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Broadband Access Lacking in West Virginia

Paul Miller

State-of-the-art infrastructure, such as good roads and excellent schools, attracts businesses to a state. In today's world this also includes access to high-speed Internet or broadband. With more and more commerce taking place online, access to broadband can level the playing field between rural and non-rural communities when it comes to economic development. Unfortunately, West Virginia lags behind the nation when it comes to access to this important utility.

Introduction

Broadband is efficient because it uses a wide band of frequencies to send information at high speed. Broadband is now the preferred choice among American businesses and consumers in how they access the Internet.¹ Because they need only exist in a virtual marketplace, rural businesses rely on broadband to remain competitive in a global economy.² Likewise people who live in rural areas benefit by having broadband access when they use the Internet.

This policy brief discusses how West Virginia is behind nationally in terms of broadband access, why broadband is crucial to economic development and what policy actions can help West Virginia conquer the “digital divide” that exists between rural and non-rural communities in terms of broadband access.

West Virginia Lags in Broadband Deployment

Rural communities often lag behind non-rural communities in both access to and take-up rates of high-speed Internet due to poor quality and higher costs of subscription.³ This disparity is referred to as the “digital divide.”⁴ Among American households with Internet service, 70 percent of rural households had access to broadband versus 84 percent among non-rural households.⁵

Sixty-three percent of all West Virginia households have some form of access to the Internet, not all of which is high-speed. Part of the reason is lack of Internet service providers. In fact, West Virginia ranks 45th in the country in terms of the number of Internet service providers. Furthermore, the Mountain State also ranks 48th in the percent of population with access to broadband at home (Table 1).

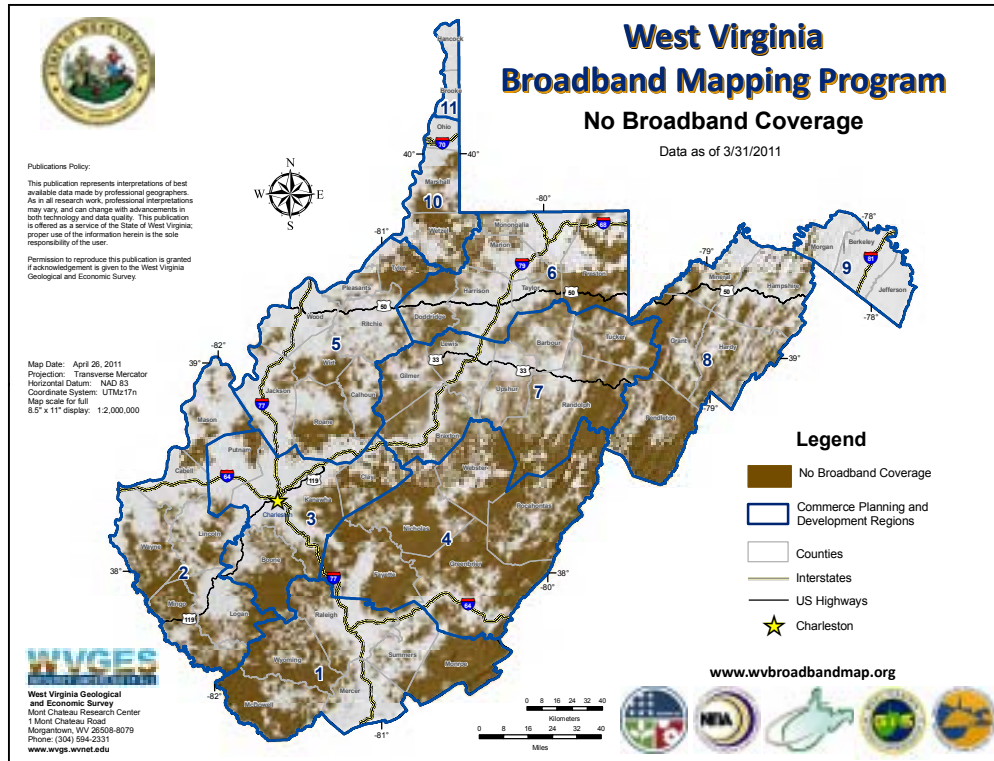
Many areas of West Virginia lack broadband coverage (Figure 1). Many of the same areas have a limited number of Internet service providers (Figure 2).

