Testimony of
The Honorable Lawrence E. Strickling
Assistant Secretary for Communications and Information
National Telecommunications and Information Administration
United States Department of Commerce

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"Digital Divide: Expanding Broadband Access to Small Businesses"

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I. Introduction

Chairman Graves, Ranking Member Velazquez, and Members of the Committee, thank you for your invitation to testify regarding the National Telecommunications and Information Administration (NTIA)'s efforts to expand and strengthen broadband access to small businesses. I am very pleased to highlight NTIA's progress in helping to achieve our vision of a nationwide, 21st century communications infrastructure and our efforts to expand broadband access and adoption in the United States.

II. Expanding Broadband Access and Adoption Has the Potential to Increase Small Business Creation and Expansion in the United States

A key element of building the innovation economy of the future – one that supports new and better jobs, and enhances America's global competitiveness – is expanding the availability and adoption of broadband access in America. In the near-term, investments in broadband infrastructure help create jobs and business growth by supporting the installation and upgrade of fiber-optic networks, wireless towers, and other high-tech components. Public computer centers provide much-needed training and broadband for those without access to this empowering technology in their homes. Sustainable broadband adoption efforts help to educate vulnerable populations about the benefits of broadband and enable them to become proficient in computer-related skills. In the longer-term, expanding broadband access and adoption facilitates economic growth and innovation, especially for small businesses; enhances health care delivery; improves public safety; and lays a foundation for long-term economic development in communities throughout the United States.

Small businesses benefit from the Internet economy in a number of important ways. Broadband reduces geographic barriers and the costs of doing business. The Internet offers the opportunity for anyone with a connection and an innovative idea to create and grow a business. Indeed, online retail sales in the United States totaled an estimated $169 billion in 2010 alone.[1] Just a

decade ago, the companies that are now household names – Google, Facebook, Twitter, and many more – were small businesses. These innovators and countless others have used their creativity, determination, and the power of broadband to grow the Internet economy.

The positive impact of broadband technologies on economic growth and small business creation is clear. A November 2010 report by the U.S. Small Business Administration (SBA) found that the Internet plays an integral role in helping small businesses achieve their strategic goals, improve competitiveness and efficiency, and interact with customers and vendors.[2] Respondents to SBA's survey generally agreed that high-speed Internet access is "as essential to my business as other services such as water, sewer, or electricity."[3] A more recent report from Connected Nation also shows that broadband connectivity is an increasingly essential component for business growth in the United States.[4] It states that over four million U.S. firms have web sites, including more than two million businesses with fewer than five employees, and that broadband-connected businesses report annual median sales revenues approximately $300,000 higher than revenues for businesses without broadband.[5]

The research firm Strategic Networks Group (SNG) collected data from more than 15,000 U.S. businesses between 2010 and 2012 and found a significant positive impact of broadband on small business. Overall, small businesses report significant efficiencies, revenue increases, and cost savings directly attributable to the Internet, and nearly a third of new jobs at small businesses derive from the Internet.[6]

The smaller the business, the bigger the impact that broadband can have. For example, broadband is responsible for approximately 20 percent of new jobs across all businesses, but it is responsible for 30 percent of new jobs in businesses of fewer than 20 employees.[7] Data also demonstrate that higher speed and quality broadband technologies increase the benefits to businesses in the form of growth, productivity, reducing costs, and enabling innovation.[8] A SNG study of 600 North Carolina businesses demonstrated a direct correlation between revenue growth and the use of broadband technologies (what SNG terms "e-solutions").[9] Those firms that had most heavily incorporated "e-solutions" showed significantly higher revenues. Further, smaller firms with less than 50 employees were shown to be creating more jobs due to Internet technologies compared to larger firms.[10]

For state and local economic development officials, the results are equally important, as broadband expansion results in small business creation, job growth, economic output, and increased tax revenues. A SNG case study of Virginia estimates a return in GDP for the state that is 26 times greater than the investment in broadband technologies, and a return in tax receipts that is 2.8 times the investment.[11] According to SNG, almost 60 percent of small businesses report that broadband availability is an essential factor in making a decision on their location. For local communities, investments in broadband technologies have the potential for significant returns in the form of economic activity and quality of life.

These data reveal that broadband has become vital for small businesses in the United States to grow and compete in the twenty-first century. NTIA is taking a number of important steps to increase the availability and adoption of broadband in the United States to ensure that our workers, entrepreneurs, and small business owners have every opportunity to succeed.

