

About the Presentations

- The presentations cover the objectives described in the opening of each chapter.
- All chapter objectives are listed at the beginning of each presentation.
- You may customize the presentations to fit your instructional needs.
- Some figures from the chapters are included. A complete set of images from the book can be found on the Instructor Companion website.



Chapter 1

Introduction to Computer User Support

**A GUIDE TO
COMPUTER USER SUPPORT
FOR HELP DESK AND SUPPORT SPECIALISTS
SIXTH EDITION BY FRED BEISSE**

Chapter Objectives

- How changes in computer technology over time have affected computer use
- Ways to classify end users
- Resources computer users need
- Major categories of end-user software
- Common problems encountered by users

Chapter Objectives (continued)

- Job market demand for user support workers
- Common ways to organize and provide support services
- Typical position descriptions for user support staff
- Knowledge, skills, and abilities required for an entry-level support positions
- Career paths for user support workers

End-User Computing

- **End-user computing:** the use of computer technology for both business and personal use
- **Knowledge worker:** an employee whose primary job is to collect, prepare, process, and distribute information
- **Graphical user interfaces (GUIs):** screen images that enable users to access software features and functions intuitively, using a mouse or pointing device

Milestones in the Adoption of Computer Technology

Decade	Primary Types and Uses of Computer Systems
1940s	<ul style="list-style-type: none">● Invention of central processing units and peripheral devices
1950s	<ul style="list-style-type: none">● Early use of computers in large corporations
1960s	<ul style="list-style-type: none">● Widespread use of large-scale computers● Early use of smaller, workgroup computers
1970s	<ul style="list-style-type: none">● Widespread use of workgroup computers● Terminal access by workers to large-scale and workgroup computers● Early use of personal computers

Milestones in the Adoption of Computer Technology (continued)

-
- | | |
|-------|---|
| 1980s | <ul style="list-style-type: none">● Widespread use of home and business personal computers● Availability of mass-market application software and GUI personal computer operating systems● Early use of data communications and networks to connect personal computers to each other and PCs to larger systems |
|-------|---|
-
- | | |
|-------|---|
| 1990s | <ul style="list-style-type: none">● Widespread use of data communications and local area and wide area computer networks● Growth of distributed computing● Rapid growth of the Internet as a global network |
|-------|---|
-

Milestones in the Adoption of Computer Technology (continued)

-
- | | |
|-------|--|
| 2000s | <ul style="list-style-type: none">● Increased use of the Internet for electronic business and business-to-business transactions● Availability of very low-cost PCs● Development of wireless communication technologies |
| <hr/> | |
| 2010s | <ul style="list-style-type: none">● Widespread use of a variety of mobile devices and technologies for business and personal use● Increased use of the Internet as a backbone for cloud computing |

The 1980s and 1990s: The Growth of Decentralized Computing

- The backlog of requests for new computer applications
- An increase in the number of knowledge workers
- The availability of inexpensive personal computers
- The availability of inexpensive productivity software
- The development of user-friendly graphical user interfaces

Distributed versus Cloud Computing

- The 1990s and 2000s
 - **Distributed computing:** computer resources are distributed throughout an organization according to the location and needs of workers
- The 2010s
 - **Cloud computing:** computer resources are stored and processed centrally on powerful Internet servers, but delivered locally via software applications (apps).

Classifying End Users

- **Environment:** Personal (home) user or work (corporate, organizational, enterprise) user
- **Skill level:** Novice, semiskilled, or expert
- **Frequency of use:** Occasional, frequent, or extensive
- **Software use:** Word processing, email, accounting, or others (see “End-User Applications Software” in this chapter)
- **Features used:** Basic, intermediate, or advanced (power users)
- **Relationship:** Internal user (coworker) or external user (client)

Relationship to Support Provider

- **Internal user:** a technology user who works in the same organization that provides support – an in-house client
- **External users:** clients or customers of an organization
 - Retail customers of hardware and software vendors
 - Corporate users who purchased products or services from a support services vendor

Resources End Users Need

- Basic hardware
- Add-on peripherals
 - **Peripheral devices:** hardware add-ons that plug into a computer's system unit
- Hardware maintenance and upgrades
- Software and software upgrades

Resources End Users Need

(continued)

- Supplies
- Data and information
- Technical support
- Facilities, administration, and overhead

Total Cost of Ownership (TCO)

Basic hardware

- + Add-on peripherals
- + Hardware maintenance and upgrades
- + Software and software upgrades
- + Supplies
- + Data and information
- + Technical support
- + Facilities, administration, and overhead

=====

TCO!