Table 1
West Virginia ranks below other states

State	Number of Internet Service Providers	Percent of Population with Broadband Access
Kentucky	23rd	43rd
Maryland	32nd	6th
Ohio	7th	26th
Pennsylvania	14th	12th
Tennessee	25th	46th
Virginia	19th	17th
West Virginia	45th	48th

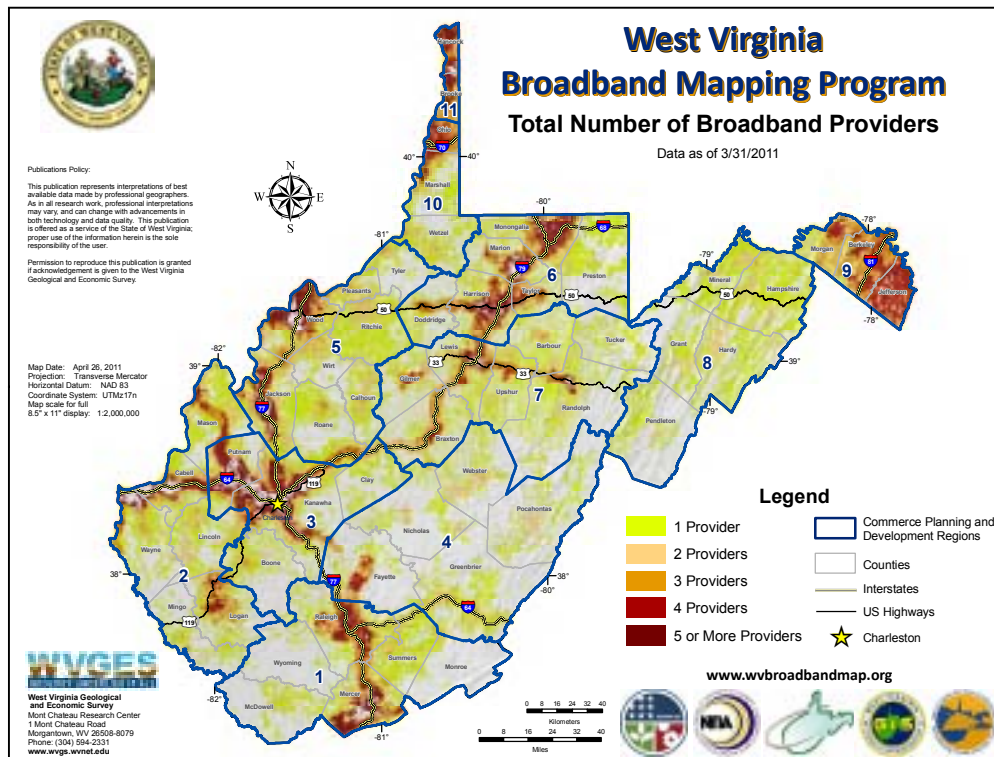
Source: U.S. Federal Communications Commission, Internet Access Service, analysis by author.

Figure 1
Many Areas of West Virginia lack broadband access



Source: West Virginia Geological and Economic Survey, 2011.

Figure 2
Number of broadband providers across West Virginia varies



Source: West Virginia Geological and Economic Survey, 2011.

Broadband Access Supports Economic Development

Broadband deployment and economic development go hand-in-hand. Studies show that an increase in broadband access is correlated with an increase in employment, income, and labor productivity. Broadband can also level the economic development playing field between rural and non-rural communities.

Broadband Access and Its Early Adoption Lead to a More Competitive Economy

Studies on the employment effects of broadband deployment concluded that communities with broadband outperformed communities where broadband was not available.⁶ A study by the U.S. Department of Agriculture found that wages, jobs, and the number of businesses grew faster in counties with early broadband Internet access than in counties which did not have early access to broadband.⁷ A study prepared for the U.S. Department of Commerce reached the same conclusion.⁸

These studies uncover an important aspect of expanding broadband coverage – early adopters have a comparative advantage over communities which are slow to stimulate both the demand and supply of universal, affordable high-speed Internet. Rural communities that gain access to broadband at slower rates than non-rural communities will incur higher economic development opportunity costs.⁹

Studies Find Employment Increases with Broadband Expansion

A survey of the economic multiplier effects of broadband on jobs and income found that for every one percentage point increase in broadband penetration, the economic multiplier effects on employment is expected to increase between 0.2 and 0.3 percent per year.¹⁰

A study by Katz and Suter identified multiplier effects ranging from 1.4 to 3.6 percent which include direct, indirect, and induced employment effects.¹¹ This means that for every job created in the construction of the broadband network, employment would increase from a low range of 1.4 jobs to a high range of 3.6 jobs.¹²

An Economic Policy Institute study concluded that the \$8 billion investment AT&T plans to make in infrastructure as part of its plan to acquire T-Mobile could result in job growth of between 55,000 and 96,000 job-years (which refer to a job held for a single year).¹³ This estimate also includes direct, supplier and induced jobs which means it counts jobs created when newly hired workers spend their paychecks in the local economy which, in turn, creates jobs.