III. NTIA Invested Almost $4 Billion in Projects to Expand Broadband Access and Adoption in the United States

To improve broadband capabilities for small businesses and, indeed, the entire economy, NTIA is engaged in a number of important initiatives. The first is through $4 billion of investments in approximately 230 Broadband Technology Opportunities Program (BTOP) projects to expand broadband availability and adoption in the United States. Today, about a year and a half into the projects, recipients are making significant progress in achieving their anticipated outcomes and delivering meaningful benefits to their communities. Our grantees have:

- deployed or upgraded more than 57,000 miles of broadband infrastructure;
- connected more than 8,000 community anchor institutions to high-speed broadband service;
- installed more than 33,000 workstations in public computer centers;
- provided more than 7 million hours of technology training to approximately 2 million users;
- generated approximately 330,000 new broadband subscribers; and
- funded more than 4,000 jobs in the second quarter of Fiscal Year 2012.

In all, NTIA broadband grant recipients have spent approximately $2 billion in federal funds and, as of March 31, 2012, nearly $700 million in non-federal matching funds, towards building the nation's 21st century infrastructure. NTIA expects the pace of construction to remain strong over the next several quarters and we expect communities to begin to fully realize the impact of these investments.

IV. Small Businesses Are Benefitting from NTIA's Broadband Investments

Small businesses are benefitting from NTIA's broadband investments not only through improved broadband services and increased capacity-building and training opportunities from the grant projects, but also as direct grant recipients. Approximately 20 percent of BTOP grant recipients, representing nearly $800 million in grant dollars, are small businesses.[12] Based upon our regular interaction with recipients, we know that many more direct awardees are utilizing small businesses as partners or vendors.[13] In soliciting applications, NTIA encouraged small business participation in projects as both an applicant and as a subrecipient/vendor. NTIA conducted approximately a dozen workshops throughout the Nation to encourage applications, including several workshops targeting small and disadvantaged businesses. In reviewing applications, NTIA gave additional consideration to projects that included small and disadvantaged business participants.

Below are several examples of small businesses that received NTIA broadband grants:

- In **Missouri**, Sho-Me Technologies, LLC is deploying approximately 500 miles of new fiber to complete a 1,380 mile network across 30 counties in south and central Missouri.

- In **Oregon**, Bend Cable is constructing a 132-mile ring of new fiber to connect underserved areas of central Oregon, including at least 25 anchor institutions and four business parks.
- In **Ohio**, Com Net is installing approximately 700 miles of high-capacity fiber-optic lines to expand an existing network in 28 western counties of the state. The project will expand and enhance broadband for a region with more than 150,000 businesses and 2,900 anchor institutions, and upgrade capabilities for almost 300 public safety entities.
- In **Alabama**, JKM Consulting, a small woman-owned business, is deploying more than 80 miles of new fiber-optics to serve anchor institutions and public safety entities in several east-central Alabama counties.
- In **Montana**, Ronan Telephone Company is constructing nearly 300 miles of fiber to connect several communities to high-speed broadband, including the Blackfeet Reservation community of East Glacier Park, and plans to partner with Health Information Exchange of Montana to utilize telemedicine to improve healthcare delivery for residents.
- In **Puerto Rico**, Critical Hub Networks, Inc. is providing broadband connectivity for wholesale and last mile Internet service providers, and service to underserved areas, by establishing a broadband "bridge" to the United States mainland and deploying a high capacity middle mile network on the island.
- Pine Telephone Company—a family-owned company that has built and operated communications networks in rural **Oklahoma** for nearly 100 years—is using wireless technology to deliver affordable broadband service to portions of rural, remote, and economically disadvantaged areas of southeast Oklahoma, including the Choctaw Nation.
- Small and woman-owned business Axiom Technologies received funding for a sustainable broadband adoption project to provide broadband education, training, access, equipment, and support to community-serving institutions and economically vulnerable populations in Washington County, **Maine**. The project also will help local small businesses by providing training for healthcare professionals and by equipping local farmers and fishers with wireless broadband equipment and rugged laptops. It has also developed a software program to assist farmers and fishermen streamline their data collection and reporting using digital technologies.
- In **Washington** State, Toledo Telephone Company, in partnership with the Cowlitz Indian Tribe, has helped more than 300 community members learn basic computer functionality, Internet, and email skills through intensive classes. Upon successful completion of the course, participants receive a laptop and two years of free broadband service.

