Glossary of Internet & Broadband Terms

CENTRAL APPALACHIA Regional Network

DATA BASICS --Kbps, Mbps, Gbps

BITS is the base unit of information in computing. Internet network speeds (data rates) are normally measured in units of bits per second (bps). Network equipment makers typically rate their products using related, larger units of Kbps, Mbps and Gbps.

- one Kilobit per second (Kbps) equals 1000 bps. (Note: Kbps is sometimes also written as "kbps" - both carry the same meaning.) Dial up modem connections are 56 Kbps

- one megabit per second (Mbps) equals 1000 Kbps or one million bps; at this rate it takes about 30 seconds to download an MP3 song

- one gigabit per second (Gbps) equals 1000 Mbps or one million Kbps or one billion bps: about 10 seconds to download an HD movie

BYTES are the basic unit for file size – the amount of storage space digital information will take up - and are used in computing monthly data caps. Bytes(B) are listed as KBps, MBps, GBps. Finally, one kilobyte per second equals 8 kilobits per second.

DATA is a general term for videos, text, pictures or sound stored on, processed, sent or received by your computer.

INTERNET BASICS

Internet: A worldwide network of computers connected to each other by telephone lines, cables, and satellites. The Internet is more of a concept than an actual tangible entity. There are many organizations, corporations, governments, schools, private citizens and service providers that all own pieces of the infrastructure, but there is no one body that owns or controls it all. There are, however, organizations that oversee and standardize what happens on the Internet.

World Wide Web: The Web is a system for publishing pages of information on the Internet and for connecting pages using links.

Browser: A computer application that allows you to search for and display files (including Web pages, PDFs, images, video, and audio) over the Internet.

Search engine: A large, searchable database of links to millions of websites.

Cloud Computing: Refers to the ability to access and share computer programs and files over the Internet, rather than from your computer.

BROADBAND BASICS

Broadband is high-speed Internet access (e.g. DSL, Cable, Fiber, etc.) providing two-way data transmission. The Federal Communications Commission (FCC) defines "basic broadband" as 4 Mbps downstream (download), 1 Mbps upstream (upload), although some of their broadband maps define broadband as 3 Mbps download, 723 Mbps upload.

Download is the speed, measured in bits, that your computer receives data.

Upload is the speed that your computer sends data.

Asymmetric connections (typically DSL) have faster download than upload speeds, meaning it is harder for you to put your content up on the Internet.

Symmetric connections have comparable download/upload speeds. Businesses increasingly need symmetric connections to maximize productivity.

Bandwidth is the rate at which data can be transmitted; meaning the speed you'll be able to upload and download things online. Your broadband package may have download limits or a cap on the amount of data you can download.

Bundle is a package deal for services. For example, with mobile phones you could get a text and minutes bundle offering you call-time and text messages for a predetermined fee. A broadband bundle could be a combination of broadband and phone line rental or cable programming.

Contract is the deal you make with the broadband provider. They agree to supply the service, and you agree to stay with them, for a set period of time — usually twelve or eighteen months.

BROADBAND SERVICES

DSL provides high-speed networking over ordinary phone lines using broadband modem technology. DSL allows Internet and telephone service to work over the same phone line without requiring customers to disconnect either their voice or Internet connections. Common DSL speeds are .5 to 6 Mbps downstream, often below 1.5 Mbps upload. DSL Internet service only works over a limited physical distance and remains unavailable in many areas where the local telephone infrastructure does not support DSL technology. Also Known As: Digital Subscriber Line, ADSL, SDSL.

Cable uses a cable network to deliver services. Speeds vary from 6-30 Mbps download and 1-3 Mbps upload for standard rates. Cable networks are shared so speeds may go down during peak usage.

Fiber Optic Cable is a network cable that contains strands of glass fibers that carry communication signals using pulses of light inside an insulated casing. These cables are designed for long distance and very high bandwidth (gigabit speed). Fiber optic networks are reliable, resilient and use technology that offers nearly unlimited expansion without the need to re-lay cables once in place.

Satellite Broadband uses a satellite connection to provide a permanent connection to the Internet from a land-based location. These services in the US are currently expensive and offer slower speeds.

Fixed Wireless Broadband is a type of Internet access where connections to service providers are made using radio signals rather than cables. Although they tend to offer slower speeds than other types of broadband Internet, fixed wireless services can provide access in areas without DSL, Cable etc.

Wi-Fi is the industry name for Wireless Local Area Network (LAN). A WLAN provides wireless network communication over short distances using radio or infrared signals instead of traditional network cabling. Wi-Fi is best as a complement to wired connections, not as a substitute. Many 3G/4G wireless networks on mobile devices (like smart phones) have data caps that strictly limit usage or charge additional fees.

Smartphone: A cellular phone that allows you to access email and the Internet. Smartphones can be thought of as handheld computers within a mobile phone. Growing numbers of people use their smartphone for their Internet access, although there are limits in what you can do compared to a desktop/laptop computer, and wireless phone service providers charge for data usage.

Broadband Modems are used with DSL or cable Internet service. Cable modems connect a home computer (or network of home computers) to residential cable TV service, while DSL modems connect to residential public telephone service.

Broadband Routers are designed for setting up home/office networks with Internet service. Your broadband connection will pass through a router so that it's channeled onto the Internet correctly. Routers also enable sharing of files, printers and other resources among computers. A broadband router utilizes the Ethernet standard for wired connections. Newer broadband routers also incorporate wireless networking capability utilizing the Wi-Fi standards.

