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Rural Broadband Development

Broadband internet is a type of high-speed data transmission service which can be provided through a number of technologies including wireless, satellite, cable modem, fiber optic, or direct subscriber line (DSL); all of these allow users to access the internet and internet related-services at higher speeds than would be possible with dial-up internet.[1] While the economies in cities and urban areas have benefited greatly from broadband access with the advent of the information age, rural America has struggled to keep up. Companies have often been hesitant to extend their networks into rural areas because they have determined that regions of low population density would not provide good returns on investment. This unwillingness on the part of the market has stymied the extension of broadband, but efforts on the part of some private enterprises, cooperatives, citizens' groups, and government agencies have helped to bridge the gap in the "digital divide." The Federal government has asserted that broadband access is an essential component of contemporary American life, aiding in areas such as the expansion of business, the provision of healthcare, and the enhancement of education and public safety.[2]

Broadband and Economic Growth

History has often shown that a higher degree of connectivity to the world is complementary to the goal of an improved economy. A 2010 California Public Policy Institute study on this subject found that while it is difficult to establish a definite causal link, there was a "positive relationship between broadband expansion and economic growth."[3] Another report from 2008 by the Rural Policy Research Institute determined that broadband is necessary in order to have substantive interaction with the American economy, and that it is an "essential prerequisite" [4]

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[1] Federal Communications Commission, "What is Broadband?" accessed February 15, 2011, http://www.broadband.gov/about_broadband.html.

[2] Federal Communications Commission, "Connecting America: The National Broadband Plan," accessed February 15, 2011, http://www.broadband.gov/plan/.

[3] Public Policy Institute of California, "Does Broadband Boost Local Economic Development?" January, 2010, accessed February 15, 2011, http://www.ppic.org/content/pubs/report/R_110JKR.pdf.

[4] Rural Policy Research Institute, "Rural Broadband," December 8, 2008, accessed February 15, 2011, http://www.rupri.org/Forms/RuralBroadbandFinal.pdf.

for business development and employment growth.[5] Additionally, a 2010 Brookings Institution study of international broadband development found, through examining the policies and infrastructure of other countries, that "high-speed broadband enhances economic development, social connections, civic engagement, and online government."[6]

U.S. Government Programs

The American Recovery and Reinvestment Act (ARRA) of 2009 allocated $7.2 billion dollars to states for the development of broadband.[7] This money was administered jointly through the Rural Utility Service (RUS) of the Department of Agriculture, and the National Telecommunications and Information Administration (NTIA) of the Department of Commerce. As of September 2010 RUS had dispersed more than $2.5 billion dollars in grants and loans to 45 states for the development of broadband.[8] NTIA, meanwhile, had invested about $4 billion dollars in projects around the nation.[9] These funds are estimated to create or upgrade at least 120,000 miles of broadband network, and improve access at about 24,000 "community anchor institutions" such as schools, hospitals, libraries, police stations, and fire departments. Additionally, the RUS operates a Farm Bill program which awards loans to entities such as corporations and cooperatives in order to facilitate the provision of broadband service to rural areas.[10] Furthermore, President Obama has stated the need to do more to expand broadband access. His latest plan of February 10, 2011, calls for the expansion of high-speed, wireless access to 98% of Americans.[11]

State Initiatives

Most states have instituted some form of broadband development program, especially in light of the provision of ARRA funds for that purpose. Those states where broadband access is lacking as a function of the area's rural nature are generally found in the Deep South, the South- and Mid-west, and along the Appalachian spine.[12] The following presents a look at some of these states.

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[5] Rural Policy Research Institute, "Rural Broadband."
[6] Darrell M. West, "An International Look at High-Speed Broadband," February, 2010, accessed February 15, 2011, http://www.brookings.edu/~/media/Files/rc/reports/2010/0223_broadband_west/0223_broadband_west.pdf.
[7] National Telecommunications and Information Administration, "Broadband USA", accessed February 15, 2011, http://www.broadbandusa.gov/.
[8] USDA Rural Development, "Recovery Act Broadband Initiatives Program," accessed February 15, 2011, http://www.rurdev.usda.gov/utp_bip.html.
[9] National Telecommunications and Information Administration, "Broadband Technology Opportunity Program Quarterly Program Status Report," November, 2010, accessed February 15, 2011, http://www.ntia.doc.gov/recovery/BTOP/BTOP_QuarterlyReport_11172010.pdf.
[10] USDA Rural Development, "Farm Bill Broadband Program," accessed February 15, 2011, http://www.rurdev.usda.gov/utp_farmbill.html.
[11] The White House, Office of the Press Secretary, "President Obama Details Plan to Win the Future through Expanded Wireless Access," press release, February 10, 2011, accessed February 15, 2011, http://www.whitehouse.gov/the-press-office/2011/02/10/president-obama-details-plan-win-future-through-expanded-wireless-access.
[12] Federal Communications Commission, "Broadband Maps," accessed February 15, 2011, http://www.broadband.gov/maps/availability.htm.

