

THE DIGITAL DIVIDE

As the global community gets smaller thanks to the growing use of the Internet, the gap between the haves and have-nots—in this case those who have high-speed Internet access and those who don't—continues to grow. At no other time in history has the phrase “knowledge is power” been more accurate. The access to information is key to success in business, education and even our personal lives.

Million dollar deals are made via e-mail; degrees are earned over the Internet; bills are paid online. With increasing sophistication, Web sites drive business and even win elections. For those without access to high-speed Internet connections, the instant Internet world is whizzing by at an alarming rate. This digital divide is exacerbating existing socioeconomic disparities. As a result, on many levels, successful economic growth and future social mobilization depend on broadband universality. A number of federal, state and local initiatives and proposals are underway that may help make universal broadband a reality.

The Sociology of Our Digital Divide

In today's Internet society, there is increasing attention on the correlation between class divisions and the growing digital divide.

According to a 2009 consumer research from Leichtman Research Group Inc., 89 percent of households with an income of more than \$75,000 subscribe to broadband Internet access. On the flipside, only 37 percent of households with an annual income of less than \$30,000 have broadband subscriptions.¹ Broadband subscriptions are more expensive and therefore considered a luxury by many poorer households. As increasingly sophisticated Web sites—including those that allow online bill paying and remote learning—become the norm, however, high speed broadband connections are becoming a necessity.

Just as incomes trend lower in more rural areas, broadband Internet access also declines in more rural settings. The 2009 Pew Home Broadband Adoption study found that while 67 percent of nonrural (includes urban and suburban) households have broadband at home, compared to 46 percent of rural households.² The lack of high speed Internet access is exacerbating existing socioeconomic and geographic disparities. In addition, the growing digital divide is costing the nation as a whole, as the U.S. lags further and further behind the rest of the industrialized world. According to the New America Foundation, a nonpartisan public policy institute, “the U.S. has fallen from first to between 15th and 21st in the world in terms of broadband access, adoption, speeds and prices.”³

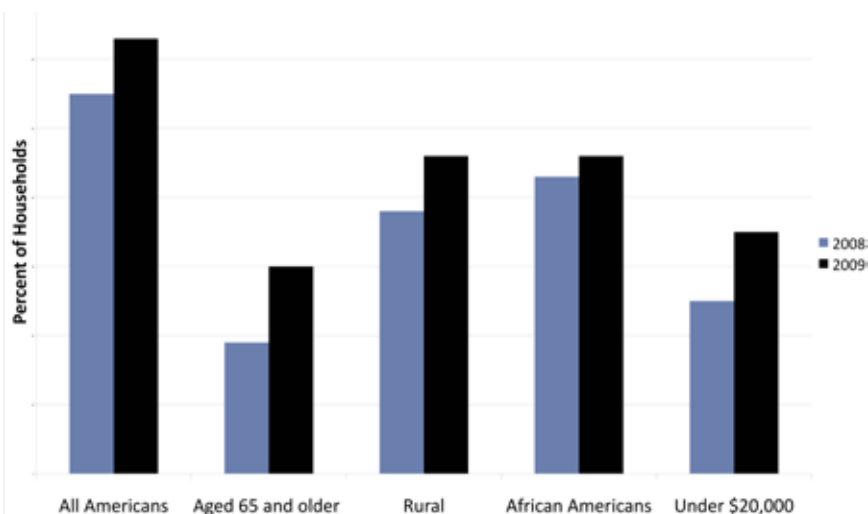


Key Definitions

- ▶ **Information Literacy**—Defined by the National Forum on Information Literacy as the ability to recognize the need for information and to identify, locate and evaluate the information needed to address an issue or problem.
- ▶ **Digital Divide**—DigitalDivide.org categorizes it as the gap that exists between those who benefit from digital technology and those who do not.
- ▶ **Broadband**—The FCC defines broadband as 768 kb/s or greater internet service. This includes cable modem, DSL and wireless services but excludes dial-up service.

Existing policies related to broadband spectrum availability and regulation, as well as standard service provision practices contribute to the digital divide in America today. As a result of current Federal Communications Commission practices, a large portion of the available spectrum (the range of electromagnetic waves by which wireless signals are carried) is unused. Although few studies on spectrum have been con-

Home Broadband Adoption Across Various Demographics, 2008 and 2009



ducted, a 2004 study in six locations along the East Coast, documented an average total spectrum use of less than 10 percent, including only 13 percent in the midst of New York City during a national convention.⁴ The House Subcommittee on Communications, Technology and the Internet is pushing for the FCC and the Commerce Department's National Telecommunications and Information Administration to conduct an inventory of spectrum under its jurisdiction. In addition, the FCC is reviewing policies to create increased incentive for providers to buy and supply spectrum access more broadly.

