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Rural Broadband: Miles to Go Before We Sleep

As the United States recovers from the great recession, it is even more critical to focus on broadband deployment to ensure that Americans have the necessary tools to compete worldwide**.** This is the first of a series of articles that addresses broadband deployment, with recommendations for its improvement. This article focuses on rural broadband deployment.

Broadband allows users to reach the Internet at higher speeds than they could with traditional modems. Broadband uses data processing capabilities that compress voice, video, and data information into bits that become words, pictures, charts, graphs, or other images on computer, wireless phones, or screens. High-speed Internet access allows information downloads at significantly higher speeds than traditional modems. It also allows online access without tying up telephone lines, videoconferencing, and access to entertainment resources. Broadband access comes in several flavors, including Digital Subscriber Line ("DSL"), cable modem access, fixed and mobile wireless, satellite Internet, and Fiber to the Home ("FTTH").

Wi-Fi, or wireless fidelity, allows Internet access by short-range signals, and it is available at thousands of hotspots around the country. WiMAX, or Worldwide Interoperability for Microwave Access, is a standards-based wireless technology that provides high-throughput broadband connections over long distances. WiMAX is similar to Wi-Fi, but it permits usage over much greater distances.

Federal legislation clearly favors rural broadband deployment. Section 706 of the 1996 Telecommunications Act requires the FCC to "encourage the deployment on a reasonable

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and timely basis of advanced telecommunications capability to all Americans." The Act also mandates that consumers in "rural, insular, and high cost areas" should have access to services and rates that are "reasonably comparable" to those in urban areas. On February 17, 2009, Congress passed the Recovery Act, which charged the FCC with developing a national broadband plan that seeks to ensure that all Americans have broadband access. In response to this Congressional mandate, the FCC recently delivered to Congress a national broadband plan for robust broadband capability for Americans with benchmarks for meeting that goal.

Broadband deployment in rural areas is critical for economic development, growth, jobs, education, tele-medicine and other data-centric services, and for the United States to remain competitive with other countries. But rural broadband deployment in the United States considerably lags broadband use in urban areas. In light of this need, Congress passed the 2008 Farm Bill, which recognized the critical need for broadband in rural areas. That law requires the FCC Chairman, in coordination with the Secretary of the U.S. Department of Agriculture (USDA), to submit "a report describing a comprehensive rural broadband strategy" to Congress. On May 22, 2009, the FCC submitted its Bringing Broadband to Rural America Report on a Rural Broadband Strategy to Congress ("FCC Report").

According to data in the FCC Report, in comparison to non-rural areas, broadband services are less extensively adopted in rural areas due in part to less extensive deployment of broadband capability in rural areas. Specifically, 57-60 percent of urban and suburban residents have broadband at home, as compared to only 38 percent of rural residents according to the FCC Report. In 2007, 54 percent of urban households had broadband in the home, while only 39 percent of rural households did, according to the NTIA. This shows that broadband deployment in urban and suburban areas is almost twice that of rural areas, and that broadband deployment in urban and suburban areas is growing considerably faster than in rural areas.

So why is there reduced broadband capability in rural areas? There are several reasons. First, there is more broadband technology available in urban than in rural areas. The FCC Report found that although mobile broadband networks cover 95.6 percent of the total U.S., population, they cover only 82.8 percent of the U.S. rural population compared with 99.0 percent of the non-rural population. This stems from the faster payback on network deployment in more densely populated areas, and greater usage of the network and resulting revenues in more populated areas. Lack of available capital for rural broadband deployment is another factor. Distance, demand, socio-economic factors, local topography, unfavorable weather and difficult environmental conditions may further complicate rural broadband deployment.

To meet these challenges, resources have been devoted to rural broadband deployment. In the American Recovery and Reinvestment Act of 2009, also known as the stimulus package, Congress appropriated $7.2 billion for broadband grants, loans, and loan guarantees. The FCC has also made several recommendations to spur rural broadband deployment, including assessing rural broadband needs, coordination between federal agencies, state and local authorities, and community groups, streamlining existing federal programs, and possible redeployment of spectrum for more efficient use. The FCC's rules that would allow unused airwaves ("white spaces") abutting broadcast television spectrum to be used for wireless broadband should also

promote wireless broadband access across rural America. The FCC has also attempted to expand broadband availability through universal service policies, but it declined to adopt the Joint Board's recommendation to make broadband a supported service under the High Cost Program.

Given that broadband needs and solutions vary by region, the FCC's assessment of broadband demand and availability is critical. Without accurately assessing rural broadband demand, it is impossible to efficiently allocate resources to match existing broadband needs. Moreover, assessing broadband availability through coordination of broadband mapping efforts is critical to identify and track broadband service availability and infrastructure deployment. An aggressive schedule to assess broadband demand and availability is critical.

Once broadband demand and availability are accurately determined, resources can be more efficiently deployed to meet rural broadband needs. The $7.2 billion stimulus funds allocated for broadband grants, together with available Universal Service funds, should, at least initially, help to satisfy funding requirements.

Competitive bidding may also help to meet broadband needs. Municipal broadband projects and industry responses to broadband requests for proposals may also help to address broadband demand, notwithstanding the ongoing debate over the use of taxpayer-funded municipal broadband projects to satisfy broadband demand.

Building the broadband information highway is fundamentally similar to meeting infrastructure demands that Americans have successfully tackled for decades. Once broadband demand and availability are identified, an appropriate solution can be tailored to fit the situation with available resources.

We welcome your thoughts.

If you have questions about this issue, or if we may be of assistance to you, please feel free to contact us.