



Telecommunications Definitions

Analogue: In telecommunications analogue mode is a way of transmitting speech in the form of a Continually varying "waveform, which are 'analogous' to human speech.

ATM: Asynchronous Transmission Mode - a way of sending data over telephone lines in stop/start bursts at a given time interval rather than a smooth 'synchronous' stream. The technology is widely used in business to link computers over Local Area Networks and is available as a public service to link computer traffic between unrelated buildings and sites.

ACD: Automatic Call Distribution - A system mostly used in call centres whereby incoming calls are distributed in sequence to the first available answering point. It is used to reduce call-waiting time for callers and to help route the call to the right person.

Auto dialler: A device which is installed between Customer Premise Equipment (CPE) and the Network Termination Point (NTP) which will automatically route calls to the legitimate network for the type of call that is being generated by the subscriber. The device is normally intelligent enough to take into consideration the time of day as well as the STD code or international codes being dialled to ensure the subscriber maximises opportunities offered by various networks.

Baud Rate: The speed of operation of a device, e.g. modem, or communication channel measured in pulses per second (bit/s).

Bit: A 'Bit' is a shorthand version of 'binary digit', a computer's way of expressing information in simple 'on' or 'off' instructions. Bits are the basic unit of storage in a computer's memory and on computer discs. On a personal computer (PC) it is normal for memory capacity to be expressed in 'bytes', each of which is made up of eight bits.

Bit/s: The term bits per second, the speed at which digital information is transmitted.

Byte: (Kilobytes, Megabytes, Gigabytes): A byte usually represents eight 'bits' the smallest unit of information a computer works with - literally the on/off electronic pulse on which a computer's 'binary' brain is based. Because huge amounts of bytes are needed to convey even simple messages, larger units were devised. A Kilobyte (called aK) is 1,000 bytes, a Megabyte is 1,000K and a Gigabyte is 1,000 Megabytes - a billion bytes! Typically, users measure floppy disc files and the memory capacity of a computer's hard drive in Megabytes. Gigabytes are the domain of high capacity machines or networks but the demand for more and more memory is growing.

Broadband: As in broadband transmission or channel. Used to describe a high-speed communication channel with wide capacity, capable of carrying thousands of telephone calls or many TV pictures simultaneously, or a combination of media. It offers interactivity and two-way communication.

Browser: A method of searching through computer information in a free and easy way. Associated with 'hypertext' on the Internet, a browser does away with the need for a formal index of stored subjects.

Call Centre: A telephone based service operation being increasingly used for direct banking and insurance, ticket sales and customer service operations.

Call Logger: A call logger generates a record of each call made to the PSTN detailing, date, time caller number duration and cost of call. The system holds a list of tariffs, which may be set by a controller to include any overheads such as costs of handsets maintenance etc.

Cellular Telephony: A radiophone system in which signals from 'cellular' phones are passed between 'cells' in which transmitters are located. The establishment of cellular telephony enables coverage of a large area without the cost of cabling or wiring. It is widely used for mobile and car phones.



Centrex: Short for Central Exchange and is a way of having many of the benefits of a telephone system without the capital expenditure. The customer leases the capacity from the telephone network operator, who allows a certain capacity to be dedicated to that customer. The idea has been around for over 20 years, but is now becoming more popular as companies outsource various supply services.

CLI: Call line identification or simply the telephone number. The CLI ensures that the call is billed correctly.

CTI: Computer Telephony integration - harnessing the power of computers to enhance the performance of the telephone. Currently used by call centre operators whose computers dial clients automatically from a database and 'pop' information on screen whilst the call is in progress.

Data Compression: A technique used to improve the efficiency of communication transmission by reducing or compressing the number of information bit/s, which need to be transmitted. Useful for transmitting data, graphics and voice signals.

DASS Channels: Digital Access Signalling System is a common channel signaling system between a private telephone exchange/switchboard (PBX) and a local telephone network, providing multi digital access channels for a wide range of voice, image, text and data transmissions.

Digital: A method of transmitting data, text, voice or pictures in pulse form at great speeds, using binary codes.

DDI: Direct Dialling In - a way of dialling an individual directly even though they may work in a large organisation served by a switchboard. Often automatically linked to alternative numbers or messaging services should the person not happen to be around.

E - Mail: Electronic mail allows people to send and receive messages over their personal computers. Just like ordinary mail, there is no need for parties to be present with their machines switched on for the service to work. Messages are simply stores in an electronic mailbox until they are collected. Originally popular in organisations with their own data networks, e-mail can be also sent down ordinary lines and is today a major attraction of the Internet, which delivers e-mail around the world.