Such changes in policy perspective are needed across all levels of government. Just as the provision of electricity, running water and paved roads were adopted as essential services during the 1930s as part of that era's efforts to combat poverty, so too must broadband be viewed as an essential service of the modern era.

Possible Federal-State Solutions

While many of the needed policy changes must be implemented on a federal level by the FCC and other entities, there are several potential solutions state governments can implement in tandem with federal policy shifts. One of the most effective reform measures avail-

able is a change in the way subsidies are offered to telecommunications providers, according to Brookings Institution, a Washington, D.C.-based independent research and policy organization. Many subsidies target usage in existing markets. State governments could help promote expanded broadband availability by targeting subsidies for deployment of services to currently under-served areas such as rural communities.

In December 2009, the Obama administration kicked off a \$7.2 billion in Recovery Act broadband grant and loan programs. The bulk of the funds directed at broadband—\$4.7 billion—will be distributed through a program run by the Commerce Department's National Telecommunications and Information Administration which will provide grants to support the deployment of broadband infrastructure in unserved and underserved areas, to enhance broadband capacity at public computer centers, and to encourage sustainable adoption of broadband service. The remaining \$2.5 billion will be administered by the Department of Agriculture's Rural Utilities Service with particular emphasis on broadband use in rural areas. The awards are not only expected to provide initial job opportunities in infrastructure and manufacturing, but help bridge the digital divide and boost economic development for communities

held back by communities held back by limited or no access to the technology. In addition, as part of the Recovery Act, Congress directed the FCC to develop, by Feb. 17, 2010, a plan that seeks to ensure that people of the United States have access to broadband capability.

The New America Foundation's 21st Century Broadband Superhighway initiative offers another federal-state partnership alternative that could prove the most efficient and cost-effective way to achieve near universal broadband coverage. The so-called 2009 omnibus transportation bill, whose passage has been delayed, is expected to be a multi-year reauthorization of funding of transportation projects. According to New America, if Congress takes advantage of the opportunity and earmarks between \$1.2 billion and \$3.6 billion to mandate the inclusion of fiber optic infrastructure expansion as part of all construction,^{3,5} resurfacing and upgrading projects on the nation's highway system, broadband universality can be realized.

A major obstacle to expanding broadband service to rural areas is the associated cost per person for running fiber to remote areas. But since, nearly 90 percent of the U.S. population lives within five miles of a national highway system road,⁶ there is a resolution. Current federal highway funding guidelines allow for the use of transportation funds to offset the cost of accommodating utilities.⁷ If Congress approves the necessary funds, state governments can administer their share of highway funding in such a way as to promote the expansion of broadband service. New America estimates that piggybacking road construction and utility provision projects in this manner would increase project costs by an average of only 1 percent.³ As a result, coupling utility provision with road projects in rural areas is a cost-effective way of expanding broadband service.

Possible State-Local Solutions

In 2008, many state legislatures addressed the need and desire to expand broadband availability in a number of ways—from Alabama's bill seeking to establish a Broadband Task

Force to California's resolution promoting "communications technologies digital literacy" through the "ubiquitous provision of broadband service". In addition to the subsidy changes previously mentioned, there are a number of policies and funding alternatives states can explore to more effectively promote the affordable expansion and provision of broadband services.

Vermont may be a small state but, as a largely rural state, it embodies the challenges of expanding broadband service. Since 2007, Gov. Jim Douglas has been committed to an e-State initiative designed to achieve universal high speed Internet access by 2010. The initiative established the Vermont Telecommunications Authority charged with facilitating the establishment and delivery of broadband infrastructure and services. This was to be accomplished by establishing partnerships with telecommunications providers; providing loans, grants and other financial backing to build broadband service; and brokering access at reduced prices from service providers.

As with the provision of many other utilities, local governments are often more ideally situated to exact change in provision and pricing policies than are state governments. Therefore, realizing the goal of universal broadband will likely require considerable state and local cooperation. Successful local service models can be found across the country from the Wireless Philadelphia Project in Pennsylvania to Utah's UTOPIA (See inset for details). State budget and regulatory support for these types of local efforts could hold the key to building a broadband nation.

