

BROADBAND ADOPTION: THE NEXT MILE

HEARING

BEFORE THE

SUBCOMMITTEE ON COMMUNICATIONS,
TECHNOLOGY, AND THE INTERNET

OF THE

COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

OCTOBER 29, 2013

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ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

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BROADBAND ADOPTION: THE NEXT MILE

TUESDAY, OCTOBER 29, 2013

U.S. SENATE,
SUBCOMMITTEE ON COMMUNICATIONS, TECHNOLOGY, AND
THE INTERNET,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice, at 10:30 a.m., in room SR-253, Russell Senate Office Building, Hon. Mark Pryor, Chairman of the Subcommittee, presiding.

OPENING STATEMENT OF HON. MARK PRYOR, U.S. SENATOR FROM ARKANSAS

Senator PRYOR. I'll call our Subcommittee to order. I want to thank everyone for coming to the Subcommittee on Communication, Technology, and the Internet.

Our hearing today is entitled "Broadband Adoption: The Next Mile." Again, I want to thank all of our witnesses for coming. And some traveled to be here, and we appreciate that.

I want to especially thank our former colleague, Senator John Sununu. It's great to see you again this morning. You know, back when he was in the Senate, he used to always remind me that he was the youngest Senator in the Senate. You know? So, that's what we had to deal with all the time. So, maybe we can ask him some real hard questions today. What do you think about that?

[Laughter.]

Senator PRYOR. No, really, thank you all for being here. And this is a story where you see the public and private sector who have done a tremendous job in trying to make sure that Americans have access to broadband. There has been a great deal of progress there. Lots of investments. Our providers, nonprofits, private entities have all been working very, very hard to achieve that goal of access. And the Federal Government has done some things with Universal Service Fund, BTOP, and other programs. And certainly, as we have the hearing today, we don't want to diminish the progress that we've made; we also don't want to forget about the millions of Americans who have access but still maybe need faster access. But, today our focus—today our focus is on broadband adoption, which is a little different than just access.

Nearly 30 percent of all Americans who have access to broadband do not subscribe to those services. That is, millions of Americans who—Americans who risk being on the wrong side of the digital divide. So, today the Subcommittee will look at the various barriers

to broadband adoption and the strategies for overcoming these barriers.

And just as the public and private sectors have worked so hard and invested billions of dollars toward broadband deployment, they're also putting significant time and effort and resources to encouraging Americans to take advantage of this very important resource.

So, I want to commend our witnesses today, but also the private sector and others for doing all that they've done to get us where we are today.

But, I also hope that today we'll hear some of the lessons learned on the ground, to understand how to encourage more people to sign up to this, what is now becoming, and has become, just critically important and necessary infrastructure for the 21st century. We, in Congress, hear every day about success stories from individuals and communities where broadband has made significant impacts. And, of course, our providers have a lot of firsthand stories about improvements and benefits to homes, schools, businesses, et cetera. However, for many Americans, those successes remain hidden.

So, I think there are probably three reasons why some Americans don't sign up, but we want to hear from the witnesses about their thoughts. One would be—a lot of Americans just don't understand the relevancy and why they should do this. A lot of Americans feel like they're not capable or they don't have the skills to do it. And then there are some Americans who say they just can't afford it.

So, today we'll hear from a provider and various nonprofit organizations that have been working to identify who is and who is not online, why Americans are or are not connecting, and developing and implementing strategies to encourage Americans to adopt broadband Internet. I want to hear from our panelists about the most effective ways that we can do this, policies that maybe we need to support, the role of the Federal Government in improving broadband adoption rates.

And so, again, I want to thank you. And we'd like to hear from Senator Wicker and then from our witnesses.

**STATEMENT OF HON. ROGER F. WICKER,
U.S. SENATOR FROM MISSISSIPPI**

Senator WICKER. Thank you, Mr. Chairman, for holding this important hearing on the state of broadband adoption in America.

Over the past year, this subcommittee, under the Chair's leadership, has done a great job of providing a forum for education and discussion on the state of communications policy in our nation, covering a broad array of topics. However, the common denominator in all of our hearings has been the emphasis on the importance of broadband for all Americans.

As I've mentioned before, we, as policymakers, must ensure that any digital divide that exists between Americans—whether that divide is urban or rural, young or old, high income or low income—must be bridged. Our goal should be that all consumers be able to take full advantage of our 21st century broadband economy.

The deployment of broadband via cable, DSL, fiber, wireless, and satellite has been a success. According to NTIA at the end of 2012,

nearly all American consumers had access to some form of high-speed broadband. However, there are still challenges to be examined, particularly in regard to consumer adoption of broadband services, which brings us to our hearing today.

According to the FCC, the broadband adoption rate in the United States stands between 62 and 68 percent, meaning approximately one-third of Americans who have access to broadband choose not to subscribe to the service. Of particular interest is the agency's finding that the broadband adoption in non-urban areas is significantly lower than in urban areas.

So, while tens of millions of Americans now have access to broadband, they choose to remain offline. The primary reasons for non-adoption include the lack of digital literacy, questions regarding the relevancy of broadband in their lives, and the cost of equipment and service.

Mr. Chairman, you and I both know the importance of broadband adoption. Our fellow citizens in Mississippi and Arkansas have perhaps not taken to the Internet quite like our colleagues in Minnesota, for example, or New Hampshire. I fear this lack of adoption may hold our states back as we move deeper into the 21st century, but I also see this as a great opportunity to bring more of our great people to the online world to share their interests and talents and improve their lives.

Assembled here today are witnesses with a broad and varied knowledge of broadband adoption in America. We have representatives of Internet service providers, like Comcast, which is celebrating its 50th anniversary this year and, I'm proud to say, was founded in Tupelo, Mississippi, where I reside. We also have a private philanthropic organization in Minnesota's Blandin Foundation, a nonprofit from California, and the Pew Research Center, which has provided valuable reports and data for us to consider.

I also would like to welcome John Sununu back to this committee, and note, Mr. Chairman, that, according to his nameplate, one can leave the Senate and this committee and still remain "Honorable." And that is good to know.

[Laughter.]

Senator WICKER. Senator Sununu served here on this committee with distinction for a number of years.

So, I look forward to hearing all of our witnesses.

Thank you, again, Mr. Chairman, for holding this important hearing.

Maximizing broadband adoption needs to be a top priority of this subcommittee. This hearing will provide a good opportunity for our members to learn about not only the successes of broadband adoption, but, more importantly, what can still be achieved.

Thank you, sir.

Senator PRYOR. Thank you.

And what we'll do is, we'll make all of the members, here, their opening statements, part of the record. And we also, for all of our witnesses today, your full statements will be made part of their record, so feel free to summarize those. And we'd ask you to keep all your statements to 5 minutes, and we look forward to the round of questions.

Let me just introduce the entire panel, then I'll just call on you, one by one.

First, of course, we have Senator John Sununu. He's the Honorary Co-Chair of Broadband for America. Second, we have Mr. Aaron Smith, Senior Researcher, Pew Research Center, Pew Internet & American Life Project. Next, we have Ms. Joselyn, Director of Public Policy and Engagement, Blandin Foundation. And next, we'll have Ms. McPeak, President and Chief Executive Officer, California Emerging Technology Fund. And last, and certainly not least, we have Mr. David Cohen. He's the Executive Vice President of Comcast Corporation.

So, without any further ado, let me recognize Senator Sununu for your opening statement. Thank you for being here.

**STATEMENT OF HON. JOHN E. SUNUNU, CO-CHAIR,
BROADBAND FOR AMERICA AND FORMER U.S. SENATOR
FROM NEW HAMPSHIRE**

Senator SUNUNU. Thank you very much, Mr. Chairman. It really is a pleasure to be here. Happy to be on this side of the witness stand, which is, obviously, new for me. I don't think I've been in this room in five years. And, well, it's not a complaint, my only observation is, these chairs are much lower than I expected them to be.

[Laughter.]

Senator SUNUNU. But, happy to be here, nonetheless. And nice to see former colleagues here; and, in particular, Senator Ayotte, who's doing such a great job for the people of New Hampshire.

