E

E1 A four-wire digital trunk with a bandwidth of 2.048 Mbps.

EAPROM (Electrically Alterable Programmable Read-Only Memory) An electronic memory device that can be erased electrically.

ECC (Error Correction Code) *(See Mode 1 and Mode 2.)*

E-commerce (Electronic Commerce) An application of the Internet which sees it used in a point-of-sale (POI) guise. One of the earliest e-commerce Web sites was the Amazon on-line book store. A key concern of companies contemplating e-commerce solutions on the Web, and of users also, is the security of transactions using credit cards and other electronic funds transfer systems such as Switch. Encryption plays an important role in maintaining the privacy of customer details. SET is seen as the internationally agreed standard solution for providing such confidentiality.
(See Cryptography, Encryption and SET.)

Ediris A CD-I multimedia title launched by Philips and Renault in October 1989. It was a service training program for mechanics and was used by Renault. On show at the Salon Equip'Auto it received Le Trophée d'Or (The Golden Trophy) for being a most innovative product.
(See CD-I.)

EDO (Enhanced Data Out) A type of random access memory (RAM) which offers access times of the order of approximately 10 nanoseconds (ns), or 10 billionths of a second.
(See SDRAM.)

EIGRP (Extended Interior Gateway Routing Protocol) A protocol developed by Cisco for routers.

EISA (Extended Industry-Standard Architecture)   A standard 32 bit expansion bus agreed in the 1980s by nine influential PC clone makers. These included Dell and Olivetti. The EISA bus was developed in response to the IBM MCA (Micro-channel Architecture) bus, the inclusion of which in a PC design requires a licence fee. The rationale behind EISA was to develop a bus that was technically equivalent to (or better than) MCA. EISA offers backward compatibility with ISA (Industry Standard Architecture) cards. EISA cards operate as bus masters in the same manner as MCA cards, performing most operations without consuming a noticeable percentage of processing time.

Electronic mail   *(See E-mail.)*

Electronic publishing   A term used to describe information made available through electronic means. Through the Internet, hypermedia and hypertext marked the beginning of a renaissance in electronic publishing, radically altering the manner in which information is presented and used. Other media for electronic publishing include CD-ROM and DVD-ROM. *(See Web.)*

Electronic storyboard   An electronic equivalent to a storyboard. It is used for the development of multimedia material, providing a cost-effective means of early prototyping when, for instance, only salient images have been, or need to be, gathered. Depending upon the computer software used, it can present a blinkered view, where an overall picture is difficult to grasp. For example, depending upon complexity, pinning a storyboard on wall(s) imparts an immediate overview of meaningful paths and possible user interaction and so forth.

E-mail (electronic mail)   A method of communicating documents and digital files electronically; a computer-based equivalent of a letter. E-mail addresses generally conform to the format: name@domain.domain_category.country:

- name might be a login name
- domain might be a company name, such as Microsoft
- domain category is the type of domain *(See Domain category)*
- country is the geographic location of the server, which might be uk (United Kingdom), nz (New Zealand), au (Australia) and so on.

For instance, subscribers to Compuserve have e-mail addresses that have the syntax 123456.7654@compuserve.com. Other ISPs (Internet Service Providers) allow users to use their name as an ID. Examples include F_Botto@compulink.co.uk, or fbotto@cia.com.au. E-mail messages can be

sent using browsers (such as Netscape Navigator and Microsoft Explorer). E-mail applications include Eudora Mail. Typically, a computer fitted with a modem is used for transmission and reception of data. Standards such as MIME (Multi-purpose Internet Mail Extensions) are applicable to such transmission, permitting the integration of program and video files within e-mail documents and communications. E-mail messages can be sent over LANs, intranets and the Internet. Users generally read their e-mail messages by downloading them from a server, and there is often an option within the e-mail program that allows them to choose whether or not to leave a copy of the e-mail message on the server.

(See POP3.)

E-mail hyperlink   A hyperlink which invokes an e-mail client or feature.

EMS (Expanded Memory Specification)   A method of addressing a large amount of memory in a PC architecture; it is a standard for raising the ceiling on available memory. Introduced by Lotus, Intel and Microsoft (LIM) in 1984, it was used in Windows 1.x to cache DOS applications. The specification has evolved and numerous different versions are available. In the early days, many PCs were fitted with EMS-compliant memory cards. However, the growing use of extended memory (XMS) on motherboards and their EMS compliance drove EMS memory cards into obsolescence. Expanded memory is accessed by reading 16Kbyte pages from EMS into the memory area between 640Kbyte and 1Mbyte Ram. A device driver such as `EMM386` responds to EMS requests.