Kentucky

The Commonwealth of Kentucky recognized the integral role that technology plays in facilitating economic development and growth; it was under this paradigm that the Kentucky Legislator passed the Kentucky Innovation Act (KIA) of 2000. This act called for a $53 million dollar investment in the fields of research, development, and technology.[13] The most pertinent aspect of the KIA to rural broadband development was its establishment of the Kentucky Rural Innovation Fund, which was funded at $ 1 million dollars. The Kentucky Rural Innovation fund provides vouchers to rural Kentucky-based small businesses in order to facilitate research, development, and entrepreneurial innovations; thus, rural broadband development has been spurred through the use of these funds.[14] This act has made Kentucky a leader in providing broadband access to rural areas. Since its inception in 2002, the state's *Connectkentucky* program has expanded access to an additional 1.3 million citizens, increased broadband availability from 60% to 95%, and increased subscription to the service by 100%. According to its latest report, issued in 2008, this growth has created $1.06 billion in annual wages from jobs created or saved within the state, over 19,000 high-tech jobs, $9.4 million in savings for healthcare providers and a reduction of over $90 million dollars in transportation costs.[15]

Michigan

Michigan received $34 million dollars in ARRA funds through the NTIA for broadband development.[16] One successful application of federal assistance, ARRA and otherwise, occurred in the Great Lakes Bay and Thumb areas of the state where broadband access had left something to be desired. One company, Air Advantage, began in 2002 to provide broadband access to the area. Utilizing loans from the RUS earlier, and then receiving money from ARRA, it is currently delivering service to almost 5,000 residents and dozens of "community anchor institutions" in an area of 3500 square miles. The project is estimated to have created or saved approximately 142 jobs.[17] Elsewhere, the expansion of broadband access at rural libraries enabled a better connection between the unemployed and available job opportunities listed on-line.[18]

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[13] Kentucky Legislature, HB 527, April 15, 2000, accessed February 20, 2011, http://www.lrc.ky.gov/recarch/00rs/hb572/bill.doc.

[14] Kentucky Council on Postsecondary Education, "Rural Innovation Program," accessed February 20, 2011, http://cpe.ky.gov/policies/economic/RuralInn.htm.

[15] Connectkentucky, "Setting the Pace," 2008, accessed February 15, 2011, http://connectkentucky.org/_documents/ConnectKentuckyProgressReport2008.pdf.

[16] State of Michigan, "Granholm Announces $34 Million in Recovery Act Grants to Expand Broadband Access in Michigan," accessed February 15, 2011, http://www.michigan.gov/broadband/0,1607,7-250--230101--,00.html.

[17] USDA Rural Development, "Air Advantage in Michigan," accessed February 15, 2011, http://www.rurdev.usda.gov/STELPRD4007370.html.

[18] National Telecommunications and Information Administration, **"**Report from Michigan: Building Our Information Economy," accessed February 15 2011, http://www2.ntia.doc.gov/node/754.

Mississippi

As one of the most economically disadvantaged states in the Union, Mississippi has been keen on developing broadband capabilities in order to enhance growth.[19] A report by the John C. Stennis Center in Mississippi on broadband in rural Mississippi found that the state lags behind the rest of the country in access to the service, stating that although over 90% of public schools have high-speed internet access, almost 50% of the students in those schools live in homes with no internet access. Despite this, the study found that access to broadband would be made much more available in the near future, and that the "digital divide" be one more along racial, generational socio-economic lines than geographic ones. [20] To this point, a 2010 study by the Center for Social Inclusion of broadband in the Mississippi Delta found that people of color constituted the majority of the population in zip codes with no access to high speed internet. Furthermore, the 2nd Congressional District has the largest population of people of color and the lowest levels of access to broadband.[21]

Virginia

In 2004 Mark R. Warner the Governor of Virginia had allocated $12 million for broadband technology.

> The initiative is a partnership of Virginia's Tobacco Commission, the U.S. Department of Commerce's Economic Development Administration, the Mid-Atlantic Broadband Cooperative, and others from the private sector, government, and the non-profit community.[22]

The project, known as the Regional Backbone and Roots of Progress Initiative, was funded with $6 million from the Virginia Tobacco Indemnification and Community Revitalization Commission and $6 million from the U.S. Department of Commerce; it was finalized in 2006.[23] This program has met it goals and produced concrete results for the development of rural Virginia. The completion of this project has led to the installation of 740 miles of new 144 fiber optic cable in the Southside of Virginia; this has led to the connecting of 5 cities, 20 counties, and 56 industrial parks, and has provided high-speed internet access to over 700,00 people and 19,000

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[19] State of Mississippi, "Broadband for Mississippi," accessed February 15, 2011, http://msbb.broadmap.com/broadband-matters.html.

[20] John C. Stennis Institute of Government, "Bringing Broadband to Rural Mississippi Appalachia," accessed February 15, 2011, http://www.sig.msstate.edu/files/broadband_final.pdf.

[21] Center for Social Inclusion, "Broadband in the Mississippi Delta: A 21st Century Racial Justice Issue," February, 2010, accessed February 15, 2011, http://www.centerforsocialinclusion.org/publications/wp-content/plugins/publications/uploads/Broadband_in_the_Delta_-_FINAL1.pdf.