I'm, as you indicated, Mr. Chairman, the honorary co-chair, along with former Congressman Harold Ford, of Broadband for America. It's an organization—a coalition of 300 or so members—whose mission is focused on encouraging broadband investment, deployment, access, and adoption. So, happy to be here to talk about what we see happening in those areas and to talk a little bit about adoption initiatives, as well. But, we've got a great panel here of many who are working in different regions of the country, in different programs, and who can share their experience, as well.

It's hard not to focus on broadband investment when you're talking about this topic. It's different than adoption, but it has got to start somewhere, and oftentimes it starts with money. And over the last several years, I think there's a very positive story to talk about in America on broadband investment—\$250 billion invested by the broadband industry over the past 3 years. I think the Progressive Policy Institute highlights just the six largest broadband providers investing \$50 billion in the last year.

And, let's face it, the broadband infrastructure, it's not the be all and end all, but it is the foundation for a lot of innovation and economic growth that's going on out there. In particular, companies like Google or Apple, but even more prominently and more recently, the applications industry. The apps industry now employs 750,000 people. It didn't exist five years ago. Investment then leads to competition. Very important. The OECD ranks the U.S. third in broadband competition in the world. We—as was mentioned, I think, by Senator Wicker, 94 percent of people in the country have access to one or more wired broadband providers, 82 percent have

access to four or more wireless broadband providers. So, the competition is there, and access, in many parts of the country—most parts of the country—is there.

And it's interesting to look at the growth in access. Over the last 10 years, we've gone from 15 percent of the country having access to broadband to 98 percent of the country having access to broadband. That's great progress. Ninety-six percent having access to networks that are capable of 10 megabits per second or more, 85 percent of the country having access to technology that can give 100 megabits per second or more. And speeds, similarly, have increased by about 20 percent over the past year.

So, investment, we've got better and growing competition. We have access. What about adoption? Because adoption isn't the same as access.

Pew—and we're fortunate to have Aaron here from Pew—they've done a lot of study and research in this area. Right now, we've got about 70 percent of the country with wired broadband access—or, wired broadband service—that is, they've adopted it; 80 percent with wireless broadband service. So, we've made progress, but we can do better.

And, in particular, we've got a gap. You know, among whites that adoption rate is 75 percent; among African Americans, it's 65 percent, roughly; and among Hispanics, it's 55 percent. Now, the gap is closed—over the last 4 years, the gap has closed by roughly half for African Americans, but that doesn't mean we can't or shouldn't do better in those underserved or areas of the country that haven't taken up adoption like we would want them to.

There are lots of reasons. Both of you—the Ranking Member and the Chairman mentioned relevancy, that the computers, the equipment is expensive, and, of course, the cost of connections. It's all about digital literacy. It's about education. And it's about having people understand the value to them.

I would close by emphasizing that, in this case, there's no single solution that's right for the entire country. There's a corporate involvement and responsibility, there's a government role, there are partnerships. It could be Big Brothers, Big Sisters, or the Boys and Girls Clubs, or the United Way undertaking local programs. It could be companies like Comcast in their Internet Essentials Program. AT&T, 250 million in their Aspire Program. Bright House is a \$2 million program that's reached out to 1,500 schools.

Finally, in terms of the role of government, because that's what you're interested and focused on, the light touch regulatory approach has been very important in providing an atmosphere that encourages and incentivizes investment in innovation. The NTIA has done a great job with their toolkit for digital literacy that focuses on all of these issues—pricing and the cost of equipment and in educating consumers.

And then, finally, from a regulatory perspective, I think you need to continue to allow providers to experiment and innovate in the way they package and price the product, especially in an age when there are more and more different ways to get access to content over the top and other ways.

So, I appreciate the work that you've done here. I apologize that I've gone over time. I said to Senator Wicker, "That's my only fear,

is that, in an effort to summarize my remarks, I exceed the 5-minute time limit.” I have failed. But, hopefully, the minute is something we’ll get back.

Thank you for your interest in the topic, and I look forward to your questions.

[The prepared statement of Senator Sununu follows:]

PREPARED STATEMENT OF HON. JOHN E. SUNUNU, CO-CHAIR, BROADBAND FOR AMERICA AND FORMER U.S. SENATOR FROM NEW HAMPSHIRE

Chairman Pryor, Ranking Member Wicker and distinguished Members of the Subcommittee, good morning. Thank you for inviting me to join you today and thank you for bringing attention to this important national priority.

My name is John Sununu, a former member of this chamber, proudly representing New Hampshire from 2003 to 2009. Along with my friend and former Congressman Harold Ford, I am co-chair of Broadband for America. I have a long interest and extensive professional experience in the high-tech and broadband-related industries. I currently serve as director of Time Warner Cable and Boston Scientific Corporation. Before my career in government, I served as Chief Financial Officer of Teletrol Systems. I also received my master’s degree in electrical engineering from the Massachusetts Institute of Technology.

Broadband for America promotes well-informed public policy choices to create the right incentives for the private sector to build advanced networks and offer innovative services throughout the nation, and to encourage all Americans to become digitally literate and adopt broadband Internet. Our members include national and state-based community organizations, education and medical professionals, religious and minority groups, and stakeholders in the broadband Internet industry. Since our founding, Broadband for America has been dedicated to improving broadband adoption throughout the country; this is something our more than 300 members care passionately about.

Today, I would like to focus on two topics:

- The U.S. broadband success story, marked by vibrant competition and remarkable levels of sustained investment, and;
- How we can all work together to help further shrink the broadband digital divide and increase broadband adoption.

The Ongoing Broadband Success Story

Broadband for America believes broadband is for everyone. As the National Broadband Plan states, “broadband is a foundation for economic growth, job creation, global competitiveness, and a better way of life.” Today’s broadband networks enable an array of services—voice, video, e-commerce, and more—over high-capacity wired and wireless connections. This platform is revolutionizing our lives: improving educational outcomes, delivering better health care, and creating a new world of jobs and commercial opportunities.

A Broadband Nation. Today, 98 percent of American consumers have broadband access with 96 percent of households capable of accessing speeds 10 Mbps or higher. Only a decade ago, just 15 percent of households had broadband access of any kind. Over that time, billions have been poured into our economy and broadband networks to build this robust infrastructure across technologies. In just the last 3 years, broadband providers overall have invested more than \$250 billion. In 2011 alone, 18 million miles of optical fiber were installed in the U.S. This laudable level of investment in difficult economic times has pushed broadband deeper into communities at higher and higher speeds, driving competition and benefiting consumers.

Broadband providers compete vigorously today on price, availability, and speed, providing consumers with constantly innovating services, devices, and digital options. Thanks to a light-touch regulatory framework based on a long-standing bipartisan approach to incent next-generation investment, the U.S. remains a global leader in broadband opportunity and competition. In fact, the Organization of Economic Co-operation and Development (OECD) ranks the U.S. third for competition among carriers of different technologies. The Federal Communications Commission (FCC) reported that in 2012, 82 percent of the U.S. population had access to four or more wireless broadband services, up from 68 percent in 2010. Internet service providers (ISPs) deliver broadband via phone lines, cable, fiber, satellite, and fixed and mobile wireless connections—all capable of delivering speeds unthinkable a decade ago. These speeds continue to escalate: the average U.S. broadband speed has increased

by 22 percent over the past year, and the fastest wired Internet speeds available are 19 times faster than speeds available six years ago.

Broadband providers have delivered these faster and faster speeds while keeping prices static: the U.S. has the second lowest entry-level pricing for broadband among OECD countries. And entire new industries, like the mobile apps sector, have emerged from the innovation engine that is the Internet economy. Not even in existence five years ago, the mobile app industry now employs 750,000 Americans while generating \$18 billion in revenue last year. Investment in the broadband space has led to new technologies at a rate faster than ever before. Better broadband technologies encourage innovation and adoption of broadband by consumers. Higher adoption rates lead broadband providers to further invest in their networks. This cycle of innovation and investment has propelled broadband services forward faster than any other technology.

These broadband deployment efforts in the U.S. are remarkable—with broadband providers leading in U.S. investment. Last year alone, the Progressive Policy Institute found the top six broadband providers invested over \$50 billion. But we need to develop solutions to deploy broadband in those rural areas where there is not a market based solution. The Administration's policies and the FCC's Connect America Fund are designed to help ensure that all Americans have broadband access.