End-User Application Software

- Electronic mail and instant messaging (chat)
- Web browser
- Word processor
- Spreadsheet
- Database management
- Presentation graphics
- Planning and scheduling
- Desktop publishing

End-User Application Software

(continued)

- Website development
- Educational and entertainment software
- Social media
- Enterprise applications
- Industry-specific applications

Problems End Users Experience

- **Waste of resources**
- **Theft of resources**
- **Security threats**
- **User mistakes**
- **Invasion of privacy**
- **Health problems**
- **Computer crime**
- **Abusive users**

Figure 1-3 Common problems related to end-user computing

Waste of Resources

Examples:

- Purchase decision by user who lacks expertise
- User spends excessive time trying to solve a problem
- Worker spends time on non-job-related activities

User Mistakes

Examples:

- User enters incorrect spreadsheet formula
- User deletes or uninstalls needed software
- User loses data because information is not backed up

Computer Crime

Examples:

- Worker tries to profit from valuable company information
- User becomes a victim of identity theft by revealing bank account information

Theft of Resources

Examples:

- User illegally copies or uses computer programs or proprietary information (**piracy**)
- Worker uses company Internet access to sell items online
- User fails to turn in or report lost USB flash drive
- Worker installs company's software on home PC

Invasion of Privacy

Examples:

- User accesses confidential medical information of family and friends
- User inadvertently downloads spyware that communicates personal information on the Internet

Abusive Use of Technology

Examples:

- Worker sends unwanted email to coworker
- User displays off-color material visible to coworkers

Security Threats

Examples:

- User inadvertently downloads virus software or keystroke logger onto office network
- User forwards email attachments contaminated with a virus
- User sends spam virus warnings that are hoaxes

Security Threats (continued)

Computer virus: software created with malicious intent to destroy information, erase or corrupt software, or adversely affect the operation of an infected computer or network

Keystroke logger: malware program that captures keystrokes and transmits captured information to an external site

Health Problems

Ergonomics: a field that studies how to design a workspace that promotes worker health, safety, and productivity

Examples:

- User develops **carpal tunnel syndrome** due to inadequate work breaks
- Job stress forces user into early retirement
- Employer refuses to supply ergonomic office furniture

Addressing the Need for User Support Workers

1. Economic recession (2007-2009)
 - Unemployment increased to over 10 percent
 - Less user support employment than in the 1990s
2. Some technical support jobs transferred overseas
3. Increase in technical support work through temporary employment agencies
4. Expansion of mobile technologies creates demand for support workers