Study Finds Two-Year Time Lag Before Broadband Deployment Creates Long-Term Economic Growth

Another study also identified a relationship between access to residential broadband and employment growth.¹⁴ This study identified a time lag, however, which suggests that broadband's effect on employment may take some time. The study concluded that, "...broadband availability does not immediately translate into adoption, utilization and economic impact but that it takes approximately two years to fully achieve an effect."

Increased Broadband Access Yields Jobs and Investments for Rural Southwest Virginia

In Virginia, policymakers decided the benefit of expanding broadband access was worth the investment. In 2004, with money from the Tobacco Commission and grants from the U.S. Department of Commerce's Economic Development Administration, the Mid-Atlantic Broadband Cooperative (MBC) was created, a not-for-profit, member-owned entity.

Under its oversight, Internet service was expanded to include 800 miles of new coverage in 20 counties and four cities in rural Southeast Virginia.¹⁵ MBC is credited with creating over 2,200 jobs and attracting over \$300 million in new private sector investments.¹⁶

The MBC project was completed in 2006 and now boasts of offering over 60 "gigaparks" that allow telecommunication and technology companies the ability to leverage low-cost high-speed fiber optics. There are more than 55 members of the cooperative and one-time membership fees range from \$500 to \$3,000. These "parks" allow businesses access to state-of-the-art broadband at affordable rates. Virginia's investment in rural broadband economic development has already secured the business location of Microsoft in a deal for which many other states were also competing.¹⁷

Increased Broadband Deployment Could Recapture Lost Jobs in West Virginia

West Virginia's total nonfarm employment in June 2011 was 752,300, a decline of 8,000 jobs since the start of the Great Recession in December 2007.¹⁸ Given the employment multipliers estimated from the national study mentioned previously, West Virginia could gain between 1,504 and 2,256 jobs for every one-percent increase in broadband deployment. A mid-range multiplier would estimate 1,880 jobs created for every one-percent increase.¹⁹

Policy Solutions to Increase Broadband Deployment

While most would agree that providing access to universal, high-speed and affordable Internet for consumers and businesses would benefit West Virginia, there is still a lack of access to this important utility in the state. There are several options policymakers can consider when deciding how to expand broadband in West Virginia:

Create Tax Incentive Programs

The state could leverage the investments already committed from the federal government and the private sector through the creation of targeted tax incentive programs for capital investments in underserved areas. Smaller telecommunication companies would benefit because it would reduce their transport costs thus expanding their business footprint into these less profitable areas. Targeted tax incentive programs can lead to increased competition among broadband service providers and that competition can drive down subscription rates.

Form an Office of Outreach and Development

In 2008, West Virginia created the Broadband Deployment Council to help the state organize and plan for the expansion of Internet access. An Office of Outreach and Development could replace the Council, function as a fully funded permanent agency, and fall under the oversight of the Office of Technology.

Provide Grants to Internet Suppliers and Users

West Virginia could also address the supply side of the broadband problem by directly funding grant programs to benefit smaller telecommunication companies which can provide universal, high-speed, and affordable Internet

to underserved markets. In addition, a portion of the grant program monies could be used to help fund a digital literacy campaign to help increase subscription rates. A state-funded broadband grant program could also help pay a portion of a low-income family's subscription service on a sliding fee scale and be used to help buy computers for families in need of one.

Create a Cooperative Public Broadband Agency

Similar to the Mid-Atlantic Broadband Cooperative in Virginia, West Virginia could promote the creation of a public-private cooperative to increase both access and demand in unserved and underserved areas, but only in cases where the private sector refuses to offer service.

Treat Broadband as a Public Utility

West Virginia could also consider the regulation of broadband by the Public Service Commission and treat it as a public utility. Because the state's interest in broadband deployment is similar to its interest in providing universal and affordable access to other utilities such as telephone, cable, water, gas, electricity, and sewer facilities, the Public Service Commission could be given the authority to monitor both the quantity and quality of broadband access throughout West Virginia.

Conclusion

Broadband helps businesses compete in a global, technologically advanced marketplace. Rural communities must be able to offer access to universal and high-speed Internet at affordable prices if they want to attract new businesses and foster economic growth for existing businesses.

Rural communities need access to affordable and accessible universal high-speed Internet just as they do to traditional infrastructure such as roads, bridges, and telephone service. Public policy is available to help make this a reality in places still lacking access to this important service.