Adopting Broadband. From that remarkable technological foundation it should come as no surprise that Americans have quickly embraced the benefits of broadband connectivity. American consumers' adoption of high-speed broadband technology is simply unprecedented. A report from the Pew Internet and American Life Project found that 70 percent of homes have a broadband connection. If you include mobile broadband devices, 80 percent of U.S. households subscribe to broadband services.

Perspective is helpful here. Thirteen years ago—when just half of all adults were “online” in some fashion—only 3 million households subscribed to broadband at home. Today, the Administration reports that 88 million households have chosen to take advantage of the opportunities presented by the digital economy. Americans have embraced broadband-enabled smartphones at an even faster pace. While the U.S. has just five percent of the world's population, we have over 50 percent of global 4G mobile broadband subscribers. In fact, the U.S. adoption rates for wired and mobile broadband eclipse—in some cases by decades—the comparable adoption timeframes for personal computers, cable television, or the landline telephone.

These positive trend lines extend to communities previously on the wrong side of the digital divide. Rural communities tend to adopt technologies later than urban and suburban areas. Through increased wired and wireless technology, rural areas will develop economically through GPS powered equipment, apps that help farmers more efficiently track their work and online retail to allow rural businesses to reach customers around the world. More of the rural population is able to access broadband every day through technologies like satellite and wireless. The Pew study on adoption found that 70 percent of the U.S. rural population currently has a home or mobile broadband connection.

Since 2009, the percentage of African Americans that subscribe to broadband access has increased from 46 percent to 64 percent, while the broadband gap between whites and African-Americans declined from 19 points to 10 points in that same period, according to Pew. And 49 percent of African Americans own a smartphone, compared with 45 percent of whites.

The Latino community has also taken great strides forward in broadband adoption, and programs by groups like the League of United Latin American Citizens (LULAC) have helped in this effort. LULAC sponsors technology centers in 25 states across the country, helping Latinos with computer training, job searches, and other digital skills that are necessary in today's high-tech world. Broadband for America believes in programs like this and early on provided financial support for LULAC's digital literacy campaign.

Partnering to Bridge the Digital Divide

In the past few years, we have learned that building and deploying broadband—however complex and expensive—is the relatively simple part of this equation. As the pool of non-adopters shrinks, the challenge this Nation faces is to ensure that all Americans benefit from the broadband economy.

The Adoption Challenge. Broadband for America applauds this Subcommittee for its efforts and leadership to support a sustained focus on broadband adoption. As the Nation's ISPs continue to deploy broadband, policymakers should concentrate on solutions aimed at encouraging all Americans to get online. To succeed, we will need all stakeholders to contribute.

Despite the successes described above, too many Americans still face a digital divide—a divide with serious ramifications. The statistics are well documented. Fifteen percent of Americans choose not to use the Internet at all. The adoption challenge extends beyond apartments and homes. The digital divide is just as often a local issue, although not often framed as one.

While the national adoption story is a promising, albeit incomplete one, these national figures can obscure regional and community-specific challenges. In some areas, broadband adoption dips to 50 percent. These pockets of non-adoption reinforce the need for locally targeted efforts that address the unique challenges of individual communities. Broadband can serve as a great equalizer, opening opportunities to all people regardless of economic background, geography, or age. But first, high-speed Internet must not only be available, but also relatable.

People choose not to go online at home for complex and intertwined reasons, making one-size-fits-all public policy solutions challenging. Pew has done important work in this area. In September, they recently released some valuable findings as to why people use the Internet but do not adopt a broadband connection at home:

- 26 percent find the Internet is not relevant or usable;
- 20 percent think computers are too expensive or do not have a computer;
- 9 percent think an Internet connection is too expensive, or it is cheaper elsewhere.

This shows that relevance and digital literacy are central to solving the broadband adoption problem and Internet connection cost is lower on the order of importance.

I note that the FCC will be considering digital literacy and adoption issues at its open meeting on November 14. The Commission will hear updates on several innovative programs focused on improving digital literacy.

The Path Forward. A multifaceted problem requires a multifaceted solution, and one that need not—and should not—be carrier or government-centric. This is first and foremost a challenge of inclusion and outreach. For broadband adoption efforts to succeed, we need persistent and sustained efforts. We need community engagement, through developing partnerships with groups like the United Way and Big Brothers/Big Sisters. We need to empower partners in our neighborhoods and direct relevant messages to underserved communities. Working together, we can solve the question of how to connect the dots in each non-adopting home and business in a smart and focused manner.

Targeted government action can play a role in improving broadband adoption by specifically engaging community leaders, providing the necessary tools, and sharing best practices to get non-adopters online. The government's core role is one of facilitator. For example, earlier this year, NTIA released its Broadband Adoption Toolkit. NTIA recognized that non-adoption is often driven by multiple, interwoven factors—perception, access, cost, skills, and relevance—that together can form a complex barrier to broadband connectivity. The Toolkit emphasized “concrete, field-tested” methods and practices in areas like curriculum development and training delivery to improve digital literacy and engage those not yet online. This effort and many other promising outreach models recognize that different communities will need different adoption strategies as well as a sustained dialogue with community leaders.

Other aspects of adoption need attention by both government leaders and private companies. To many people the Internet does not play a large enough role in their life to deem purchasing a broadband connection necessary. By incorporating broadband into areas like health care, education, transportation and the smart grid, more people will find reasons to adopt broadband connections. In many cases, adopting broadband is beneficial for consumers. Telemedicine saves money by preventing costly hospital stays. For instance, the Department of Veterans Affairs' home telehealth program resulted in a 25 percent reduction in the average number of days hospitalized and a 19 percent reduction in hospitalizations. Smart grid systems save consumers money every month. Initiatives by the government and private companies will make these programs and technologies relevant to the lives of more Americans.

Government can also help maintain—and facilitate—innovative and affordable broadband packages geared to non-adopters. Common sense policies, like permanently extending the Internet Tax Moratorium, will help ensure broadband prices stay reasonable. This historic legislation, first introduced by former Senator Dan Inouye and myself, banned states and localities from placing discriminatory taxes on broadband access. Over the next decade, this tax moratorium was extended twice with bipartisan support. As a result, Internet adoption has increased and more en-

trepreneurs have accessed new markets increasing their consumer reach across America.

The government should also ensure that regulations do not hinder or crowd out investment in the broadband and Internet industries. The largest private investors in the U.S. are broadband providers; their work building out our networks is preparing the U.S. for the economy of tomorrow. Deviating from the light touch regulatory model that has been in place since the Clinton administration would likely reduce investment that helps extend faster broadband services to more people across the country.

Changes in broadband providers' pricing models could also bring more people online through a more equitable system. The current unlimited-use pricing model has light and moderate users paying the same as heavy users, essentially subsidizing heavy broadband use. A system that charges customers on the amount of data used would begin to reverse this trend. This pricing model would also help close the adoption gap by offering additional choices for consumers that more closely match their needs and ability to pay.

Further, the FCC should continue to recognize the pro-consumer benefits of new pricing and packaging models. Experimentation with speeds, data allowances, and price points is fundamental to providers' ability to deliver broadband that is right sized for all consumers and businesses.

Relatedly, the Nation must make a commitment to digital literacy. For the country's sustained global competitiveness, digital literacy should be a part of every American's rite of passage. As a father of three, I have seen firsthand the power of broadband and technology on kids. As broadband connectivity transforms our educational system, schoolchildren increasingly need broadband access both in the classroom and at home.

Broadband providers are addressing adoption issues head on. Broadband for America members, such as Comcast and CenturyLink, offer Internet packages for \$9.95 per month, along with a low priced Internet-ready computer and free digital literacy classes. Only 22 months after inception, Comcast's Internet Essentials program is being used by over 900,000 low-income Americans. Verizon and Time Warner Cable both have programs that encourage students to get involved in Science, Technology, Engineering, and Math (STEM)-related activities in their communities. Verizon's Innovative App Challenge offers prizes to teams of students who develop mobile and tablet based apps for use in middle and high school STEM classes. Time Warner Cable has invested \$100 million into its Connect a Million Minds campaign, the program helps students get involved in STEM activities through innovative online resources, affordable after-school activities, and grants to nonprofits that support STEM education. AT&T has contributed and committed \$350 million as part of its Aspire program since 2008. Aspire specifically helps kids stay on track to graduate high school and be ready for the hi-tech future which awaits them—and includes digital literacy as it reaches kids in our underserved neighborhoods. Bright House Networks is providing \$2 million of in-kind support to 1,667 schools through its Cable in the Classroom program. These wrap-around solutions will continue to help address the core challenges of non-adoption.