Feature line: This is the BT equivalent to Centrex and both are usually found on business parks, they are a problem, in most cases a single line dialler on each line is required. Even then problems may occur.

Fibre Optic Cable: Cabling structure carrying light pulses, which are used in the trunk telephone network for high capacity transmission of voice, data or video images. It is faster, more flexible and offers greater clarity and security than conventional copper cables, which traditionally have made up the bulk of the telephone and communication networks.

Frame Relay: A way of 'turbo charging' the transfer of large amounts of data aimed at businesses which depend heavily on computers. It can be used to speed up data transfer between different companies over public networks or between branch offices over private networks. It has evolved from the internationally agreed X.25 standards for packet switching - a technique that involves splitting data into standard 'packets', which can be transmitted efficiently, and then re-building it into its original form when it gets there. Frame relay bundles individual packets of data into 'frames', which can be handled quicker. It also enables a single data line to be used for several purposes simultaneously.

Gateway: The interface between two opposing protocols. By means of software and hardware, a gateway allows connection between otherwise incompatible networks.

GIF: Graphics Interchange Format developed by CompuServe; GIF is a platform-independent file format, used extensively throughout the Internet for 256 colour (8-bit) graphics files. Compresses files using a 'losses' method, which ensures picture quality, is not diminished. Recognised by the .gif filename extension.

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Gopher: Internet Gopher is a distributed document search and retrieval system. It Takes a request for information and then scans the Internet for it. The protocol and software follows a client-server model, and permits users on a heterogeneous mix of desktop systems to browse, search, and retrieve documents residing on multiple distributed server machines.

Header: In E-mail terms, this is the part of the message indicating who the sender is and some other brief details, such as the subject of the message.

Home Page: On the World Wide Web, this is the main navigation page owned by a company, organisation, University, individual, etc, from which hyperlinks are made to other pages on the site (or other sites).

HTML: (Hyper Text Mark-up Language) the tagging language used to format Web pages. Allows pictures and text to be combined to create Web documents, and the most important feature - hypertext - making it possible for links to be made between different documents on separate networks around the world.

HTTP: (Hyper Text Transport Protocol) used on the World Wide Web since 1990, This application level protocol is essential for the distribution of information throughout the Web.

Hyperlink: In the World Wide Web pages, hyperlinks are highlighted text or images which, when selected (usually by clicking the mouse button), follow a link to another page. Hyperlinks can also be used to automatically download other files as well as sound files and video clips.

Intelligent Networks (IN): Automation and computerisation have resulted in telephone networks being able to carry out more functions without human supervision. This evolving 'intelligence' in the network enables calls to be routed more easily, improving mobility and flexibility for the people who use them. Networks operators also have the flexibility to alter charging and billing systems with the minimum of fuss.

ISDN: Integrated Services Digital Networks are digital public service telephone networks which enable both voice and data calls to be made over a single connection. Digital quality enables magazine photographs, artwork and other complex data transmissions to be carried electronically.

IVR: Interactive Voice Response - an automatic, menu-driven series of pre-recorded announcements driven by the caller who uses number prompts on a touch-tone telephone to interact with the system. Options can include speaking to a @live@ helper should the query be too complex for routine responses.

Java: Developed by Sun Microsystems, Java is a Web programming language supporting inline multimedia effects, such as animation, background music and continuously updated information in Web pages.

JPEG: (Joint Photographic Experts Group) - a standard of image compression developed especially for use on the Internet. Most photographic images can be highly compressed using this method, without greatly diminishing image quality.

Kilobyte: 1024 bytes, usually rounded down to a thousand bytes for simplicity.

LAN: Local Area Networks (LANs) are used to link computers within a building or across a site to carry non-voice communications such as data and text and sometimes images and video. LANs can be built in many ways to accommodate all sorts of equipment or can be restricted to a single supplier.

Leased Lines: Private lines can be leased from telephone operators for private use and can prove a cheaper and more secure option to public services. Typically, they start and finish on private premises and cannot be accessed from the public telephone network.



Modem: A simplified name for a modulator - demodulator - a piece of equipment needed to connect a computer to an ordinary telephone line. The modem's job is to convert computer language, which is digital, into analogue waveform to be carried by public or private telephone networks.

Multiplex: Simplified name for a sharing communications links so that a number of data terminals can use them at the same time. It can either be done by chopping the bandwidth used into sub - channels (Frequency Division Multiplexing) or by allotting bursts of time for each machine on the network (Time Division Multiplex).

