



## Broadband Glossary

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CONNECTING AMERICA'S COMMUNITIES

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## Numbers

**3G:** The term for the 3<sup>rd</sup> generation wireless telecommunications standards usually with network speeds of less than 1 Mbps.

**4G:** The term for 4<sup>th</sup> generation wireless telecommunications standards usually with network speeds greater than 1 Mbps.

**5G:** The term for emerging 5<sup>th</sup> generation wireless telecommunications standards usually associated with network speeds of up to 1 Gbps or more.

## A

**ADSL (Asymmetrical Digital Subscriber Line):** A form of Internet service communications technology that delivers constantly accessible data transmissions over copper telephone lines. ADSL is a common brand of DSL and has download speeds between 2 and 6 Mbps and upload speeds reaching 512 Kbps.<sup>1</sup>

**Asymmetrical Bandwidth:** A connection in which the maximum transfer rate is different for download and upload speeds.<sup>1</sup>

**ATM (Asynchronous Transfer Mode):** A transmission method where information is re-structured into cells. It is asynchronous due to the fact that the recurrence of cells from an individual user is not necessarily periodic.<sup>2</sup>

## B

**Backbone:** A major high-speed transmission line that strategically links smaller high-speed Internet networks across the globe.<sup>3</sup>

**Backhaul:** The portion of a broadband network in which the local access or end user point is linked to the main Internet network.

**Bandwidth:** The capability of telecommunications and Internet networks to transmit data and signals.<sup>1</sup>

**Bond:** A fixed-income security in which a borrower borrows money from an investor for a specified period of time at fixed or variable interest rate.

**Broadband:** The term broadband commonly refers to high-speed Internet access that is always on and faster than traditional dial-up access. Broadband includes several high-speed transmission technologies, such as fiber, wireless, satellite, digital subscriber line and cable. For the Federal Communications Commission (FCC), broadband capability requires consumers to have access to actual download speeds of at least 25 Mbps and actual upload speeds of at least 3 Mbps.<sup>1</sup>

**Broadband Adoption:** The use of broadband in places where it is available, measured as the percentage of households that use broadband in such areas. Link to Digital Inclusion definition<sup>1</sup>

**Burstable:** Authorizes a connection to exceed its specified speed, normally up to a set maximum capacity for a period of time.<sup>4</sup>



**Burst Speed:** A method which momentarily allots additional bandwidth to consumer's services for short periods of time.<sup>1</sup>

## C

**Central Office:** A telecommunication company's building where consumers' phone lines are attached to equipment that connects a consumer to other consumers in that central office or other central offices across the globe.<sup>5</sup>

**Community Anchor Institutions:** Schools, libraries, medical and healthcare providers, public safety entities, institutes of higher education and other community support organizations that provide outreach, access, equipment and support services to facilitate greater use of broadband service by the entire population and local governments.<sup>3</sup>

**Community Needs Assessment:** An assessment of the deficiencies that exist in a community that are preventing it from reaching goals or desired results relating to broadband.<sup>6</sup>

## D

**Dark Fiber:** Fiber that is in place but not being used for broadband services. ("non-lit" fiber, also see "Lit Fiber").<sup>7</sup>

**Digital Divide:** The gap between those of a populace that have access to the Internet and other communications technologies and those that have limited or no access.

**Digital Equity:** Recognizes that digital access and skills are now required for full participation in many aspects of society and the economy. Digital Equity links Digital Inclusion to social justice and highlights that a lack of access and/or skills can further isolate individuals and communities from a broad range of opportunities.

**Digital Inclusion:** Implies that individuals and communities have access to robust broadband connections; Internet-enabled devices that meet their needs; and the skills to explore, create and collaborate in the digital world.

**Digital Literacy:** The ability to leverage current technologies, such as smartphones and laptops, and Internet access to perform research, create content and interact with the world.<sup>8</sup>

**Digital Skills:** Any skills related to operating digital devices or taking advantage of digital resources.

**DOCSIS (Data Over Cable System Interface Specification):** The international telecommunications standard for cable signaling data and spectrum sharing.<sup>2</sup>

**DSL (Digital Subscriber Line):** A form of technology that utilizes a two-wire copper telephone line to allow users to simultaneously connect to and operate the Internet and the telephone network without disrupting either connection.<sup>1</sup>

## E

**eGovernment Services:** The government's use of web-based and information technology resources to connect with citizens and provide online services and resources.<sup>8</sup>

## F



**Fiber** (Also referred to as Fiber Strand): A flexible hair-thin glass or plastic strand that is capable of transmitting large amounts of data at high transfer rates as pulses or waves of light.

**FTTH or FTTP (Fiber to the Home or Fiber to the Premise):** The delivery and connection of fiber optics directly to a home or building.<sup>7</sup>

**Fixed Wireless Broadband Access:** The use of wireless devices/systems in connecting two fixed locations, such as offices or homes. The connections occur through the air, rather than through fiber, resulting in a less expensive alternative to a fiber connection.<sup>1</sup>

## G

**Grant:** A legal instrument reflecting a relationship between a government agency and a recipient. The main purpose of the relationship is to dispense money or resources in order to accomplish a public purpose. No substantial involvement is anticipated by the government agency during the recipient's completion of the activity.<sup>9</sup>

## I

**Internet Service Provider (ISP):** A company that provides users (individuals or businesses) with access (a connection) to the Internet and related services.<sup>3</sup>

**Interconnection:** The linking of numerous telecommunications networks to exchange user traffic.<sup>3</sup>

## L

**Last Mile:** The technology and process of connecting the end customer's home or business to the local network provider.<sup>3</sup>

**Lit Fiber:** An active fiber optic cable capable of transmitting data.

**LMDS (Local Multipoint Distribution Service):** A wireless broadband service that uses microwave signals to render communications service – voice, data, Internet – to customers within the last mile.<sup>1</sup>

**Loan:** The giving of money or property in exchange for payment of the principal amount plus interest.

**Local Area Network (LAN):** A group of network devices that are on a high-speed connection and typically within the same building or location. (cite: Indiana University, <https://kb.iu.edu/d/agki>)

**LTE (Long Term Evolution):** A 4G wireless broadband technology that provides speeds up to 100 Mbps download and 30 Mbps upload.