We appreciate the opportunity to share our views on this important issue. Broadband for American looks forward to working with Congress to help promote increased broadband adoption and utilization. I look forward to answering any questions you may have.

Senator PRYOR. Thank you.
Mr. Smith.

**STATEMENT OF AARON SMITH, SENIOR RESEARCHER,
PEW RESEARCH CENTER'S INTERNET PROJECT**

Mr. SMITH. Thank you for having me here today. My name's Aaron Smith. I'm a Senior Researcher at the Pew Research Center's Internet Project. We're a nonprofit research organization, here in D.C., funded by the Pew Charitable Trusts, and my project has been conducting national consumer surveys of Internet use and broadband adoption since early 2000. And my organization does not promote specific policy positions, but I hope that my comments can provide a better understanding of the current state of broadband adoption, which groups have low levels of broadband use, and also

the major factors that are preventing people from adopting broadband.

So, when we first conducted our survey of broadband adoption in 2000, just 3 percent of Americans had some sort of broadband connection at home. And, as John noted, that figure has risen to 70 percent of Americans, as of our most recent survey, in May of this year. But, despite this long-term growth trend, the pace of broadband adoption has slowed substantially in recent years. After increasing by an average of nearly 7 percentage points per year from 2000 through 2009, the national broadband level—adoption level increased by a total of just 7 percentage points from 2009 through 2013.

Although 70 percent of the American public has a high-speed Internet connection at home, that figure is lower among certain groups than among others. Broadband adoption levels are especially low among three demographic groups in particular. The first group is older adults. Just 43 percent of Americans age 65 and older have a broadband connection at home. The second group is people with low levels of educational attainment. Among Americans who have not received a high school diploma, just 37 percent are broadband adopters. And the third group is people with low household incomes. Fifty-four percent of Americans with a household income of less than \$30,000 are broadband adopters.

Now, these are not the only group—these are not the only groups for whom broadband adoption levels are low. As John also mentioned, rural residents are less likely to have broadband than urban and suburban residents, and African Americans and Latinos are less likely to have broadband than whites. Also, broadband adoption is low among people with physical disabilities or with chronic health conditions. But, overall, age and socioeconomic status are the demographic factors that are most strongly correlated with whether someone has broadband or not.

So, since 70 percent of the public does have some sort of broadband connection at home, that means that 30 percent of the adult population does not have high-speed home access. That 30 percent of Americans includes two distinct groups, each of which faces distinct challenges and barriers to adoption.

The first of those groups are the 15 percent of the adult population that do not use the Internet at all. This group is significantly older than the population as a whole, with a median age of 64 years old. These non-users tend to have little connection to the online world and often face significant challenges, in terms of their comfort level with technology. Just 17 of these non-users feel confident that they could go online without assistance if they chose to do so in the future.

And when we asked these non-users to tell us the main reasons why they don't go online, they tend to point to their perceptions of the relevance of online content and their challenges using technology, in general. One-third of these non-users say things like they just aren't interested in going online, don't need to go online, or think the Internet is a waste of time. And a similar number mention usability-related issues, such as finding it difficult or frustrating to go online, saying they don't know how to go online or are

too old to learn, or that they're physically unable to use a computer.

The second group of nonbroadband adopters, which also makes up 15 percent of the population, includes people who do use the Internet from one location or another but do not have high-speed access within their home. In contrast to the non-Internet user population, this group is much younger. Around half of them are under the age of 45. They also tend to have relatively low incomes, relatively low levels of educational attainment, and include a relatively large number of non-whites.

Also in contrast to the non-Internet users I discussed a moment ago, issues related to price and affordability are this group's primary barrier to adoption. When we asked them why they don't have Internet service at home, 42 percent of Internet users who lack home broadband cite financial issues, such as not having a computer, not being able to afford Internet service, or having a cheaper option for access outside of the home.

In summary, three out of every ten Americans currently do not have broadband service at home, and many of these individuals face substantial hurdles to adoption. Some, especially working-age adults at the lower end of the income spectrum, see the value of broadband but simply lack the necessary financial resources. But, others face significant challenges using technology or do not see the benefits of broadband access in the first place. For this group of non-adopters, a lower price may be necessary, but not sufficient. They will likely require a great deal of coaching and encouragement before they are ready to join the broadband world.

Thank you again for your time and for inviting me to speak on the subject. I look forward to any questions you have.

[The prepared statement of Mr. Smith follows:]

PREPARED STATEMENT OF AARON SMITH, SENIOR RESEARCHER,
PEW RESEARCH CENTER'S INTERNET PROJECT

Mr. Chairman and Members of the Committee, thank you for the opportunity to testify today.

My name is Aaron Smith, and I am a senior researcher with the Pew Research Center's Internet Project. The Pew Research Center is a non-profit research organization funded primarily by the Pew Charitable Trusts, and its Internet project has been conducting national surveys of Internet use and broadband adoption since early 2000.

The Pew Research Center and its experts do not promote specific policy positions, but I do hope that my comments can provide a better understanding of the current state of broadband adoption; which groups have low levels of broadband use; and the major factors preventing people from adopting.

National trends in broadband adoption

When we conducted our first survey of broadband adoption in early 2000, just 3 percent of American adults had some sort of broadband connection at home. That figure has risen to 70 percent of Americans as of our most recent survey in May of this year.

But despite this long-term growth trend, the pace of broadband adoption has slowed substantially in recent years. After increasing by an average of nearly seven percentage points per year from 2000 through 2009, the national broadband adoption level increased by a total of just seven percentage points from 2009 through 2013.

Demographic differences in broadband adoption

Although 70 percent of the American public has a high-speed Internet connection at home, that figure is lower among some groups than among others. Broadband adoption levels are especially low among three demographic groups in particular.

The first group is *older adults*. Today just 43 percent of Americans age 65 and older have a broadband connection at home, which is roughly half the adoption rate for those between the ages of 18 and 49.

The second group is *people with low levels of educational attainment*. Among Americans who have not received a high school diploma, just 37 percent are broadband adopters. By comparison, nine in ten college graduates have broadband at home.

The third group is *people with low household incomes*. 54 percent of Americans with an annual household income of less than \$30,000 are broadband adopters.

These are not the only groups for whom broadband adoption levels are low. Rural residents are less likely to have broadband than urban or suburban residents; African Americans and Latinos are less likely to have broadband than whites; and broadband adoption is also low among people with physical disabilities or severe chronic health conditions. But overall, age and socio-economic status are the demographic factors most strongly correlated with whether someone has broadband or not.

Non-broadband users and their reasons for non-adoption

Since 70 percent of the public *does* have some sort of broadband connection at home, that means that 30 percent of the adult population *does not* have high speed home access. That 30 percent of Americans includes two distinct groups, each of which faces different challenges and barriers to adoption.

The first group is the 15 percent of the adult population that *does not use the Internet at all*. This group is significantly older than the population as whole, with a median age of 64 years old.

These non-users tend to have little connection to the online world, and they often face significant challenges in terms of their comfort level with technology. Just 17 percent of these non-users feel confident that they could go online on their own if they chose to do so in the future, while 63 percent say that they would need someone to assist them.

When we ask these non-users to tell us the main reason why they don't go online, they tend to point to their perceptions of the relevance online content and their challenges using technology in general. One third of these non-users say things like: they just aren't interested in going online; don't need to go online; or think the Internet is a waste of time. And a similar number mention usability-related issues such as: finding it too difficult or frustrating to go online; saying that they don't know how to go online or are too old to learn; or are physically unable to use a computer.

The second group of non-broadband adopters, which also makes up 15 percent of the population, includes people who *do use the Internet from one location or another, but do not have high speed access within their home*.

In contrast to the non-internet-user population, this group is much younger—around half of them are under the age of 45. They also tend to have relatively low incomes, relatively low levels of educational attainment, and include a relatively large number of non-whites.

Also in contrast to non-internet-users, issues related to price and affordability are this group's primary barrier to adoption. When asked why they do not have Internet service at home, 42 percent of Internet users who lack home broadband cite financial issues such as: not having a computer; not being able to afford Internet service; or having a cheaper option for access outside the home.

