

# Appendix D:

## Glossary

**Analog communication:** A communication format in which information is transmitted by modulating a continuous signal, such as a radio wave. Voice and video messages originate in analog form since sound and light are wave-like functions; thus, they must be converted into digital messages in order to communicate along digital communications formats or media.

**Animation:** Animation is apparent movement produced by recording step-by-step a series of still drawings, three-dimensional objects, or computer-generated graphics. Movement over time is shown by replacing each image (frame) by the next one in the series at a uniform speed-frames per second (fps). The human eye perceives fluid movement at 30 fps-the approximate rate of film, television, and VCR-quality video.

**Application tools:** Computer software that enables the user to manipulate information to create documents or reports.

**Artificial intelligence:** The use of computer processing to simulate intelligent behavior. Current research includes natural language recognition and use, problem solving, selection from alternatives, pattern recognition, generalization based on experience, and analysis of novel situations.

**Asynchronous communication:** Two-way communication in which there is a time delay between when a message is sent and when it is received. Examples include electronic-mail and voice-mail systems. In contrast, synchronous communication is simultaneous two-way exchange of information-e.g., a telephone conversation.

**Audioconferencing:** An electronic meeting in which participants in different locations use telephones and audio bridges (devices that connect and control multiple telephone lines) to communicate simultaneously with each other.

**Audiotext:** An automated telephone information service with branching capability accessed through a touch-tone telephone. Audiotext services are often used by businesses or public agencies to provide commonly requested information, such as instructions for obtaining a drivers license.

**Authoring:** The process of building or modifying computer software using a computer program designed for that purpose. Generally, authoring software applications require less technical expertise compared to use of programming languages.

**Bit (Binary digiT):** The smallest unit of information a computer can use. A bit is represented as a "0" or a "1" (also "on" or "off"). A group of 8 bits is called a byte. Bits are used to measure the speed of digital transmission systems. Speeds are commonly expressed in kilobits (Kbps), i.e., thousand per second; megabits (Mbps), i.e., million per second; and gigabits (Gbps), i.e., billion per second.

**Bulletin board service (BBS):** A computer service that is modeled after a community bulletin board. Using a computer, modem, and phone line, individuals connect to a central "host" computer to post or read messages or to upload and download software. Communication is usually asynchronous.

**CD-ROM (compact disc-read only memory):** An optical storage system for computers that permits data to be randomly accessed from a disc. With read

only discs, new data cannot be stored nor can the disc be erased for reuse. Other optical storage systems allow users to record or write and rewrite information.

**Coaxial cable:** Shielded wire cable that connects communications components. Coaxial cable is commonly used in cable television systems because of its ability to carry multiple video (or other broadband) signals.

**Codec:** An electronic device that converts analog video signals into a digital format for transmission, and vice versa. The name is an abbreviated form of “coder-decoder” or “compressor-decompressor” when compression is also involved.

**Compression:** Squeezing information so that it requires less space to store or transmit. When speech is compressed, for example, pauses are eliminated. Compression is generally expressed as a ratio. For example, an 8-to-1 ratio means that the information requires one-eighth of its original space. In compressed video, digital technology is used to encode and compress the signal. Picture quality is generally not as good as full motion; quick movements often appear blurred. The greater the compression ratio, the higher the chance for loss of quality in image, sound, or motion.

**Computer graphics: Drawings** and figures that can be digitized, altered, created, stored, and produced **with a computer. Application tools allow users** to draw or “paint” original images with a mouse or graphics tablet.

**Consumer electronics:** A class of electronic products that are typically designed, marketed, and sold to the consumer mass market. Televisions, videocassette recorders, video game systems, walk-about radios, pocket calculators, and portable compact disc players are examples.

**Courseware:** A package used for teaching and learning, which includes computer or video software and related print materials such as a teacher’s guide and student activity books.

**Digital communications:** A communications format used with both electronic and light-based systems that transmits audio, video, and data as bits of information.

**Digital video:** A format used to store, manipulate, and transmit moving images as bits of information. Codecs are used to convert traditional analog

signals into a digital format and back again. Digital video can be compressed for more efficient storage and transmission.

**Digitize:** To change analog information to a digital format. Once information has been converted to this form, it can be conveniently stored, manipulated, and compressed. It can also be transmitted over a distance with little or no loss in quality. Sound (such as speech or music), stills (such as transparencies), and motion video are commonly converted into digitized form.

**Downlink: An** antenna shaped like a dish that receives signals from a satellite. Often referred to as a satellite dish, terminal, Earth station, or TVRO (television receive only).

**Electronic mail (e-mail):** A computer application for exchanging information over a distance. Communication is asynchronous. E-mail typically consists of text, but multimedia formats are under development.

**Facsimile machine (fax):** A device that converts hard-copy images and text into an electronic form for transmission over telephone lines to similar devices at another location.

**Fiber optic cable:** Hair thin, flexible glass rods that use light signals to transmit information in either analog or digital formats. Fiber optic cable has much higher capacity than copper or coaxial cable, and is not as subject to interference or noise. Fiber optic cable has the bandwidth to accommodate high-speed, multimedia networking.

**Flat-panel display:** A video or computer screen that is relatively thin, lightweight, and typically used in portable computers.

**Gbps: See bit.**

**Groupware:** A computer software program that allows the same information to be shared among several computer users simultaneously. With some applications, users can see each other and from their own computers, add to or edit text and graphics in a single document.