Neural Networks: Networks driven by computers, which attempt to 'think' like the human brain - a further stage in the general trend towards "Intelligent Networks". The computers use parallel processing instead of rigid procedures employed by conventional equipment. This enables the network to be used to verify signatures, for example, or to decide to route calls automatically to your home, work or car depending on the time of day.

OFTEL: Office of Telecommunications, the Government's watchdog for the telecommunications industry, whose job is to oversee fair competition and pricing structures between the UK's incumbent supplier, BT, and its growing band of competitors.

On Line / Off Line: Computers, databases and transaction processing facilities which operate over public telephone networks are 'on line' when in use. Off line equipment has no links to the outside world.

Premium Rate Services: Pre - recorded 'programmes' or live interactive services, which can be accessed over normal telephone lines on payment of a higher, or premium charge over and above normal telephone costs. Premium Rate Services, which can range from sports and weather to adult services, are controlled by ICSTIS, the Independent Committee for the Supervision of Telephone Information Services.

PABX/PBX: Private Automatic Branch Exchange - otherwise shortened to PABX or PBX to describe a telephone exchange installed on private premises such as hotel or business office to act as an interface between the public network and the various extensions on its own network.

Protocols: All networks follow protocols. A protocol is simply a set of rules agreed to for data communications. 2 examples are X.25 and TCP/IP.

PSTN: Public Switched Telephone Network - the basic public telephone network, which connects every telephone in the UK, but which is increasingly being used to carry more sophisticated services for customers with special requirements.

Pulse dialling: Used with the old rotary telephones and some early push button telephones, each number dialled generates a set of pulses, which are sent to the network. If eight is dialled, 8 pulses are sent, if 5 is dialed 5 pulses are sent and so on.

Quick Time: Developed by Apple Computer Inc. - QuickTime is a form of video compression requiring the proprietary Quick Time software in order to play videos and movies downloaded off web sites.

Resource: A particular object of information provided on the Internet. Can be anything from an image through to a video or application.

SDH: Synchronous Digital Hierarchy - a worldwide standard that ensures compatibility between high-speed digital telephone systems, based on optical fibre rather than copper cabling. SDH standards are known as SONET (Synchronous Optical Network) in the USA but are compatible with those used everywhere else.

TCP: Transmission Control Protocol works in conjunction with IP to ensure that packets reach their intended destinations.



TCP/IP: Transmission Control Protocol / Internet Protocol - the two fundamental protocols which form the basis of the Internet.

Telnet: Terminal emulation program allowing an authorised user to access another computer on the Internet and use that computer as if it were local, when in reality it could be thousands of miles away.

Tone dialling: Each key on the telephone has a different tone, which is transmitted as the key is pressed. The benefit is faster dialling time - only one tone is transmitted for each key pressed. Computer can read Tone dialling without the need for conversion.

Unix: An operating system typically written in C, and designed for multi-user environments. It has TCP/IP built in and is therefore one of the most popular operating systems for servers on the Internet.

Upload: Transfer of files off a local computer up to a specified remote computer (as opposed to download where files are pulled off a remote machine).

URL: Uniform Resource Locator - resource addressing scheme of the World Wide Web. Assists in locating and identification of multimedia resources or multiple copies of resources.

Usenet: Specialised network-linking thousands of newsgroups covering every subject under the sun.

Videophone: A person-to-person version of video-conferencing, which paved the way for 'see and talk' dialogue as opposed to physical meetings. Videophones can be linked over the normal telephone network, to give recognisable but not (yet) high quality images of both parties, to a telephone conversation on equipment of similar size to a conventional sound only phone.

Voicemail: An electronic 'mailbox' in which spoken messages can be retrieved by the use of special codes over a touch-tone telephone. It can also be used the other way round to leave messages in someone else's mailbox.

VPN: Virtual Private Network - a telecommunications network dedicated to specific businesses rather than the general public but which uses elements of the public network for strategic or cost saving reasons.

WAN: Wide Area Network - a telecommunications network for business and organisations, which want to span large distances between their own sites, buildings or networks.

X.25: An international standard for public packet - switched networks.

X.400: An international standard for E-mail.

Yahoo: One of the first and therefore most comprehensive Internet directories, that lets you search by keywords or by using a tree based menu system. Yahoo is located at <http://www.yahoo.com>.

Zip: Files can be "zipped" or compressed into zip format, which require them to be unzipped or expanded before being installed. Zipped files can be recognised by the filename extension .zip.