Addressing the Need for User Support Workers

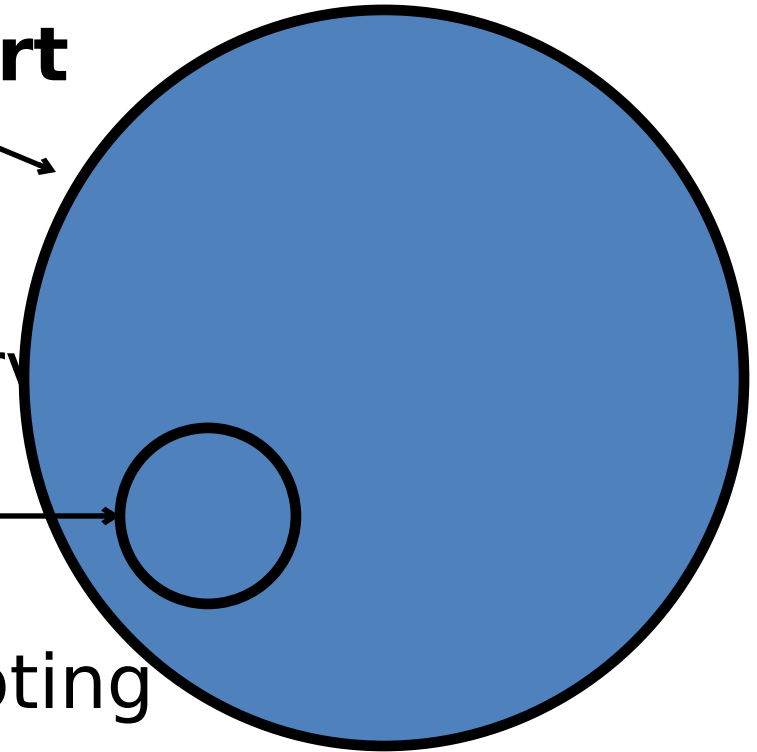
(continued)

U.S. Bureau of Labor Statistic estimates the need:

- Computer Support Specialists
 - 2010: 600,000 workers > 2020: 700,000 (+17%)
- Network Support Specialists
 - 2010: 345,000 workers > 2020: 445,000 (+28%)

User versus Technical Support

- **Computer user support**
 - Lower level services
 - Help desk services
 - Broad spectrum of services
- **Technical support**
 - Higher level services
 - Advanced troubleshooting
 - Narrower focus



How Organizations Provide a User Support Function

- Peer support
- Part-time user support
- User support worker or work team
- Help desk support
- User support center
- User support as an IT responsibility
- User support outsourced to a vendor

Forms of User Support

- Peer support: informal; colleagues assist their coworkers
- Part-time support: some small organizations cannot justify full-time support staff
- User support team: formal workgroup provides support services
- Help desk: a single point of contact for users (internal or external) in need of technology support services
 - Physical location
 - Telephone hotline
 - Via email, website, or chat service

Forms of User Support (continued)

- User support center (information center): provides a wide range of support services to internal users
- User support as IT responsibility: user support may be organized as part of the Information Technology (IT) department
- User support outsourced to a vendor: an organization contracts with a vendor to provide user support to internal or external users through a signed agreement

User Support Services

- Staff a help desk, hotline, or chat service 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 technology use and operating procedures
- Prepare documentation on technology use
- Perform computer facilities management tasks
- Assist users with software development projects