**Icon:** A symbol displayed on the computer screen that represents a command or program (e.g., a trash can symbolizing the command to delete a document). Icons help make computer operating systems and applications easier to use.

**Interface:** A general term used in the computer world to designate the hardware and associated software

needed to enable one device to communicate with another or to enable a person to communicate with computers and related devices. A user interface can be a keyboard, a mouse, commands, icons, or menus that facilitate communication between the user and computer.

**ISDN (Integrated Services Digital Network):** A protocol for high-speed digital transmission. ISDN provides simultaneous voice and high-speed data transmission along a single conduit to users' premises. Two ISDN protocols have been standardized: narrowband ISDN—two 64 Kbps channels carry voice or data messages and one 16 Kbps data channel is used for signaling; and broadband ISDN—twenty-three 64 Kbps channels carry voice or data messages and one 64 Kbps channel is used for signaling.

**Kbps:** See bit.

**Laserdisc:** See **videodisc**.

**LEOS (low-Earth orbiting satellites):** Small satellites with a lower orbit (hundreds of miles) than geosynchronous satellites (22,300 miles). In the future, LEOS could be used to provide data and voice communications to portable computers, telephones, and other devices without the use of wires.

**Local area networks (LANs):** Data communication networks that are relatively limited in their reach. They generally cover the premises of a building or a school. Like all networking technologies, LANs facilitate communication and sharing of information and computer resources by the members of a group.

**Mbps:** See bit.

**Microwave:** High-frequency radio waves used for point-to-point and omnidirectional communication of data, video, and voice.

**Modem:** A device that allows two computers to communicate over telephone lines. It converts digital computer signals into analog format for transmission. A similar device at the other end converts the analog signal back into a digital format that the computer can understand. The name is an abbreviated form of “modulator-demodulator.”

**Mouse:** A pointing device that connects to a computer. With a mouse, users can control pointer movements on a computer screen by rolling the mouse over a flat surface and clicking a button on the device. The mouse is also commonly used to define and move

blocks of text; open or close windows, documents, or applications; and draw or paint graphics.

**Optical storage:** High-density disc storage that uses a laser to ‘write’ information on the surface. Erasable or rewritable optical storage enables written information to be erased and new information written.

**Pen:** See **stylus**.

**PTSN (Public Switched Telephone Network):** The public telephone network that allows point-to-point connections anywhere in the system.

**RAM (random access memory):** Computer memory where any location can be read from, or written to, in a random access fashion. Information in RAM is destroyed when the computer is turned off.

**ROM (read only memory):** Once information has been entered into this memory, it can be read as often as required, but cannot normally be changed.

**Satellite dish:** See **downlink**.

**Scanner:** An input device that attaches to a computer that makes a digital image of a hard-copy document such as a photograph. Scanned pictures, graphs, maps, and other graphical data are often used in desktop publishing.

**Simulation:** Software that enables the user to experience a realistic reproduction of an actual situation. Computer-based simulations often involve situations that are very costly or high risk (e.g., flight simulation training for pilots).

**Smart Card:** A small plastic card containing information that can be read by a computer reader. For example, a smart card can be used to keep track of Food Stamp eligibility and qualify the holder for other social services that use the same criteria.

**Software:** Programming that controls computer, video, or electronic hardware. Software takes many forms including application tools, operating systems, instructional drills, and games.

**Storyboard:** A board or panel containing small drawings or pictures that show the sequence of action for a script of a video or computer software.

**Stylus:** A tool similar to a pen with no ink used for marking or drawing on a touch-sensitive surface. In pen-based computing, a stylus, rather than a keyboard, is used as the primary input device.

**Synchronous communication:** See **asynchronous communication**.

**Tablet or graphics tablet:** A computer input device resembling a normal pad of paper on which images are drawn with a pointing instrument such as a stylus. The tablet converts hand-drawn images into digital information that can be processed and displayed on a computer monitor.

**Teleconferencing:** A general term for any conferencing system using telecommunications links to connect remote sites. There are many types of teleconferencing including: videoconferencing, computer conferencing, and audioconferencing.

**Touch window:** A computer screen that allows data to be entered by using a specialized stylus to write on the screen, or by making direct physical contact between the finger and the screen.

**Uplink:** A satellite dish that transmits signals up to a satellite.

**Videoconference:** A form of teleconferencing where participants see, as well as hear, other participants in remote locations. Video cameras, monitors, codecs, and networks allow synchronous communication between sites.

**Videodisc:** An optical disc that contains recorded still images, motion video, and sounds that can be played back through a television monitor. Videodiscs can be used alone or as a part of a computer-based application.

**Voice mail:** An electronic system for transmitting and storing voice messages, which can be accessed later

by the person to whom they are addressed. Voice mail operates like an electronic-mail system.

**Voice recognition:** Computer hardware and software systems that recognize spoken words and convert them to digital signals that can be used for input.

**Wide area networks (WANs):** Data communication networks that provide long-haul connectivity among separate networks located in different geographic areas. WANs make use of a variety of transmission media, which can be provided on a leased or dial-up basis.

**Window:** A part of the computer screen that is given over to a different display from the rest of the screen (e.g., a text window in a graphics screen). It can also be a portion of a file or image currently on the screen, when multiple windows are displayed simultaneously.

**Wireless:** Voice, data, or video communications without the use of connecting wires. In wireless communications, radio signals make use of microwave towers or satellites. Cellular telephones and pagers are examples of wireless communications.

**Workstation:** A computer that is intended for individual use, but is generally more powerful than a personal computer. A workstation may also act as a terminal for a central mainframe.