SUMMARY

INTELLECTUAL PROPERTY RIGHTS

Chapter Objective 1: Understand the concept of intellectual property rights and how they relate to computer use.

Intellectual property rights specify how *intellectual property*, such as original music compositions, drawings, essays, software programs, symbols, and designs, may be lawfully used. **Copyrights** protect the creators of original artistic or literary works and are granted automatically once a work exists in a physical medium. A copyright can be registered, which provides additional protection should infringement occur. The copyright symbol © can be used to remind others that content is copyrighted; **digital watermarks** can be incorporated into digital content so that the copyright information can be viewed, even if the work is altered. **Digital rights management** (**DRM**) **software** can be used to protect the rights of creators and to manage digital content, such as art, music, photographs, and movies. **Trademarks** are words, phrases, symbols, or designs that identify an organization's goods or services and can be either claimed (and use the symbol ™ or ℠) or registered (and use the symbol ®). **Patents** grant an exclusive right to an invention for 20 years. In addition to products, processes and procedures may be patented as well.

ETHICS

Chapter Objective 2: Explain what is meant by ethics and provide several examples of unethical behavior in computer-related matters.

Ethics are standards of moral conduct. *Personal ethics* guide one's personal life; **business ethics** provide the standards of conduct guiding business decisions, and **computer ethics** provide the standards of conduct with respect to computers and computer use. Computer ethics have taken on more significance in recent years because the increased use of computers in the home, in the workplace, and at school provides more opportunities for unethical behavior than in the past.

Today one of the most important ethical concerns regarding computers is using someone else's property in an improper way. Books, music, movies, and other types of intellectual property are protected by copyright law. Presenting someone else's work as your own is referred to as **plagiarism**, which is illegal and unethical. It is becoming increasingly common for businesses and schools to establish **codes of conduct** to address what behavior is considered ethical and unethical at that particular organization. Some organizations and industries publish **codes of ethics** listing overall standards of conduct, such as honesty, fairness, confidentiality, and more.

A **computer hoax** is an inaccurate statement or story spread through the use of computers, often by e-mail. It is a good idea to make sure questionable information is not a computer hoax before passing the information on to others. **Digital manipulation** is the use of computers to modify something in digital form, usually text or a photograph. Ethics are highly intertwined with determining business practices and making business decisions. Decisions, such as which financial information to publicize, which products or services to provide, which safeguards (if any) to establish with products or services that are illegal for minors or objectionable to some individuals, and whether or not to promote potential *vaporware* products, all require ethical consideration.

Because ethics are fundamentally based on values, different types of businesses may have different ethics. Ethics and moral standards may vary from country to country and from culture to culture. In addition to legal considerations, businesses with global connections should consider the prevailing ethical standards of all countries involved when making business decisions.

COMPUTERS AND HEALTH

Chapter Objective 3: Describe some possible physical and emotional health risks associated with the use of computers.

Since the entry of computers into the workplace and their increased use in our society, they have been blamed for a variety of physical ailments. **Carpal tunnel syndrome** (**CTS**), **DeQuervain's tendonitis**, and other types of **repetitive stress injuries** (**RSIs**) are common physical ailments related to computer use; *computer vision syndrome* (*CVS*), eyestrain, fatigue, backaches, and headaches are additional possible physical risks.

Ergonomics is the science of how to make the computer workspace, hardware, and environment fit the individual using it. Using an ergonomically correct workspace and **ergonomic hardware** can help avoid or lessen the pain associated with some RSIs. In addition, all users should use good posture, take rest breaks, alternate tasks, and take other common-sense precautions. For portable PCs, **docking stations** and **notebook stands** can be used to allow easy connections to more ergonomically correct hardware.

The *stress* of keeping up with ever-changing technology, layoffs, always being in touch, fear of being out of touch, information overload, **burnout**, and **computer/Internet addiction** are all possible emotional problems related to computer use.

ACCESS TO TECHNOLOGY

Chapter Objective 4: Discuss the impact that factors such as nationality, income, race, education, and physical disabilities may have on computer access and use.

The **digital divide** refers to the gap between those who have access to computers and communications technology and those who do not. There can be a digital divide within a country or between countries. Globally, the digital divide separates countries with access to technology from those without access to technology.

Research suggests that people with disabilities tend to use computers and the Internet at rates lower than the average population. Part of the reason may be because some types of conventional hardware—such as keyboards and monitors—are difficult to use with some types of physical conditions. **Assistive technology** includes hardware and software that makes conventional PC systems easier for users with disabilities to use.

ENVIRONMENTAL CONCERNS

Chapter Objective 5: Suggest some ways computer users can practice "green computing" and properly dispose of obsolete computer equipment.

Green computing refers to using computers in an environmentally friendly manner. It can include using environmentally friendly hardware (such as devices approved by an **eco-label** system like the **ENERGY STAR** certification used in the United States), as well as using procedures (such as consolidating servers and using power management features to place devices into standby or sleep mode when not in use) to reduce energy consumption. Environmentally friendly computers are just starting to come on the market, and alternate-powered hardware is beginning to become available.

In addition to practicing green computing when buying and using computer equipment, discarded equipment should be reused whenever possible. Computer equipment that is still functioning may be able to be donated and refurbished for additional use, and toner and ink cartridges can often be refilled and reused. Hardware that cannot be reused should be recycled if possible, or properly disposed of if not recyclable so that it does not end up as hazardous *e-trash* in landfills. Storage media containing personal or sensitive data should be disposed of properly, such as wiped or shredded before being reused or recycled.

RELATED LEGISLATION

Chapter Objective 6: Discuss the current status of legislation related to intellectual property rights, ethics, access, and the environment in relation to computers.

There are numerous laws in place to protect intellectual property. Because moral and ethical standards are more difficult to agree on, ethical legislation is slower in coming. However, some laws have been implemented. The most significant legislation regarding accessibility is the 1998 amendment to the *Rehabilitation Act* requiring federal agencies to make their electronic and information technology accessible to people with disabilities. In the U.S., some federal regulations and state laws impact the disposal of computer hardware.

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