Figure 1-5 Common user support services

User Support Functions

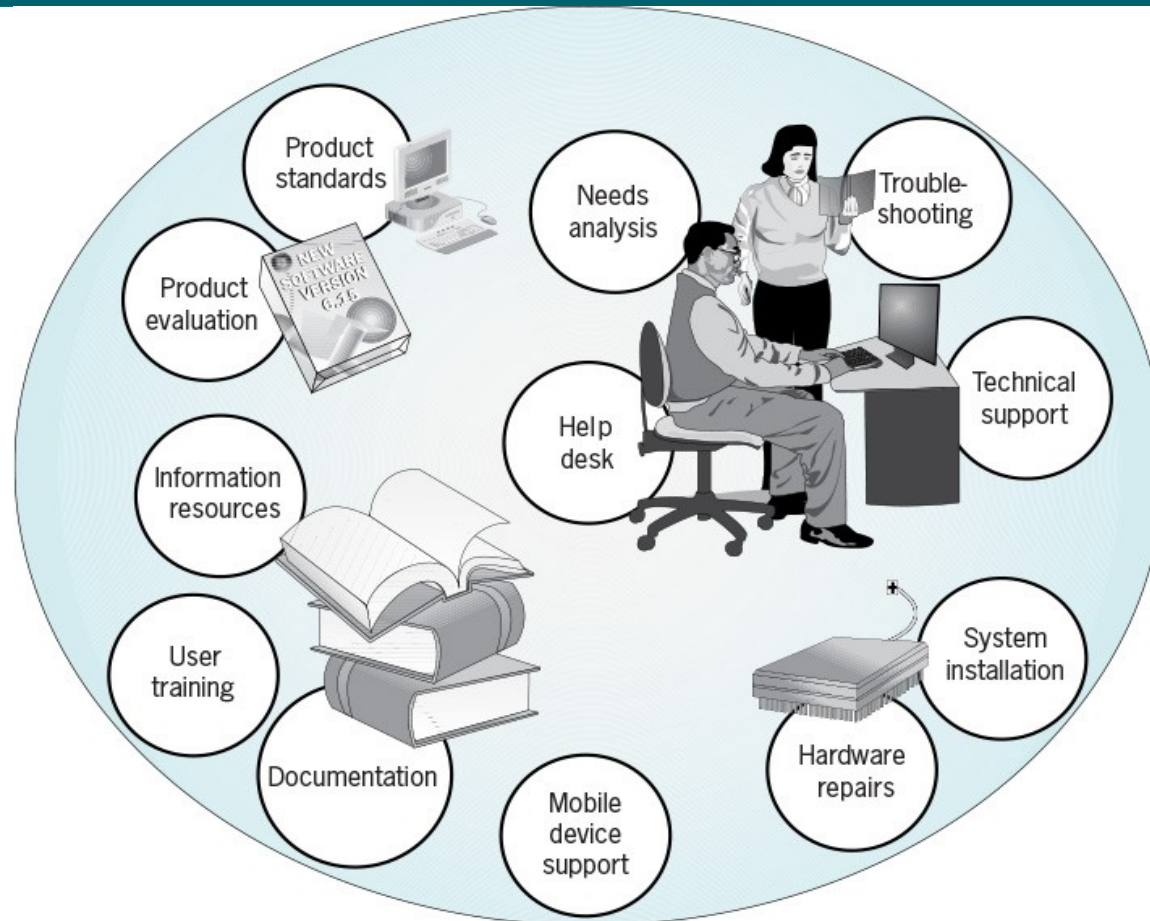


Figure 1-6 Common user support functions in organizations

Position Description:

Level 1 Help Desk Agent

Job Title: Level 1 Help Desk Agent

Position Overview: A Level 1 Help Desk Agent provides tier 1 technical support and incident and problem management to end users on technology issues—with an emphasis on good customer service skills.

Position Description: Level 1 Help Desk Agent (continued)

Duties: A Level 1 Help Desk Agent fulfills a range of duties, including, but not limited to the following (other duties may be assigned based on company business requirements):

- Provides tier 1 technical support and incident problem management support to end users on technology use, including computer operation, network connectivity, application software support, and system installation.
- Provides support to users in face-to-face contacts, telephone calls, email messages, chat sessions, Web-based contacts, and user training sessions.
- Installs, tests, configures, and monitors hardware and software.
- Diagnoses and repairs hardware and printer problems.
- Troubleshoots and supports software applications and business processes.
- Advises users on best practices in technology use; performs user needs assessments and makes recommendations on suitability of technology solutions to meet business needs.
- Prepares reports and technical documentation as needed.

Position Description:

Level 1 Help Desk Agent (continued)

Qualifications:

- Basic knowledge of computer technology, including hardware, software, and network operation
- Working knowledge of Microsoft Windows and Android smartphone environments
- Expertise in system troubleshooting and problem solving
- Hands-on experience with the installation and support of PC systems
- Experience with automated help desk management systems

Position Description: Level 1 Help Desk Agent (continued)

Skills Expectations:

- Excellent time management and multi-tasking skills
- Telephone and interpersonal skills that promote user satisfaction
- Ability to build rapport with help desk customers; escalate problems; and record, track, and document the incident problem-solving process
- Ability to use diagnostic utilities to aid in troubleshooting
- Internet search skills to locate software updates, drivers, knowledge bases, and FAQ resources to aid in problem resolution
- Handle smartphone issues, such as activation, email configuration, information transfer, and password resets; ability to troubleshoot common problems
- Develop reference sheets and FAQs for users and other support staff
- Maintain current knowledge of technology innovations in networking and computing
- Maintain an appropriate level of confidentiality with sensitive information