An Investment in Our Future Growth

At a time when our national economy is struggling and states from coast to coast are experiencing severe budget shortfalls, the call for increased investment in telecommunications infrastructure may, at first glance, seem far-fetched. In the final analysis, however, a failure to invest adequately in telecommunications infrastructure—in particular high speed Internet availability—could set the nation back even

Five Success Stories

- 1. First 'white space' network launched in Claudville, Va.** In November, 2008, the FCC voted to allow carriers and other vendors to deploy devices in the unlicensed white spaces spectrum -- unused television frequencies under an experimental license from the FCC. Spectrum Bridge provided the network infrastructure, and Dell, Microsoft and the TDF Foundation contributed computer systems to the local school and computer center. The use of TV white spaces hold promise for other rural communities in Virginia and throughout the country as well as underserved areas.
- 2. The Wireless Philadelphia Project** achieved wireless Internet and broadband universality citywide through the creation of a nonprofit corporation that contracted private vendors to design, build and manage a new wireless network. Local companies and other organizations buy access to the network at discounted rates than market residential services. Companies are required to offer discounted rates to low-income and disadvantaged residents and businesses.
- 3. NETWI**—A group of local Northeast Texas residents tapped into area professional talent to solve their Internet access problems with the creation of the first municipal-wide "open source" wireless mesh network in the country. The entire network was built with volunteer efforts and donations of time and resources. Today Atlanta, Texas, and Queen City, Texas, enjoy the kind of low-cost wireless access available in urban areas.
- 4. Wireless Community Networks** was started by The Center for Neighborhood Technology to bring Internet to people who might otherwise not be able to afford it. The resulting low-cost, high-speed broadband networks are being tested in four Illinois communities: Chicago's Pilsen and Lawndale neighborhoods, the Chicago suburb of Elgin and West Frankfort, a rural coal mining town. By the end of 2005 nearly 700 households were online as a result of the project.
- 5. UTOPIA**, or the Utah Telecommunications Open Infrastructure Agency, is a consortium of 14 cities that have banded together to create an all-fiber network that will serve about 170,000 homes and businesses when completed. Multiple private companies provide a broad range of services including internet-based telephone service, video-on-demand and ultra-broadband connectivity. The successful effort required a great deal of multi-level cooperation including the creation of an interlocal agreement and extensive lobbying inside the state legislature and at city councils to prevent potentially damaging laws and regulations.

more. Every year that the digital divide grows, America falls further behind other industrialized nations in technological advances and service provision—as well as economic growth. In a world increasingly built on technology, we cannot afford to continue this decline.

Indeed, investment in telecommunications infrastructure and broadband universality will help grow our lagging economy. High-speed Internet access puts millions in touch with essential educational, medical, commercial and professional resources. An Appalachian Regional Commission study estimates that a national broadband network could create as many as 1.2 million jobs.⁸ Similarly, a June 2007 report from the Brookings Institution found that for every one percentage point increase in broadband penetration in a state, employment is projected to increase by 2 to 3 percent per year.⁹ In the end, investment in a national broadband network is one all levels of government must commit to and work together to realize.



References

1 Leitchman Research Group, Inc., 4Q 2009, Actionable Research on Broadband, Media and Entertainment Industries. Retrieved January 13, 2010 from http://www.leitchmanresearch.com/research/notes12_2009.pdf

2 Horrigan, John, Pew Research Center, Home Broadband Adoption 2009. Retrieved January 13, 2010 from <http://www.pewinternet.org/Reports/2009/10-Home-Broadband-Adoption-2009.aspx>

3 New America Foundation, "Building a 21st Century Broadband Superhighway, January 2009. Retrieved January 13, 2010 from http://www.newamerica.net/publications/policy/building_21st_century_broadband_superhighway

4 McHenry, M. (2004). "Spectrum occupancy measurements" (six reports). Retrieved January 12, 2010 from <http://www.sharedspectrum.com/measurements/>

5 Legislation has been introduced in the House (H.R. 2428) and Senate (S. 1266), Broadband Conduit Deployment Act of 2009, that directs the Secretary of Transportation to require states to install broadband conduits (conduits for fiber optic cables or wireless facilities that support broadband service) in certain highway construction projects.

6 Slater, Rodney, E. (1996). "The National Highway System: A Commitment to America's Future, U.S. Department of Transportation, Federal Highway Administration. Retrieved January 12, 2010 from <http://www.tfhr.gov/pubrds/spring96/p96sp2.htm>

7 "Utility Reallocation and Accommodation of Federal-Aid Highway Projects," Office of Program Administrator, Federal Highway Administration, Sixth Edition (2003).

Retrieved January 12, 2010 from <http://www.fhwa.dot.gov/reports/utilguid/if03014.pdf>

8 Crandall, Robert W., et al, The Effect of Ubiquitous Broadband Adoption on Investment, Jobs, and the U.S. Economy, conducted by Criterion Economics, LL for the New Millennium Research Council, September 2003. Retrieved January 13, 2010 from http://www.newmillenniumresearch.org/archive/bbstudyreport_091703.pdf

9 Crandall, Robert W., et al, The Effects of Broadband Deployment on Output and Employment: A Cross-sectional Analysis of U.S. Data, June 2007. Retrieved January 13, 2010 from <http://www.brookings.edu/views/papers/crandall/200706litan.pdf>