V. BTOP "Middle Mile" Investments Prime the Pump for Additional Economic Activity

The approximately $4 billion we are investing in BTOP projects will not address all of America's broadband needs, but it is helping to "prime the pump" for additional investment by public and private entities. NTIA's broadband infrastructure projects invested primarily in "middle mile" broadband infrastructure – the fundamental link between the national Internet backbone and the local broadband connections to homes and small businesses – as well as to

provide community anchor institutions with new or improved Internet connections at significantly higher speeds.

Adequate middle mile infrastructure is a critical enabler of "last mile" broadband service to homes and local businesses. Investments in middle mile facilities have the potential to catalyze millions of dollars in additional private sector investment as local broadband providers utilize the new infrastructure to expand or enhance their own Internet service for households and businesses throughout America. In particular, BTOP's open access and interconnection requirements are encouraging other last-mile and incumbent broadband providers to tap into grant-supported middle mile networks to expand broadband services and speeds for American consumers and businesses. Recipients have already entered into nearly 400 interconnection agreements with third-party providers to leverage or interconnect with their networks and we expect that number to increase significantly in the coming months. For example:

- In **Massachusetts**, OpenCape is constructing a regional collocation center for large and small businesses to lease space for the placement of company servers. OpenCape also plans to deliver direct retail services to a number of small businesses. They have received interest from architectural and engineering firms, graphics and video firms, medical firms, and other businesses with significant demand for high-speed broadband. OpenCape also is working with Wireless Internet Service Providers (WISPs) to expand their broadband capabilities to end users, households, and businesses. In a second project, the Massachusetts Broadband Institute (MBI) plans to deliver high-capacity broadband to several industrial parks and dozens of businesses in the western areas of the state. These businesses include small machine, manufacturing, and printing shops that rely on the Internet for product development, sales, and marketing. By also dramatically reducing the cost of backhaul transport in western areas of the state, MBI will make it possible for numerous third-party broadband providers to expand and enhance their services for small businesses and households. The recipient has already signed agreements with several last-mile providers such as, for example, Crocker Communications, a small and woman-owned regional telecommunications provider based in Greenfield, MA that itself provides communications and data services to other small businesses.
- In **Ohio**, several WISPs plan to take advantage of the open access middle mile services offered by Horizon Telcom to expand their small business and household broadband offerings. Horizon has already signed several agreements with smaller last-mile providers such as Country Connections, Hocking Internet, Intelliwave, JB Nets, New ERA Broadband, and Southern Ohio Communications Services. Horizon also plans to provide backhaul to over 200 wireless towers in the region that will enable third-party broadband providers to offer 4G LTE services to small and large enterprises and households. Additionally, Horizon plans to directly serve 34 industrial parks that will enable new and existing businesses to expand.

VI. Public Computer Center and Sustainable Broadband Adoption Projects Help Job Seekers and Small Businesses

In addition to its investments in fiber-optic and wireless broadband infrastructure, NTIA is also helping small businesses by expanding public computer centers and providing training in broadband technology that can help individuals find jobs, create new businesses, and impact their local economies. For example:

- The **Mission Economic Development Agency**, working with the National Association for Latino Community Asset Builders, created Latino Tech-Net, a network of 12 non-profit organizations providing customized bilingual, small business training to Latino entrepreneurs in 11 cities throughout the country. This training includes basic digital literacy and Microsoft office software, as well as Quickbooks, Excel for Budgeting, E-Commerce, and Online Marketing. Classroom instruction supports the overall project goals of increasing broadband and technology usage by low and moderate income Latino families and helping entrepreneurs establish and expand businesses. To date, Latino Tech-Net has delivered more than 130,000 hours of training to more than 11,000 participants.
- The **C.K. Blandin Foundation** works with the University of Minnesota Extension (UME) to provide technical assistance and training to small businesses in rural areas of the state. UME conducts training and outreach events and provides technical assistance to small businesses with fewer than 10 employees in the retail, food and tourism industries. UME also produces instructional materials on how a strong Internet presence can help businesses grow. To date, UME has held more than 170 training events involving 1,300 businesses; almost 90 technical assistance activities reaching 100 businesses; and 22 outreach events reaching about 1,000 individuals.
- The **Vermont Council on Rural Development** works with the Vermont Small Business Development Center to provide workshops, webinars and one-on-one advising to help rural small businesses take advantage of online resources to improve their operations. Training topics include business development strategies, basic business website design, and social media marketing. To date, the Vermont Small Business Development Center has delivered training and consulting to nearly 1,000 users.
- The **City of Chicago's** Smart Communities program created the Business Resource Network (BRN), an initiative designed to help local businesses become sustainable, profitable entities by providing them free access to broadband, business software, and technology workshops. The BRN helps local companies acquire the broadband services, computer applications, and skills needed to succeed in today's digital economy. Small and medium-sized businesses participating in the BRN first conduct a technology needs assessment, which helps them identify new computer resources and skills. Once they identify their needs, these businesses develop an action plan and timeline for acquiring computer equipment and business training. Businesses then participate in workshops and one-on-one consultations on a variety of topics, including software training, business planning, marketing, and website development. Through December 2011, more than 180 businesses completed a technology assessment, 105 developed action plans, and 220 participated in workshops. For example, one local restaurant owner who participated in the BRN was able to increase his customer base by developing a marketing plan to promote the restaurant's newly-installed wireless Internet network.