Summary

In summary, three out of every ten Americans currently do not have broadband service at home, and many of these individuals face substantial hurdles to adoption. Some—especially working-age adults at the lower end of the income spectrum—see the value of broadband but simply lack the necessary financial resources. But others face significant challenges using technology, or do not see the benefits of broadband access in the first place. For this group of non-adopters, a lower price may be necessary but not sufficient—they will likely require a great deal of coaching and encouragement before they are ready to join the broadband world.

Thank you again for inviting me to speak on this subject.

Senator PRYOR. Thank you.
Ms. Joselyn.

**STATEMENT OF BERNADINE JOSELYN, DIRECTOR, PUBLIC
POLICY AND ENGAGEMENT, BLANDIN FOUNDATION**

Ms. JOSELYN. Good morning, Chairman Pryor, Senator Wicker, members of the Committee.

I bring you, today, the voices and experiences of rural community leaders. These are the people who create vibrancy across the American landscape.

They are hopeful people, and they can make a little support go a long way. For example, Janice Gale, Director of the Leach Lake Band of Ojibwe's Temporary Employment Program, saw, every day, how temporary tribal members without work struggled with technology when applying for jobs. She worked with us and partners to create sustainable systems for creating culturally relevant online job search and work skills and to expand computer and Internet access on her reservation. Tribal members who upgrade their digital literacy skills now qualify for higher pay. Janice smiles with pride when she tells of the workers in her program who have been inspired to pursue a GED.

Multiply Janice Gale times hundreds and the stories continue to roll in from communities all across rural Minnesota, where broadband adoption is not just a policy imperative, it's a community imperative.

Blandin Foundation works with rural communities in Minnesota. We have made broadband adoption a priority, because we believe that broadband is the indispensable infrastructure of the 21st century, and rural communities need broadband access, and the ability to use it, in order to thrive in this globalized economy.

One of our projects, the Minnesota Intelligent Rural Communities Initiative, MIRC, had the support of the American people through the American Recovery and Reinvestment Act. Blandin Foundation administered MIRC on behalf of a coalition of 19 state-wide partners and 11 rural communities. Our work was funded partially through the federally-funded Broadband Technology Opportunity Program, BTOP, one of 44 sustainable adoption grants awarded nationwide. Through MIRC, we sought to support and encourage broadband adoption as a strategy for job growth and wealth creation, to increase the culture of use of broadband services, and to improve efficiency and effectiveness of digital literacy training. In sum, helping rural communities keep up globally was our real task.

MIRC set measurable goals. All were accomplished or exceeded, and the details have been submitted for the record. Here's just one highlight:

Broadband adoption in participating MIRC communities grew 15 percent faster than in the rest of rural Minnesota. But, subscription rates tell only part of the story, and not even the most important part. Here are just a few examples:

The town of Thief River Falls launched a collaboration between local broadband providers and a nonprofit to supply refurbished computers, subsidized broadband subscriptions, and digital literacy courses to low-income families. And 84 percent of these first-time computer owners have continued their broadband subscriptions after the subsidies ended.

In the small town of Akeley, Minnesota, the business community built a series of peer-led technology workshops that have helped entrepreneurs bring their businesses to the next level using more sophisticated Internet-based tools.

An immigrant center in Winona, Minnesota, launched digital literacy training in Hmong and Spanish for recent immigrants.

A consortium of nine districts in Stevens County in southern Minnesota developed a broadband-based distance learning service for students with disabilities.

This is complex work, with many moving parts. But, I can state succinctly the policy implications. Access to broadband is key, but so is adoption, and community-based community-engagement efforts work.

I'd like to close with just one more voice, that of Kristen Fake, a small-business owner in Akeley, Minnesota when she was describing the impact of MIRC on her town. She said, "We've turned a corner and become a community that's actually growing and thriving."

And persuaded by the effectiveness and impact of these efforts, and mindful of the critical role that broadband access and adoption plays in the economic and social life of rural places, Blandin Foundation's Board of Trustees has committed an additional \$1.5 million to continue to support broadband adoption efforts in rural Minnesota in 2013 and 2014, and we look forward to continued opportunities to partner with the Federal Government in that important work.

Thank you. [The prepared statement of Ms. Joselyn follows:]

PREPARED STATEMENT OF BERNADINE JOSELYN, DIRECTOR, PUBLIC POLICY AND
ENGAGEMENT, BLANDIN FOUNDATION

Chairman Pryor, Senator Wicker, Members of the Committee

I bring to you today the voices of rural community leaders. These are the people who are engines of vibrancy across the American landscape. They are strong, hopeful people and they can make a little support go a very long way.

When we met Kristin Fake, a sole proprietor in tourism-dependent Akeley, Minnesota, it was a leap of faith for her to come to the workshop hosted by the University of Minnesota Extension Service, one of our partners in our broadband work. Like so many, she couldn't imagine how technology might benefit her home staging business. At the workshop she quickly discovered that her clients were being misdirected by Google maps, how keywords drive inquiries, and how she might use a smart phone to dramatically improve her customer service. Her annual sales now are much higher than before she took the class and products she advertises on Facebook often are purchased before she even gets them displayed in her shop. Kristin is poised to take her business to a new level as Akeley continues to recover from a very tough economic patch.



Kristin went from not being able to imagine how technology might be helpful to her business to creating demand for products and services that the marketplace hadn't yet imagined. Empowering people through technology also was the focus of our partnership with the Leech Lake Band of Ojibwe.

Janice Gale, director of the Leech Lake Band's Temporary Employment Program, long had seen the digital challenges that her neighbors and workers faced in seeking even temporary employment. She quickly put to work the resources and relationships available through our network of partners to teach online job search and work skills, and to expand the availability of computers on the reservation. A computer lab at the Boys and Girls Club, for example, attracts 250 students each month. Refurbished computers, training and subscriptions for kids and families were distributed through Head Start. Temporary workers who participate in the digital literacy program upgrade their skills and qualify for higher pay. Temporary Employment Program student workers help learners in the computer labs, which is a great benefit to both trainers and learners. Janice, in her quietly passionate way, grins when she tells how many participants have been inspired to pursue their GED.



Multiply Kristin Fake and Janice Gale times hundreds. And the stories continue to roll in from communities all across rural Minnesota, where adoption is not just a policy imperative, but a community imperative.

Blandin Foundation is a private foundation that has the unique privilege of working exclusively with rural communities in Minnesota. Based in Grand Rapids, Minnesota, we are one of only a handful of foundations nationwide so focused on rural communities, and we are the state's largest foundation located in a rural community.

What we have learned over 75 years is that thriving communities are built on hard work. On the hard work of leadership, inclusion, reaching across differences and building lasting connections. On commitments, and on belonging—that indelible sense of place that is home.

That's the fertile soil that healthy communities grow in. And that's what Blandin Foundation is about—helping people imagine, lead and grow vibrant, resilient, rural communities.

From our experience, realizing the promise of the Internet is as much about investing in human capacity as it about investing in technological capacity. Maybe more.

After a career in the Foreign Service, I became Blandin Foundation's first-ever public policy director in 2003. When I looked out over the rural landscape, one issue that stood out as having great potential to help rural communities thrive into the new century: access to high-speed Internet, and the capability to take advantage of its many social and economic benefits.

Today the digital divide remains far too real for rural America. And especially real for those who face other types of barriers—poverty, language, isolation. The work of bringing the promise of the Internet to all Americans clearly is not done. We believed in 2003, and still do today, that

1. Broadband is the indispensable infrastructure of the 21st century, and
2. Rural communities need broadband access, *and* the ability to use it, in order to thrive—and even survive—in an ever more globalized world.



To this end, Blandin Foundation has invested in a body of work focused on strengthening community broadband leadership and adoption. One of these projects, the Minnesota Intelligent Rural Communities Initiative (MIRC), had the support of the American people through the American Reinvestment and Recovery Act, which connected our work to national goals.

Blandin Foundation administered MIRC on behalf of a coalition of 19 statewide partners—regional development commissions, state workforce and education institutions, etc.—and 11 rural demonstration communities. Our work partially was funded through the Federal Broadband Technology Opportunity Program (BTOP), one of 44 sustainable adoption grants awarded nationwide.