Internet Protocol (IP) enables information to be routed from one network to another. The information is sent in packets and then reassembled into information when it reaches its destination.

IP Address is the specific number ascribed to your Internet connection. It is similar to a phone or house number and can be seen by web pages when you relay information from them.

TCP-IP: This is another name for the Internet Protocol Suite, the different ways your computer is identified and communicates with the Internet and similar networks.

Internet Service Provider (ISP) supplies Internet connectivity to home and business customers. An ISP can be a private, public, or non-profit entity that provides a connection to the public Internet, often owning and operating the Last-Mile connection to end-user locations.

Exchange is the service area that your connection is associated with. For example if you are unable to receive broadband where you live it is because you are not within range of a broadband exchange.

Hotspot is an area where you can wirelessly connect to the Internet using a local area network. You may need a security password to connect to the Internet in specific hotspots.

SMTP (Simple Mail Transfer Protocol) is main protocol used to send electronic mail (Email) from server to server on the Internet. SMTP is a protocol for transferring e-mail across the Internet. You send e-mail with SMTP and a mail handler receives it on your recipient's behalf. Then the mail is read using POP3 or IMAP.

FTP - File transfer protocol — a process of obtaining and uploading files to and from the Internet.

GPS -Global Positioning System -- allows the user to know exactly where they are on earth and is now used within mobile-broadband technology.

Instant messaging is a service that allows you to ´chat´ with another Internet user in real time by typing.

SMS – short message service – is a term for text messages sent over cell phones and which are limited to 160 characters. MMS – Multimedia messaging service - allows for longer length, photos, video, audio etc.

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Spectrum – Communication technologies - like radio, television, cell phones - transmit on different frequencies (measured in Hertz – Hz) and, to prevent interference and allow for efficient use, are assigned to different bands in the electromagnetic spectrum. To prevent interference and allow for efficient use of the spectrum, similar services are allocated in bands. The federal government regulates the spectrum and can sell, license or provide open use of spectrum bands and frequencies. The move to digital broadcasting has made more spectrum available for use.

Streaming allows you to watch or listen to digital audio or video online and without storing it on your computer.

VoD - Video on Demand - these are systems allowing you to chose and watch either video or audio files when you want to.

VoIP -Voice over Internet Protocol - is a popular way to talk online using a broadband connection that is similar to talking on the phone Other terms for the service are IP telephony, Internet telephony, voice over broadband (VoBB), broadband telephony and broadband phone.

TELECOMMUNICATIONS/TELEPHONE TERMS

The future of traditional phone service is very much in debate with proposals from the telecommunications industry to eliminate landline service in many areas. This could have a serious impact on rural and low-income communities that are currently poorly served by broadband and wireless providers. These definitions are helpful in following and participating in that debate:

Plain Old Telephone Service (POTS) – Also known as "landline phone" service, this is basic single line switched access service offered by local exchange carriers to residential and business end users, using loop-start signaling.

Public Switched Telephone Network (PSTN) is the worldwide collection of interconnected public telephone networks that was designed primarily for voice traffic. The PSTN provides traditional landline phone service (POTS) to residences and many other establishments. Parts of the PSTN are also utilized for DSL, VoIP and other Internet-based network technologies. The PSTN is a circuit switched network, in which a dedicated circuit (also referred to as a channel) is established for the duration of a transmission, such as a telephone call. This contrasts with packet switching networks, in which messages are divided into small segments called packets and each packet is sent individually. Packet switching networks were initially designed primarily for data traffic.

Central Office (CO) - A telephone company facility in a locality to which subscriber home and business lines are connected on what is called a local loop. The central office has switching equipment that can switch calls locally or to long-distance carrier phone offices. Telephone lines go through this local exchange in order to reach the rest of the telephone network. The exchange separates voice from data communications and forwards them on to the correct part of the telephone network.

Common carrier - A telecommunications provider, such as a telephone company, that offers its services for a fee to the public indiscriminately.

Carrier of last resort - The carrier that commits (or is required by law) to provide service to any customer in a service area that requests it, even if serving that customer would not be economically viable at prevailing rates.

Regional Bell Operation Company (RBOC) - Local exchange carriers formed after the breakup of AT&T in 1984. The seven regional holding companies (RHCs) of roughly equal size were formed as a result of the 1982 Consent Decree AT&T signed with the U.S. Department of Justice, stipulating that it would divest itself of its 22 wholly owned telephone operating companies. The seven RHCs were Ameritech, Bell Atlantic, BellSouth, NYNEX, Pacific Telesis, Southwestern Bell and US West. After a series of acquisitions, mergers and name changes (including one in which a combination of several RHCs reclaimed the original AT&T name), only three of the original seven remain. They are AT&T, CenturyLink (which bought Qwest) and Verizon. The RBOCs are the incumbent local exchange carriers (ILECs) in their local markets.

Incumbent Local Exchange Carrier (ILEC) - The dominant local phone carrier within a geographical area. Section 252 of the Telecommunications Act of 1996 defines Incumbent Local Exchange Carrier as a carrier that, as of the date of enactment of the Act, provided local exchange service to a specific area; for example, Verizon, Windstream and Frontier.

Competitive Access Providers (CAP) and Competitive Local Exchange Carriers (CLEC) are companies formed after the 1996 Act that compete against the ILECs in local service areas.