VII. State Broadband Initiative Projects Help Communities Use Broadband for Economic Development

NTIA's State Broadband Initiative (SBI) projects collect detailed data on broadband access and adoption in America, and support states and territories in their effort to use broadband technology to attract employers and better compete in the digital economy. In February 2011, NTIA released the National Broadband Map – America's first public, searchable nationwide map of broadband availability – and we continue to update it twice a year. Each update is powered by an extensive, publicly available dataset – more than 20 million records collected from nearly 1,800 U.S. broadband providers – that shows where broadband is available, the technology used to provide the service, the maximum advertised speeds, and the names of the service providers. It is the most extensive dataset of its kind. The Map includes data from the FCC's "Consumer Broadband Test" that show that small businesses have a median download speed of 4 megabits per second (Mbps) and a median upload speed of 1.2 Mbps,[14] speeds that many businesses may find do not adequately meet their needs.

The National Broadband Map is a powerful tool for researchers, economic developers, state government leaders, and business owners seeking to better harness the power of broadband to improve their communities. In addition, our SBI grants are supporting states and local governments in incorporating broadband into their economic development strategies to attract businesses and empower new businesses to grow and expand. For example:

- In **Utah**, a medical record and health information technology firm considered moving its call center out of the state because of poor broadband connectivity, which resulted in work interruptions and lost productivity. The Utah Broadband Project, a SBI grantee, utilized broadband mapping data to identify other broadband providers in the region that could provide enhanced connectivity and redundancy, and, as a result, the firm obtained the broadband capabilities it needed to stay in the state.
- In **Kansas**, the SBI grantee utilized its broadband availability data to identify communities with the requisite broadband capabilities necessary for Convergys, a customer relationship management firm, to establish call centers in multiple locations and increase job opportunities in the state.
- In **South Dakota**, Eleutian Technology, a provider of English-as-a-Second-Language online courses, utilized broadband availability data made possible by the SBI program to identify communities with the necessary broadband capabilities to conduct real-time video conferencing. As a result, the firm has hired over 100 teachers in several small South Dakota communities such as Spearfish, Rapid City, and Winner.

VIII. NTIA and the FCC's Joint Efforts to Make Spectrum Available for Commercial Broadband Use Will Benefit Small Businesses

The second principal way NTIA is helping expand broadband for the benefit of small businesses, the public, and the economy generally is by expanding wireless broadband capabilities. We have been working in close collaboration with the Federal Communications Commission (FCC) to make available an additional 500 megahertz of spectrum over the next decade for commercial wireless broadband use.[15] NTIA identified 2,200 MHz of spectrum for evaluation, and has

already recommended 115 MHz of spectrum that could be made available for wireless broadband use within five years.[16] In March 2012, NTIA announced that the 1755-1850 megahertz band – another 95 megahertz of prime spectrum – could also be repurposed for wireless broadband use.[17] We are now hard at work on the next steps toward making this spectrum available.