MIRC began in 2010 and was largely completed by the end of 2012, putting to work \$4.8 million of Federal grant dollars, \$1.8 million in matching funds and countless hours of work by community leaders to create a network of resources and support to rural Minnesota communities, business owners, students, health care facilities, local governments, the poor and un- and under-employed.

Our aims were ambitious: to support and encourage vibrant rural economies through broadband adoption as a strategy for job growth and wealth creation; and to accelerate broadband adoption.

Specifically, we sought to:

- Support and encourage vibrant rural economies through broadband adoption as a strategy for job growth and wealth creation.
- Increase “culture of use” of broadband services.
- Improve efficiency and effectiveness of digital literacy training service delivery.
- Accelerate broadband adoption by two percent over its statistically anticipated growth (increasing broadband subscribers by 38,556 more than could otherwise be expected).

In sum, helping rural communities keep up globally was our real task. Thanks to the Federal funding we received we were able to take on an ambitious, comprehensive, multi-sector effort that wove together work at the local community level, all the way up to state-wide engagement.

MIRC set measurable goals. All were accomplished or exceeded:

Outcome	Goal	Accomplished
New households subscribed to broadband	38,000 (2 percent above statistically anticipated growth)	40,496
Number of public-access computer sites	0	60
Number of people who participate in at least 16 hrs of training/education	3,640	9,000
Refitted and licensed computers distributed to first-time computer owners	1,000	2,067
Number of people reached through outreach and awareness	160,000	250,000

Overall, broadband adoption in participating communities grew close to 15 percent faster than in the rest of rural Minnesota. And communities that reported the highest rates of participation in MIRC activities also experienced the highest rates of broadband subscription growth.

These data show that, without a doubt, rural communities across Minnesota moved the needle on project outcomes, especially with underserved residents and businesses.

Dr. Jack Geller of the EDA Center at University of Minnesota-Crookston and lead researcher for MIRC, concluded in his final evaluation that, “It’s hard not to connect the MIRC project . . . as a contributor to Minnesota’s leading position in rural broadband adoption.”

Persuaded by the effectiveness and impact of these efforts, and mindful of the critical role that broadband access and adoption play in the economic and social life of rural places, Blandin Foundation’s Board of Trustees has committed an additional \$1.5 million to continue to support broadband adoption efforts in rural Minnesota in 2013 and 2014.

Our Approach to the Challenge of Broadband Adoption

Blandin Foundation’s community-based efforts take many forms, driven by the unique needs and interests of participating communities. Our strategies include:

- Offering individuals training in computer literacy and knowledge worker career development strategies.
- Providing technical assistance and customized training to small businesses and entrepreneurs.
- Distributing refurbished computers to low-income, rural Minnesota residents.
- Partnering with Internet service providers to offer subsidized subscriptions to connect those computers to the Internet.
- Helping communities identify their unique goals and providing the technical assistance and grant funding needed to turn those goals into accomplishments.

At the heart of our approach is high-touch, multi-sector, sustained community engagement. This includes community-wide visioning and goal setting and a community-driven grant proposal solicitation process to generate project ideas and community commitment upfront.

To help drive home the recognition that broadband is a necessary but not sufficient element of economic development and community vitality, MIRC used indicators developed by the New York-based Intelligent Community Forum (ICF) to help communities baseline and measure their competitiveness in the broadband economy. These indicators include: ensuring broadband infrastructure, developing a “knowledge workforce”, supporting innovation, redressing the digital divide, and effectively using marketing and advocacy to tell the community’s technology story.



Community leaders used the ICF indicators to identify and select community projects that best fit local needs and focus their efforts on short term achievable goals that would have meaningful impact over the long term. More than 100 community-identified projects have been funded so far. Here are a few examples:

Ensuring the Availability and Use of Broadband Infrastructure

Thief River Falls launched “Computers for Our Community,” a collaboration between local broadband providers and MIRC partner PCs for People. Over 18 months, the project delivered 126 refurbished computers, 91 reduced-rate broadband subscriptions, and nine multi-week digital literacy courses for low-income families. Most (84 percent) recipients continued their broadband subscriptions even after subsidies ended.

Lac qui Parle County created a mobile computer lab that brings broadband access to one of Minnesota’s most sparsely populated regions. A local partner testified: “The Computer Commuter. . . connects patrons to people and places they had no idea they could connect to!”

Fostering Innovation

An immigrant resource center in *Winona* launched digital literacy training in Hmong and Spanish for more than 60 recent immigrants. The project “. . . built bridges among cultures and organizations” and led to the realization that a “connected city helps everyone.”



A consortium of nine school districts in *Stevens County* developed a broadband-based system to provide specialized distance learning services for students with disabilities. Their takeaways: “[Realization] that the world is able to communicate and work cooperatively using technology; and, that the world is not limited to Stevens County.”

Benton County added new computers in libraries, schools, and senior housing and created 13 new Wi-Fi access points in a variety of businesses and community sites, including an elder care facility. According to the county’s economic director, “Our elected officials now see the importance of broadband for economic development and community vitality.”

Deleting the Digital Divide

MIRC partner and nonprofit *PCs for People*, in addition to surpassing their goal to refurbish and redistribute 1,000 computers to low-income rural households, opened affiliate storefronts in four rural Minnesota communities in each corner of the state. Said one computer recipient: “I’ve gone back to school; I have two kids and now I don’t have to go to the library and find a sitter to do research. . . I can stay home with my kids.” When expressing her appreciation for receiving a computer and Internet connection, another recipient explained that the computer was going to be a Christmas present for her child; receiving it meant that she wouldn’t have to choose between buying gifts or feeding her kids over the Christmas break.

Building a Knowledge Workforce

Cook County opened a computer lab as part of a higher education distance learning partnership. During the project’s 18 months, the site provided 21 training sessions attended by 185 people in this remote community with a population of 1,351. The lab continues to be available to all community residents and is used as a public Internet-access site and distance learning resource. The partnership offers credit courses from more than 25 institutions of higher learning.

Marketing and Advocacy (The capacity to advocate for change within the community and market themselves to the world)

A local-access television station in *Itasca County* upgraded its software, hardware and website interface to live stream and archive public meetings online. The move has improved access to these meetings for permanent and seasonal residents. Several other communities enhanced their government and business online presence, including *Windom* in far southwest Minnesota, which planned, launched and continues to maintain the “Finding Windom” community portal web presence.



Here is a sampling of some the voices of rural Minnesotans who participated in MIRC reflecting on the impact of these broadband adoption efforts on their overall community vitality:

“We’ve turned a corner and become a community that’s actually growing and thriving instead of stagnant and dying, with what we’ve learned from the MIRC program.”—Kristin Fake, owner, Just a Stage/Second Stage home staging, Akeley, MN

“This project has permanently changed the way we think and the way we work together.”—Della Schmidt, Winona Area Chamber of Commerce, Winona, MN

“These technology classes have encouraged our Hispanic and Somali immigrants to interact, really for the first time.”—Fatima Said, Project FINE, Winona, MN

“This effort has helped us develop wonderful community connections. We have reached out to our whole community.”—Keri Bergeston, Principal, Dawson/Boyd (MN) High School

“MIRC efforts have really contributed to creating a ‘Culture of Use’ amongst tribal members. Overall, MIRC has helped the Leech Lake Reservation increase the economic vitality of our community. Tribal community member are more familiar with the tools of broadband and the economic opportunities that are available.”—Mike Jones, Chief of Staff to Tribal Chair, Leech Lake Band of Ojibwe, Walker, MN

“This framework brings people together that have not always worked together—technology advocates, workforce, social service agencies, and economic development professionals.”—Danna MacKenzie, Cook County (MN) IT Director

“The families in our community will see benefits for many years to come as a result of everyone’s hard work and dedication on this project.”—Kristen Lee, Independent School District #381, Two Harbors, MN

Lessons Learned: Key Elements of Successful Adoption Efforts

I. Communities know best.

Involve citizens directly in articulating their community's broadband adoption and utilization goals to catalyze long-term engagement needed to increase adoption.

II. Local Leadership matters.

Help local broadband champions get and use skills to frame issue, build and sustain relationships and mobilize people to build a community's capacity to achieve its broadband goals.

III. Broadband is not an end in itself.

It is a means to the higher ends of increased economic vitality and improved quality of life. Framing it this way helps.