Endnotes

- 1 Approximately 70% of survey respondents said they prefer to research product features and compare prices online before shopping in a physical store. <http://www.zdnet.com/blog/itfacts/69-of-purchasers-research-online-67-make-purchases-in-physical-stores/12770>.
- 2 FCC, The Federal Communications Commission has historically defined broadband Internet service as providing a minimum of 200 kilobits per second (Kbs). This speed is much faster than dial-up, which has a maximum speed of 56 Kbs and can be as slow as 14 Kbs in rural areas. Unfortunately, the definition, although recently updated to a tiered definition, includes a wide array of technologies with varying reliability and quality, making economic impact analysis and discussion of broadband Internet service challenging. Today, the revised definition of broadband is 4 Kbps down and 1 Kbps up.
- 3 “Closing the Digital Divide,” Southern West Virginia Broadband Summit, <http://www.drwvfoundation.org/programs/view-program.php?id=18&type=3>.
- 4 US Internet Industry Association, “Deployment of Broadband to Rural America,” March 4, 2008, page 8, “The term digital divide refers to the gap between those people with effective access to digital and information technology, and those with access to it.(sic) Often discussed in the context of a digital divide include socioeconomic (rich/poor), racial (white/minority), or geographical (urban/rural).These digital divides, then, are identified as having two facets – the unequal access to digital technologies (deployment) and unequal ability or desire to make use of these digital technologies (adoption).”http://usiimedia.com/deployment_of_broadband_to_rural_america.pdf.
- 5 Peter Stenberg, Mitch Morehart, Stephen Vogel, John Cromartie, Vince Breneman, and Dennis Brown, “Broadband Internet’s Value for Rural America,” Economic Research Service, August 2009, US Department of Agriculture. See http://www.ers.usda.gov/Publications/ERR78/ERR78_ReportSummary.pdf.
- 6 The USDA conducted a quasi-experimental design study on the effects of broadband on the economies between counties which had access to broadband versus rural counties which didn’t between 2000 and 2006. The study examined changes in county employment and income in 228 rural counties called “treatment” counties and compared these counties to similarly situated rural counties with similar economies based on the percent of incomes derived from farming, manufacturing, retail trade, and government employment, in addition to similar population densities, and income. The “treatment” counties were those counties which had a high degree of broadband availability based on broadband density data from the FCC. The comparable rural counties were part of the “control group” and were designated a “twin” to one of the 228 rural counties selected as part of the study. The only major difference between these two groups is that the “control group” rural counties were outside of the availability of broadband as of 2000. The changes in outcome measures of income and employment between the “treatment” counties and the “control group” counties could therefore, be whether a county had access to broadband.
- 7 Peter Stenberg, Mitchell Morehart, Stephen Vogel, John Cromartie, Vince Breneman, and Dennis Brown, “Broadband Internet’s Value for Rural America,” United States Department of Agriculture, Economic Research Service, Economic Research Report Number ERR-78. August, 2009. See, <http://www.ers.usda.gov/publications/err78/>.
- 8 Sharon E. Gillett, William H. Lehr, Carlos A. Osorio and Marin A. Sirbu, “Measuring the Impact of Broadband Deployment.”Prepared for the US Department of Commerce, Economic Development Administration, Washington, D.C., 2006.
- 9 Ibid, page 13.
- 10 Crandall, Robert, William Lehr and Robert Litan, “The Effects of Broadband Deployment on Output and Employment: A Cross-sectional Analysis of U.S. Data,” *Issues in Economic Policy* (2007).
- 11 Direct job effects are the first order effects of creating a single job in the deployment of broadband such as the construction of network towers or installing wired fiber to some endpoint (ftx).Direct job effects also result from the initial investments made by companies acquiring direct access either to newly available spectrum, or capital investments in unserved and underserved areas. Indirect job effects are second order effects that results from the additional gains in employment and output from other firms that supply the companies making the initial investments. These would be the manufacturers of the products that are needed to deployment broadband such as Cisco, the manufacturer of routers, cable, and other telecommunication devices. Induced job effects are the third level effects that flow from increased investments in investments in broadband deployment. The wages and payments that are earned by workers are respent in the local community where the capital investments are made including payments for groceries, rent, gas, and other consumable items.
- 12 Katz and Suter (2009), page 8.
- 13 Ethan Pollack, Economic Policy Institute, Policy Memorandum, May 31, 2011.
- 14 Lehr, 2006.
- 15 Mid-Atlantic Broadband Cooperative 2010 Annual Report, http://mbc-va.com/media_center/downloads/MBC_2010_Annual_Report.pdf.
- 16 <http://finance.yahoo.com/news/MidAtlantic-Broadband-iw-47403554.html?x=0&v=1>.
- 17 <http://www2.wsls.com/news/2010/aug/27/microsoft-open-data-center-southside-ar-476650/>.
- 18 US Bureau of Labor Statistics, Current Employment Statistics, Seasonally-Adjusted. Downloaded from <http://data.bls.gov/cgi-bin/dsrv?ce>.
- 19 Author’s analysis based on national employment multipliers derived from Robert Crandall. See “The Effects of Broadband Deployment on Output and Employment: A Cross-Sectional Analysis of U.S. Data.”June 2007.