Encapsulation   A term which describes hiding the internal workings of an object. The resulting object encapsulates code and data, which are hidden from the user and the remaining collective OO system. Essentially it becomes a black box, and all that matters is its responses to stimuli, such as defined events, which are intercepted and processed by the object's public interface.

(See C++, Java and OOP.)

Encode   The process of converting data, or an analogue signal, into another form in terms of data representation. For example, Video-on-Demand services often use MPEG-2 video, which is encoded using uncompressed source recordings, which may be analogue or digital. Equally, streaming video/multimedia sites store video encoded according to the MPEG-1 specification.

(See MPEG.)*

Encryption   The process of ciphering messages or data so that it may be deciphered and read only by the intended recipient(s). Encryption techniques include:

- DES
- TripleDES
- DES X
- RSA
- DSS.

(See Cryptography, Decryption, DES, DESX, DSS, RSA and TripleDES.)

End-user   A member of the target audience for a system, application or title.

Engelbart, Douglas   An academic credited with the invention of the mouse and the windows concept. Apple Computer eventually brought his work to market.

Enigma   A Second World War encryption technique used by Germany. Alan Turing was one British code-breaker assigned the task of its decryption. It is used today on Unix systems, and is accessible via the `crypt` command.

(See Encryption.)

Enterprise computing   A general term used to describe the application of computers and Information Technology (IT) in medium-size to large businesses.

Entity relationship diagram   A diagram which illustrates the design structure of a relational database, together with all its data tables and links. Programs that can be used to draft such diagrams include EasyCase. Entity relationship diagrams rarely include reports and query information, though some relevant notes might be included.

(See Database.)

Enumerated constants   A type of constant supported by C++.

(See C++.)

EPROM (Erasable Programmable Read-Only Memory)   An electronic memory device that can be erased by subjecting the chip to ultraviolet light. Once programmed, its transparent window is covered, making the data permanent.

Error correction   The process of minimising the risk of receiving corrupt data from DSM such as a CD-ROM or from a modem. Modem-based error

correction generally involves first breaking down files into a number of blocks or frames. The checksum (or total number) of bytes in each block is then calculated and transmitted with each block. The receiving modem then calculates a second checksum for each block and compares it with that it received. If the checksums differ, then the data is re-sent from the transmitting modem.

Ethernet   A Local Area Network (LAN) standard. Ethernet adapters included on computers may comprise thin Ethernet or more expensive thick Ethernet connectors and cables. Ethernet was put forward in 1974 by Robert Metcalfe through his Harvard PhD thesis.

Event-driven   An environment or program that responds to external events such as mouse clicks. Modern event-driven applications can be assumed to be object-oriented. Objects such as buttons respond to events, triggering a method or item of code that is attached to them. Windows is an event-driven environment.

Expanded memory   *(See EMS.)*

Expansion bus   A bus used to provide a means of expanding a PC to include various peripheral devices that might range from graphics cards to MPEG players. Standard expansion buses include 16 bit ISA (Industry Standard Architecture), IBM MCA (Micro-channel Architecture) and EISA (Enhanced Industry-Standard Architecture).
(See Local bus.)

Expansion card   An electronic assembly that can be added to a PC by slotting it into its expansion bus. Expansion cards include graphics cards, video capture cards, fax/modems, hard disk controllers and MPEG players.

Expert system   *(See KBS.)*

Explorer   A program which is part of Windows 95 and Windows NT, and is used to peruse files, open files, launch programs and perform file management functions. It shows file details such as their size in bytes, the date and time they were last modified, and their attributes, including whether they have read, write or read/write status. It is commonly used to move, rename, copy and delete files and even complete directories. The move, copy and delete commands work with multiple selected files, so you can copy and move batches of files without having to go through the monotony of dealing with one file at a time. Windows applications can be

run from Explorer by double-clicking them or by double-clicking files that were created with them.

(See Windows.)

Extended memory   *(See XMS.)*

EyePhone   An HMD (head mount display) manufactured by VPL.

E-zine   An electronic magazine, which may be distributed via the Web or a digital removable medium such as CD-ROM.