IV. High touch outreach works.

Effective recruitment strategies are intra-community, hyper local, and personalized. Change follows relationship lines.

V. Peers make great teachers.

Peer-based learning formats are popular, low cost and easily sustainable tools to build a community's technological savvy.

VI. Cross-community communication is key.

Signage, local media support, and aligned social media are effective low-cost ways to spur and sustain energy and excitement for community projects.

VII. Engage tomorrow's leaders today.

Recognize and authentically engage the talents of young people. This generation of leaders brings energy and sustainability to any community initiative.

VIII. Connect the economic dots.

Framing increased sustainable broadband use as a necessary but not sufficient ingredient in a "whole systems" approach to strengthen community vitality can help communities see and leverage the connection between the technology and benefits to community life.

IX. Have patience.

This work takes time. Look for and celebrate early and easy "wins," but think long term and build capacity and energy for the long haul. Money and other resources follow vision and commitment.

Conclusions and Policy Implications

In service to the work of this committee and anyone working to strengthen rural communities, Blandin Foundation commends to you these key conclusions that we have drawn from our experience:

- Broadband access alone is not enough: without concerted, community-based efforts to ensure that *all* citizens are able to take advantage of the Internet, the digital divide will continue to grow and to undermine America's promise as a democracy where equal opportunity is available to all.
- Community-based broadband literacy and market development efforts can and do help ensure that all Americans can participate fully in our Nation's economy and civic and cultural life.
- Eliminating the digital divide is an urgent challenge that must be part of our national agenda. States and communities need the Federal Government and its resources as a partner in this work.
- Federal investment in broadband access and adoption made available to Minnesota through the American Recovery and Reinvestment Act have made a significant positive difference to rural Minnesota communities' ability to be globally competitive and ensure a high quality of life for their residents.
- NTIA has been a very helpful partner in our efforts to bring to rural Minnesota communities the full benefits of the broadband-enabled economy. NTIA's "Broadband Adoption Toolkit," released in May of this year, is an especially powerful tool for shining a light on best practices, and making them available to community champions across the country.

In sum, access to broadband is key: Evidence abounds that high-speed Internet access has economic benefits (positive impact on median household income, employment, and business growth).

But so is adoption. According to the report, “Broadband’s Contribution to Economic Health in Rural Areas: A Causal Analysis,” by B. Whitacre, S. Strover, and R. Gallardo (March 26, 2013), “Non-metro counties with high levels of broadband adoption in 2010 had significantly higher growth in median household income between 2001 and 2010 compared to counties that had similar characteristics in the 1990s but were not as successful at adopting broadband.”

This point was eloquently echoed in a recent edition of “The Daily Yonder,” published on the web by the Center for Rural Strategies, a non-profit media organization based in Whitesburg, Kentucky, and Knoxville, Tennessee.

“While most government broadband policies have traditionally focused exclusively on providing infrastructure, there is a case to be made for focusing on demand. . . . Investments in people, education and training are essential to achieve meaningful use of the Internet.”

On behalf of Blandin Foundation, our partners, and the people of rural Minnesota and rural America who work at broadband adoption every day, it is our honor to share our work with you and others. I trust that we have demonstrated how, in rural communities especially, support for broadband adoption can be stretched a very long way.

[The witness also submitted Minnesota Intelligent Rural Communities Program—Demonstration Communities final report

by Robert Bell
Intelligent Community Forum

A report commissioned by the Blandin Foundation to support the work of the Minnesota Intelligent Rural Communities Coalition and Funded by the American Recovery and Reinvestment Act http://blandinfoundation.org/—uls/resources/MIRC_ICF_Final_Report-04-08-13.pdf

Senator PRYOR. Thank you.
Ms. McPeak.

**STATEMENT OF SUNNE WRIGHT McPEAK, PRESIDENT
AND CHIEF EXECUTIVE OFFICER, CALIFORNIA EMERGING
TECHNOLOGY FUND**

Ms. McPEAK. Thank you for inviting me to share the experience from California. In California, which has some of the most challenging terrain for broadband deployment of any state and the largest population of people who were not online when we began the effort, we have made very significant progress, with bipartisan leadership.

The California Emerging Technology Fund that I represent was established by the California Public Utilities Commission as a result of mergers of telecom companies in 2005. But, in addition, our Governor and legislature first had a broadband task force and now have established a broadband council in statute.

The CPUC has established a fund converted from high-cost subsidies for telephony to support broadband deployment. And recently, the legislature and the Governor allowed that fund to be used to support broadband connectivity in publicly subsidized housing. In addition, through executive order, our Governor has said digital literacy is a priority for our state. So, we’re committed to closing the digital divide.

When we began, however, it was like having five states inside California, with respect to the geography that wasn’t covered with deployment and who hadn’t adopted. We had the national average for adoption at 55 percent, and Internet use overall at 75 percent. We’ve now increased that to having broadband use at 76 percent at home, and Internet use that exceeds 80 percent. Very signifi-

cantly, we've increased low-income households by 20 percentage points, Latino households by 18 percentage points, people with disabilities by 20 percentage points, and our rural adoption has caught up with urban, because we couple adoption with deployment in California. However, those now left offline, left to adopt, are largely urban poor and those in rural areas that have no access at all.

With all of this effort in California, we need to have an increasing partnership—set of partnerships between the Federal Government and the State, public and private partnerships, and provider and community partnerships. To be sure, California has benefited from being a partner with the Federal Government. We received, from the FCC, over \$22 million for a Telehealth network. We were a grantee, under the NTIA BTOP program, of \$14.3 million for 19 community-based organizations. And I should hasten to say, we met or exceeded our contract obligations, achieving more than 200,000 adoptions, people who actually adopted broadband for the first time subscribed, and generating more than 2700 jobs. So, we have been, I think—benefited greatly by this partnership from the Federal Government.

I come here today to share with you what more you can do. Clearly, there is a huge resource in the FCC with their powers and their resources, and NTIA Director Larry Strickling and his team have a wealth of knowledge about what works and relationships with states and nonprofits throughout the country that you've already invested in, that is an asset that should be capitalized upon.

In terms of our learnings and recommendations for action, here's what we want to suggest:

First, there is no substitute for leadership and for Congress setting explicit goals, with performance metrics and a timetable to achieve them, on adoption. A focus on getting results is essential.

Second, there is a need to connect the dots at the Federal level across bureaucratic silos and to encourage each of the Federal departments to optimize the use of broadband and information technology in every one of their programs. We have provided you very specific examples that we can elaborate upon.

Next, broadband needs to be integrated into every program. And I dare say that we're probably not going to be able to achieve adoption in low-income communities without a broadband lifeline program that is established at the FCC.

We also have huge benefit in the investment already through NTIA BTOP grants, and would suggest that an additional prudent investment in broadband adoption that is done in partnerships with the states, with the private sector and community organizations, who are the trusted messengers and honest brokers, would go a long ways to closing the digital divide.

And last, we would hope that it would be the hallmark of a congressional directive on closing the digital divide and improving, increasing adoption, that, indeed, we do it, as I've said before, through partnerships with states, with the private sector, and with community organizations.

[The prepared statement of Ms. McPeak follows:]

PREPARED STATEMENT OF SUNNE WRIGHT McPEAK, PRESIDENT AND CHIEF
EXECUTIVE OFFICER, CALIFORNIA EMERGING TECHNOLOGY FUND

Closing the Digital Divide is an Imperative

Imagine if you were not able to communicate instantaneously with others using your smart phone, digital tablet, or computer. That is the reality for more than 9 million Californians who live in remote rural communities, on tribal lands, in low-income neighborhoods, or who have a disability. Those of us who have the benefit of a personal computing device coupled with high-speed connections to the Internet—referred to generically as “broadband” that includes both wireline and wireless technologies—have come to depend on this connectivity for our work, staying in touch with family and friends, and making our daily lives easier.

Broadband is essential 21st century infrastructure for global competitiveness. It is a key factor in attracting capital investment to generate jobs. Communities without broadband are being left behind in the Digital Age—remote rural areas, poor urban neighborhoods, and people with disabilities are even more disadvantaged without broadband availability and computing devices to access the Internet. Closing the Digital Divide with public policies and strategies to achieve ubiquitous broadband deployment and to accelerate broadband adoption is an imperative for economic prosperity, quality of life, and family self-sufficiency. Fortunately, it is a goal that can be achieved with inspired vision, focused leadership, alignment of existing resources, and enlightened investment of a modest amount of additional public funding to encourage partnerships—federal-state, public-private, and provider-community. There is ample research and empirical evidence about what it takes to get the job done.