[22] Official Site of the Governor of Virginia, "Governor Warner Announces Major Technology Infrastructure Project for Southern Virginia," accessed February 15, 2011, http://www.governor.virginia.gov/Press_Policy/Releases/2004/Jun04/0618.htm.

[23] Official Site of the Governor of Virginia, "Governor Warner Announces Major Technology Infrastructure Project for Southern Virginia."

businesses throughout the state.[24] In 2009, the network began to connect Emporia to Wallops Island on the Eastern Shore. This network is funded by the grants from the U.S. Department of Commerce's Economic Development Administration and an additional $48 million comes from the Virginia's Tobacco Indemnification and Community Revitalization Commission. The network seeks to expand as more communities want to be included and funding is available. Since 2001, the Virginia Tobacco Commission has also funded more than $53 million dollars towards projects to create more than 900 miles of backbone and infrastructure in the LENOWISCO, Mount Rogers, and Cumberland Plateau Planning Districts and part of the New River Planning District.[25]

The Virginia Department of Housing and Community Development (DHCD) has played an integral role since 2001 in educating rural community leaders about the benefits of broadband development and devising community telecommunication plans.[26] This has resulted in the 24 planning efforts covering over 36 localities. In 2009, the DHCD funded $740, 990 in Virginia Community Development Block Grant funds which resulted in the creation of 40 new jobs and increased access to healthcare.[27] From 2008 to 2009, the Virginia General Assembly expanded the Virginia Resource Authority to include funding for broadband services; this has been achieved through the creation of Broadband Revolving Loan Funds, which seeks to expand broadband services to underserved areas in rural Virginia.[28]

Maryland

In 2010, Maryland was awarded $115 million in federal stimulus money to develop a high-speed broadband network; this is the second largest broadband grant awarded in the country, next to West Virginia. Maryland hopes that this network will connect the Eastern Shore to the western parts of the state. Maryland plans on utilizing this money to augment internet speeds for government buildings, schools, hospitals, and emergency communications throughout the state. More specifically, Maryland hopes to connect 458 schools, 44 libraries, 262 police and emergency centers, 15 community colleges, 6 universities and 221 government and community centers in a statewide network intended to be accessible and secure in emergency situations. This funding will enable for more than 1,200 miles of new fiber-optic cable to be stationed throughout the state; this will represent a 50 percent increase over the existing networking capabilities.[29]

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[24] Virginia Ally Information Exchange, "2009 Rural Economic Development Strategic Plan," accessed February 15, 2011, http://www.virginiaallies.org/assets/files/publications/RuralEDPlan.pdf.
[25] Virginia Ally Information Exchange, "2009 Rural Economic Development Strategic Plan."
[26] Virginia's Department of Housing and Community Development, "Virginia Rural Broadband: Planning Initiative Program Design," accessed February 15, 2011, http://www.dhcd.virginia.gov/communitydevelopmentrevitalization/pdfs/ruralbroadband.pdf.
[27] Virginia Ally Information Exchange, "2009 Rural Economic Development Strategic Plan."
[28] Virginia Ally Information Exchange, "2009 Rural Economic Development Strategic Plan."
[29] Office of the Lt. Governor Anthony G. Brown, "Lt. Governor Brown Joins Senator Mikulski to Announce Important Grants for Expanding Maryland's Broadband Network," press release, September 20, 2011, accessed February 15, 2011, http://www.governor.maryland.gov/ltgovernor/pressreleases/100920.asp

West Virginia

A majority of West Virginia's rural communities do not have access to broadband. West Virginia ranks 45th in the nation for available internet service providers and 48th in terms of the percentage of their population that has access to broadband. Due to West Virginia's underdevelopment in broadband, it was, rewarded $126.3 million in stimulus (ARRA) money for infrastructure development. Further sources of funding include, $5 million from the state in the Broadband Deployment Council and $300 million from Frontier Communications.[30] Paul Miller, policy analyst from the West Virginia Center on Budget and Policy, published a policy brief that seeks to close what he deemed the 'broadband gap'. This brief noted how access to the internet plays an integral rule in economic development; therefore this gap greatly hinders rural communities' development. West Virginia seeks to expand the Broadband Development Council, create an Office of Broadband Outreach and Development, develop tax incentive programs, allocate grants to telecommunication companies, and offer public funding for technology and regulation of broadband. Furthermore, the state hopes to utilize this funding to aid low and moderate income families purchase computers and pay for internet access.[31]

Conclusion

The development of broadband appears to be integral to the advancement of America's rural communities. The federal government has provided funding for the development of broadband through the American Recovery and Reinvestment Act. States have been successful in both creating their own state-funded programs and utilizing federal stimulus money to augment rural broadband access. They have provided broadband access through the installment of broadband access in rural areas and providing grants and incentives to companies and communities that seek to employ broadband**.**

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[30] Paul Miller, "Public Investments Will Reduce Broadband Gap," policy brief, West Virginia Center on Budget and Policy, January 24, 2011, accessed February 15, 2011, http://www.wvpolicy.org/downloads/BroadbandBrief012111.pdf

[31] Paul Miller, "Public Investments Will Reduce Broadband Gap."