## M

**Middle Mile:** The connection between a local network, also called a "last mile" connection, and the backbone Internet network.<sup>3</sup>



## N

**Network Infrastructure:** The hardware and software components of a network that provide network connectivity and allow the network to function.

## O

**Open Access Network:** Networks that offer wholesale access to network infrastructure or services provided on fair and reasonable terms with some degree of transparency and nondiscrimination.

## P

**Point of Presence:** The particular place or facility where local Internet service providers connect to other networks. Distance from the Point of Presence can affect service availability and pricing.<sup>3</sup>

**Public Computer Center (PCC):** A facility that is open to the public and provides broadband access, education, support and training relevant to community needs. PCC locations include, but are not limited to, community colleges, libraries, schools, youth centers, employment service centers, Native American chapter houses, community centers, senior centers, assistive technology centers for people with disabilities, community health centers and centers in public housing developments that provide broadband access to the general public or specific vulnerable populations, such as low-income, unemployed, older adults, children, minorities and people with disabilities.<sup>6</sup>

## R

**Rights-of-Way (ROW):** ROW are legal rights to pass through property owned by another. ROW are frequently used to secure access to land for digging trenches, deploying fiber, constructing towers and deploying equipment on existing towers and utility poles.<sup>6</sup>

## S

**Service Area:** The entire area within which a service provider either offers or intends to offer broadband service.<sup>6</sup>

**SDSL (Symmetrical DSL):** A technology that permits the transfer of data over copper telephone lines. The transmission bandwidth for uploads and downloads is equal.<sup>1</sup>

**SONET (Synchronous Optical Network):** An American National Standards Institute standard for the simultaneous transmission of data over optical fiber.<sup>10</sup>

**Spectrum:** A conceptual tool used to organize and map the physical phenomena of electromagnetic waves. These waves propagate through space at different radio frequencies, and the set of all possible frequencies is called the electromagnetic spectrum.<sup>6</sup>

## T

**Tax Increment Financing:** A public financing method through which future property tax increases can be diverted to subsidize community development and improvement projects.

**Tier 1 Internet Network:** A network of Internet providers that form a superhighway that allows users access to every other network on the Internet.<sup>3</sup>





**Tier 2 Internet Network:** A network of smaller Internet providers that allow users to reach some portion of the Internet but that still purchase IP transit.<sup>3</sup>

**Telemedicine:** The use of high-speed, high-capacity Internet to support long-distance healthcare services, patient and provider education and enhanced healthcare administration.<sup>11</sup>

**V**

**VoIP (Voice over Internet Protocol):** A technology that allows users to send and receive voice calls using an Internet connection instead of a phone line.<sup>1</sup>

**W**

**WiFi (Wireless Fidelity):** A technology that uses radio transmissions to enable electronic devices to connect to a wireless local area network (LAN).

**WiMAX:** A wireless technology through which wireless Internet access is provided with a significantly larger range than regular WiFi. WiMAX can provide broadband service up to 30 miles.<sup>3</sup>

**WISP:** An ISP that provides service through a wireless network.

**Figure 1: Table of Units**

The following units are associated with broadband:	
Bit	Smallest unit of digital information
Byte	Equal to 8 bits
Bps	Bits per second
Kbps	Kilobits per second (1000 bits per second)
Mbps	Megabits per second (1 million bits per second)
Gbps	Gigabits per second (1 billion bits per second)
Tbps	Terabits per second (1 trillion bits per second)





- <sup>1</sup> Federal Communications Commission. Retrieved from <https://www.fcc.gov/general/national-broadband-plan>
- <sup>2</sup> International Telecommunications Union. Retrieved from <https://www.itu.int/osg/spu/ip/glossary.html>
- <sup>3</sup> Northern Regional Broadband Glossary. Retrieved from <http://broadband.uwex.edu/wp-content/uploads/2011/03/glossary-of-broadband-terms.pdf>
- <sup>4</sup> Newton, H. (2009). Newton's Telecom Dictionary 217 (25th ed) Retrieved from [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-12-46A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-12-46A1.pdf)
- <sup>5</sup> Pennsylvania Public Utility Commission. Retrieved from [http://www.puc.state.pa.us/consumer\\_info/telecommunications/area\\_codes/telecommunications\\_dictionary.aspx](http://www.puc.state.pa.us/consumer_info/telecommunications/area_codes/telecommunications_dictionary.aspx)
- <sup>6</sup> National Telecommunications & Information Administration. Retrieved from <https://www.ntia.doc.gov/>
- <sup>7</sup> Closing the Digital Divide. Retrieved from <http://www.dallasfed.org/assets/documents/cd/pubs/digitaldivide.pdf>
- <sup>8</sup> American Library Association Connect. Retrieved from <http://connect.ala.org/node/181197>
- <sup>9</sup> Office of the Secretary USDA Glossary of Terms and Acronyms. Retrieved from <http://www.osec.doc.gov/oam/archive/docs/Chapter%203%20012011.pdf>
- <sup>10</sup> American National Standards Institute. Retrieved from <https://www.ansi.org/>
- <sup>11</sup> Field, MJ. (1996). Telemedicine: A Guide to Assessing Telecommunications in Health Care. Retrieved from <http://www.ncbi.nlm.nih.gov/books/NBK45440/>