a problem.
- Employees occasionally lose data because of hardware or software problems and lose time when they have to reenter the data.

When employees at Re-Nu-Cartridge need new hardware or software, they usually talk to one or more of the computer experts or other employees who have computers to learn how they like their systems and what they would recommend for purchase. This procedure seems to have worked well in the past, although some employees report that they are sometimes confused when they get conflicting recommendations, depending on whom they talk with.

Fred has approached you for advice about dealing with the frustrations he hears from his employees. He is concerned about what appears to be both a productivity and a morale problem among his employees. Either by yourself or working with a team of coworkers or classmates, answer these questions:

1. What problems do you see at Re-Nu-Cartridge based on Fred’s description of the situation. (List as many problems as you can.)

2. Which of these problems are technical and which ones are organizational?

3. What recommendations would you make to Fred about solutions he should consider to address the problems you listed? (Don’t worry too much at first about whether your recommendations are feasible or not; list as many possible recommendations as you can.)

4. Which solutions are more feasible than others? Why?

Write a report that summarizes your analysis.