



Broadband 101

WHAT IS BROADBAND?

The definition of broadband, or high-speed Internet access, is constantly changing and being challenged. The term is typically used to describe Internet service that is faster than traditional dial-up Internet access. The National Telecommunications and Information Administration currently defines broadband as speeds that move data at a rate of 768 Kilobits per second (Kbps) downstream and 200 Kbps upstream.

HOW IS BROADBAND DIFFERENT FROM DIAL-UP SERVICE?

- Provides higher-speed of data transmission -- more content can fit in the “pipeline”
- Provides access to the highest quality Internet services— video, streaming media, VoIP (Internet phone), online business applications and interactive services
- Broadband is always on -- does not block phone lines, no need to reconnect to the network
- Less delay when downloading or sending files

HOW WILL THIS IMPACT THE DAY-TO-DAY LIVES OF MISSOURIANS?

Capacity, choice and speed are some of the obvious benefits of expanded broadband. What may not be as obvious is the potential that comes about when technology opens the door to opportunity. While rural America has often struggled to gain access to the highest level of education, healthcare, retail and other services, the ability to connect people and ideas at the speed of light changes everything. Other benefits include:

- Economic Development- Broadband can provide access to regional, national and worldwide markets, enhancing the opportunities for current businesses, while providing the infrastructure to attract entrepreneurs, knowledge workers, and technology-based companies that would have not otherwise considered locating in particular areas of the state nor this region of the country.
- Education- All levels of the education continuum, including primary, secondary, post-secondary, home-schooling and continuing education programs, stand to gain incredible opportunities. High speed connectivity offers the promise of remote class instruction, shared course offerings and teachers and administrators networking with peers. Broadband can overcome geographical and financial barriers to provide access to a wide range of educational and cultural opportunities.
- Healthcare- Telemedicine and telehealth have the potential to revolutionize health care in rural America by allowing rural providers and patients the opportunity of access to specialists, retrieval of health records, improved emergency response, reduced transportation costs, the offering of new alternatives for home health and e-visits and connecting health professionals to their patients in real time -- facilitating provisions of the highest quality of medical care to currently unserved and underserved populations.

The availability of an expansive and affordable broadband network will also improve many other aspects of our citizens’ lives, such as in the areas of agriculture, public safety, government administration, real estate and land values, tourism and the overall quality of life of Missourians.



BROADBAND TERMS TO KNOW

Backbone- The part of a communications network that acts like the central nervous system, a central hub from which all parts of the network extend.

Broadband- As defined by the National Telecommunications and Information Administration, broadband describes always-on, high-speed Internet access that moves data at a rate of at least 768 Kbps downstream and 200 Kbps upstream.

BPL (Broadband over PowerLine)- Delivery of broadband over the existing low- and medium-voltage electric power distribution network at speeds that are comparable to DSL and cable modem speeds. BPL is an emerging technology with significant potential -- power lines are installed virtually everywhere.

Cable Modem- Enables cable operators to provide broadband using the same coaxial cables that deliver pictures and sound to your TV set. Most are external devices with two connections: one to the cable wall outlet, the other to a computer. They provide transmission speeds of 1.5 Mbps or more.

Community Anchor Institutions- Schools, libraries, medical/healthcare providers, public safety institutions and other community support organizations and agencies that provide outreach, access, equipment and support services. They work to facilitate increased use of broadband service by underserved populations.

Dial-up connection- A data communications link that is established when the communication equipment dials a phone number and negotiates a connection with the equipment on the other end of the link. It provides the ability to dial-up the Internet, at speeds up to 56 Kilobits per second (Kbps), via a modem over standard telephone lines.

DSL (Digital Subscriber Line)- Wireline transmission technology that transmits data faster than dial-up over traditional copper telephone lines already installed to homes and businesses. DSL-based broadband provides transmission speeds ranging from several hundred Kbps to Mbps.

Fiber Optic- A technology that converts electrical signals carrying data to light and sends the light through transparent glass fibers about the diameter of a human hair. Fiber optic transmits data at speeds far exceeding current DSL or cable modem speeds, typically by tens or even hundreds of Mbps.

Last mile- Portion of network that provides broadband service to end users or end-user devices (including households, businesses, community anchor institutions, public safety entities, and critical community facilities).

Middle mile- Network infrastructure not delivering services to end users. May include interoffice transport, backhaul, internet connectivity, or special access.

Satellite- Another form of wireless broadband that is also useful for serving remote or sparsely populated areas. Speeds may be slower than DSL and cable modem, but can be about 10 times faster than the download speed available with dial-up Internet access.

Served Area- Service area where more than half of households meet minimum access and speed requirements and adoption/subscription rates exceed 40%.

Underserved Area- Service area, consisting of one or more contiguous census blocks, where half the households lack access to minimum broadband service, or an area where no land or mobile service offers broadband with at least 3 Mbps, or areas where less than 40% of households subscribe to any service.

Unserved Area- Service area, made up of one or more contiguous census blocks, where at least 90% of households lack access to facilities-based minimum broadband service, either fixed or mobile.

Wireless- Connects a home or business to the Internet using an over-the-air radio link between the customer's location and the service provider's facility. Wireless broadband can be mobile or fixed.

TALKING SPEED IN BITS

Bandwidth - Amount of data that can flow in a given amount of time.

Kbps - Kilobits or thousands of bits per second.

Mbps - Millions of bits per second.

Gbps - Billions of bits per second.

MoBROADBANDNow INITIATIVE

<http://transform.mo.gov/broadband/>

Email:

Transform.broadbandinterest@mo.gov

Twitter:

@MoBroadbandNow

Damon Porter

MOBroadbandNow Director

Office of Administration



<http://transform.mo.gov/broadband/>