Position Description: Level 1 Help Desk Agent (continued)

Education and Training:

- Minimum of two years of experience in a help desk environment; an Associate's degree in a relevant field may substitute for experience
- Certification in A+ or ability to pass certification exam required

Position Description: Network Support Technician

Job Title: Network Support Technician

Reports To: Manager of Network Services

Job Scope

This position is responsible for supporting a local area network operation to ensure it meets the business operation needs of the company. The position is at an intermediate support staff level and is responsible for applying some judgment to resolve routine problems and make recommendations.

Position Description: Network Support Technician (continued)

Responsibilities

- Monitor the operation of the local area network to ensure minimum downtime and prompt resolution of problems.
- Identify network problems and perform corrective action; escalate issues that cannot be resolved after basic troubleshooting.
- Provide tier 1 level support to understand the nature of reported network problems; initiate troubleshooting strategies to ensure the highest quality of network services.
- Research solutions to user problems to meet employee needs.
- Prepare detailed documentation of corrective actions taken to resolve network faults in the incident management system.
- Adhere to established company procedures to ensure compliance with ITIL best practices, and to meet and exceed IT department standards.

Position Description: Network Support Technician (continued)

Qualifications

- Degree or relevant industry experience
- Knowledge and understanding of local area network technology
- Accuracy, attention to detail, and ability to multi-task
- Good analytical skills
- Excellent customer service skills required
- Good written and verbal communication skills
- Demonstrated ability to manage multiple service requests at a time

Position Description: Network Support Technician (continued)

Preferred qualifications

- CompTIA Network+ certification
- Working knowledge of Microsoft Office applications
- 1-2 years of experience in a technical customer support/help desk environment
- Military veteran
- Ability to communicate in Spanish

Knowledge, Skills, and Abilities

- **Knowledge:** what a worker needs to know to perform a job
 - Years of education
 - Degree
 - Certification
 - List of specific topics

Knowledge, Skills, and Abilities

- **Skills:** what a worker must be able to perform well to do a job
 - Expertise based on practice and experience
- **Abilities:** functions a worker can either perform or not
 - Physical abilities
 - Language abilities
 - Special abilities

Alternative Career Paths for User Support Workers

- Programmer/developer
- Network technician
- Website maintainer
- Support manager
- Project manager
- Trainer/technical writer
- Security specialist

Chapter Summary

- Early computers were large, centralized corporate or government systems used to automate manual tasks
- Several industry trends during the 1970s and 1980s resulted in end-user personal computers
- End users can be categorized according to
 - Environment
 - Skill level
 - Frequency of use
 - Software used
 - Features used
 - Relationship to support
- Resources that impact total cost of ownership include
 - Hardware
 - Peripherals
 - Software
 - Upgrades
 - Maintenance
 - Supplies
 - Data and information
 - Facilities
 - Technical support

Chapter Summary (continued)

- End-user software includes

Email	Instant messaging	Web browser
Word processor	Spreadsheet	Database management
Graphics	Planning/scheduling	Desktop publishing
Webpage developer	Education/entertainment	Enterprise/industry-specific

- Primary goal of end-user computing: make users more productive

- Common problems related to end-user computing include

Wasted resources	User mistakes	Computer crime
Piracy	Invasion of privacy	Abusive use
Security threats	Health problems	

Chapter Summary (continued)

- Ways to organize end-user assistance

Peer support

Part-time support

User support group

Help desk

User support
center

IT department staff

- Outsource to
vendor Support services users need

Help desk

Troubleshooting

Locate information

Product evaluation

Support standards

User needs
assessment

System installation

Training

Documentation

- Facilities management Mobile device support
User support positions require a variety of
knowledge, skills, and abilities (KSAs), which may
lead to alternate career paths