Because of the challenges in relocating federal users – including the scarcity of spectrum, the complexity of federal operations, and the time and cost of relocating federal users – NTIA has also proposed a new path forward for spectrum repurposing that relies on a combination of relocating federal users and sharing spectrum between federal agencies and commercial users. This path offers many potential benefits, such as allowing earlier access to the spectrum by commercial broadband providers, making additional spectrum available due to efficiencies, and advancing innovation in the wireless marketplace. In May 2012, NTIA initiated discussions between industry and the relevant federal agencies under the auspices of the Commerce Spectrum Management Advisory Committee (CSMAC), with the goal of finding ways to work together through sharing or other means to reduce the time and expense of repurposing the 1755-1850 MHz band, while maintaining essential Federal capabilities and maximizing commercial utilization. These discussions over the coming weeks and months will play a critical role in helping find new ways to free additional spectrum for commercial broadband use and at the same time ensuring that federal agencies can continue their critical functions for the Nation.

Increasing commercial use of wireless spectrum for broadband will transform multiple areas of the United States economy, including small businesses creation, productivity, employment, consumer welfare, health care, government services, and public safety. Researchers estimate that increased investment in new wireless broadband networks will boost national income,[18] significantly expand GDP growth,[19] and create hundreds of thousands of new jobs.[20] A study for CTIA (the wireless industry trade association) estimated that the productivity gains from wireless broadband adoption result in nearly $100 billion in annual cost savings in the United States.[21] Small businesses will be well poised to reap significant benefits from additional spectrum for wireless broadband.

Already, we are seeing tremendous innovation and economic activity due to increased wireless broadband use. For example, the surge in the development and use of mobile applications ("apps") is creating jobs, supporting small businesses, and generating remarkable economic output. A recent TechNet study estimated that the "App Economy" (that is, the goods and services resulting from the growth in mobile apps) is responsible for approximately 466,000 jobs in the United States, up from zero in 2007.[22] Mobile apps already account for more than $10 billion in annual revenues, and could exceed $50 billion in annual revenues in the next several years.[23] According to Apple, users of more than 300 million of the company's mobile devices[24] have downloaded more than 30 billion apps from the App Store.[25] One study estimated that small businesses developed more than 88 percent of the 500 most popular mobile apps.[26] A survey by AT&T found that one-third of small businesses in the United States use mobile apps to save time, increase productivity, and reduce costs. About half of the survey's respondents said they could not survive without mobile apps.[27]

IX. Conclusion

NTIA is committed to expanding broadband access and adoption in the United States so that we may boost America's competitiveness, build the innovation economy of the future, and support new and better jobs for Americans, particularly for small businesses which are the engine of the U.S. economy. Our efforts to ensure that its broadband grant projects achieve their intended benefits for American communities, and our work to fulfill the President's goal of making available 500 megahertz of spectrum for wireless broadband by 2020, are important steps towards achieving our shared goal of an economy built to last.

I appreciate the opportunity to testify before you today and welcome your questions. Thank you.

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[5] *Id.*

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[8] *Id.*

[9] Strategic Networks Group, *SNG Study Shows Broadband and e-Solutions Linked to Business Growth* (Sep. 2011), *available at:* http://www.sngroup.com/sng-study-shows-broadband-and-e-solutions-linked-to-business-growth/ [11].

[10] *Id.*

[11] SNG Economic Impact Estimate, Professional & Technical Services Sector, *available at*: http://www.sngroup.com/wp-content/uploads/2012/05/SNG-Economic-Impact-Estimate-professional-and-technical-services-summary.pdf [12].

[12] As reported in the Central Contractor Registration (CCR), https://www.bpn.gov/ccr/default.aspx [13], using the small business size standard established by the Small Business Administration (SBA) according to the firm's North American Industry Classification System (NAICS) code. Notably, the majority of BTOP awards went to local, county, and state government entities, and another significant percentage went to higher education institutions and non-profit organizations, which do not qualify as small businesses.

[13] NTIA does not collect data from its grantees regarding the size of the businesses they utilize as vendors or subrecipients. As a result, we do not have specific data on the extent of small businesses participating as vendors or subrecipients.

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[24] *See* http://www.apple.com/pr/library/2012/03/05Apples-App-Store-Downloads-Top-25-Billion.html [24].

[25] *See* http://news.cnet.com/8301-13579_3-57450369-37/apple-30b-apps-downloaded-400m-app-store-accounts-set-up/ [25]

[26] Morgan Reed, *The Surprise Behind the Mobile App Numbers,* Huffington Post (July 12, 2011), *available at:* http://www.huffingtonpost.com/morgan-reed/the-surprise-behind-the-m_b_895397.html [26].

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