The California Experience and Progress in Closing the Digital Divide

California has some of the most challenging terrain in the Nation for broadband deployment and the largest populations of disadvantaged residents as priority communities for broadband adoption. When California began to focus on closing the Digital Divide, the number of “unconnected” residents was the equivalent of having 5 other states within our boundaries. Approximately 94 percent of all residents had broadband access—however the 6 percent of residents totally unserved represented 768,000 households (about 2 million residents), more than the population of the State of Nebraska spread out over more than 44,000 square miles of inhabited area, the size of the State of Kentucky. Almost 13 million residents (largely urban poor) were not connected, more population than the State of Illinois.

In addition, 1.9 million people with disabilities were off-line, the population of the State of New Mexico. And, 680,000 Native Americans were not connected, larger than the population of the State of Alaska. It should be noted that California has the largest population of Native Americans than any other state with 111 federally-recognized tribes. Most of the tribal lands lack broadband connectivity and want broadband access according to recent consultations of Tribal Leaders being convened by Judge Cynthia Gomez, the Governor’s Liaison to Tribal Governments and the Executive Secretary of the California Native American Heritage Commission in collaboration with the California Emerging Technology Fund and the Corporation for Education Network Initiatives in California (CENIC).

The California Emerging Technology Fund (CETF) was established at the direction of the California Public Utilities Commission (CPUC) in the orders approving the 2005 mergers of SBC–AT&T and Verizon–MCI. The successor companies agreed to provide a public benefit by contributing a total of \$60 million into this new non-profit with the mission to close the Digital Divide in California. CETF became operational in 2007, working in partnership with the Governor and State Administration, Legislature, CPUC, local governments, and a network of more than 80 community-based organizations (CBOs) to systematically implement a Strategic Action Plan to close the Digital Divide in California, tackling both broadband deployment and adoption challenges. CETF reports to the Legislature through the CPUC.

In addition to establishing CETF, California policymakers have taken other key steps to close the Digital Divide, including:

- In 2007 the Governor with the support of the Legislature convened the California Broadband Task Force which produced the base report to focus attention on the issues.
- In 2008 the CPUC and the Legislature established the California Advanced Services Fund (CSAF) to subsidize broadband deployment to unserved and underserved areas by converting a high-cost fund for telephone service to support broadband infrastructure while also significantly reducing the annual amount

collected from consumers. Through subsequent legislation the total amount authorized to be collected for CASF has been increased to \$315 million.

- In 2009 the Governor issued an Executive Order to advance digital literacy that sets forth official State policy and requires agencies to develop and implement an action plan.
- In 2010 the Legislature and Governor established the California Broadband Council in statute to sustain State attention and leadership to close the Digital Divide.
- In 2013 the Legislature and Governor authorized CASF funds to be used for broadband connectivity in publicly-subsidized multi-unit affordable housing.

The sum total of this collective effort is significant progress in the last 6 years. In 2008, California's statewide adoption rate for Internet use was 70 percent with 55 percent having broadband use at home—the same as the national average. Today, 86 percent of Californians use the Internet and 75 percent access the Internet at home with a high speed connection (including 6 percent that access the Internet only by a mobile “smart phone”). Also, there have been significant increases in broadband adoption by priority consumer populations:

- Low-income households up 20 percentage points (from 33 percent in 2008 to 53 percent in 2013).
- Latino households up 18 percentage points (from 34 percent in 2008 to 52 percent in 2013).
- People with disabilities up 20 percentage points (from 36 percent in 2008 to 56 percent in 2013).

The Role of the California Emerging Technology Fund

The California Emerging Technology Fund (CETF) has been a pivotal partner in driving this progress on closing the Digital Divide, serving as a catalyst for focus, action and results by: (a) setting the goals for broadband deployment and adoption; (b) delineating the strategic framework to achieve the goals with regular reports on progress to foster accountability; and (c) making targeted and leveraged investments in public policy initiatives and grants to CBOs. CETF is performance-driven and outcomes-focused. The CETF Strategic Action Plan is based on research and fact finding about “what works” and sets forth the overall approach and strategies to close the Digital Divide, including the metrics for accountability that provide the disciplined focus on results. CETF set the following goals for achieving success by 2017—10 years after CETF began operations—which have been embraced widely by policymakers and stakeholders.

Broadband Supply—98 percent Deployment

- Access for At Least 98 percent of All Households
- Robust Rural-Urban California Telehealth Network (CTN)
- All Tribal Lands Connected and Part of CTN

Broadband Demand—80 percent Adoption

- Overall Statewide Adoption At Least 80 percent by 2015 and 90 percent by 2020
- All Regions and Socioeconomic Groups within 10 Percentage Points of Overall Adoption (At Least 70 percent)
- Increased Overall Accessibility and Universal Design

Broadband Global Leadership—Within Top 3 Rankings

- Appropriate and Sufficient Speeds for Consumer Applications that Drive Adoption
- Increased Economic Productivity
- Reduced Environmental Impacts

There is not a “silver bullet” to closing the Digital Divide—no one strategy or action will get the job done. However, there is “silver buckshot”—a “critical mass” of inter-related and mutually-reinforcing strategies and actions that do succeed. To achieve the optimal impact and a higher return on investment of the original seed capital, CETF employs 5 overarching strategies to drive progress on the broadband deployment and adoption goals:

1. Civic Leader Engagement
2. Venture Philanthropy Grantmaking

3. Public Policy Initiatives
4. Public Awareness and Education
5. Strategic Partnerships

Successful implementation of these strategies requires engaging and partnering with “trusted messengers” and “honest brokers” who know their local communities and target neighborhoods, including local government officials, regional civic organizations, and successful CBOs. CETF has focused on 3 priorities for grantmaking: rural and remote areas; urban disadvantaged neighborhoods; and people with disabilities. CETF has awarded more than \$31 million in grants to community-based organizations (CBOs) and public agencies as “partners” in achieving the broadband deployment and adoption goals.

Leadership and Strategic Investments by the Federal Government

California’s progress in closing the Digital Divide has been significantly advanced by the leadership of the California Congressional Delegation and strategic investments by the Federal government. The Federal Communications Commission (FCC) awarded \$22.1 million from the Rural Health Care Pilot Program (matched by \$3.6 million from CETF) to connect a network of more than 800 facilities in rural and urban medically-underserved communities that comprise the California Telehealth Network (CTN). Telehealth is a major public policy initiative in California to drive both broadband deployment and adoption. Thus, the FCC Healthcare Connect Fund is a vital resource for the future, although the program needs some refinement. In addition, California has benefited greatly from partnerships with the U.S. Department of Commerce National Telecommunications and Information Agency (NTIA) under the American Recovery and Reinvestment Act (ARRA) Broadband Technology Opportunities Program (BTOP).

NTIA awarded 13 ARRA BTOP grants for broadband infrastructure deployment exceeding \$428 million and 17 grants for broadband adoption totaling almost \$122 million, including support for CTN operations and development of services. NTIA provided 2 grants to CETF for a total of \$14,359,476 (matched by CETF \$2,551,796) to support 19 CBOs (sub-awardees) resulting in more than 200,000 broadband adoptions and more than 2,700 jobs, which met and exceeded the contractual performance objectives. These grants were concluded as of June 2013 and are summarized below.

Broadband Awareness and Adoption

The Broadband Awareness and Adoption (BAA) project mobilized the expertise and resources of 8 partners (sub-awardees) to reach communities most impacted by the Digital Divide: low-income families, limited English-speaking Latinos, rural residents and people with disabilities. BAA partners worked with schools, churches, health clinics, job training programs, and social service providers to develop model “service ecosystems” which included technical support, low-price computers, and affordable broadband connections. Key accomplishments include:

- Increased awareness about the benefits of broadband among 13,296,068 low-income residents (266 percent).
- Provided 719,255 low-income individuals with basic Digital Literacy skills to use broadband technology (106 percent goal).
- Achieved 198,714 new broadband subscriptions by low-income households (149 percent goal) and distributed 6,866 computers to low-income households (172 percent goal).

Total BAA Budget	\$9,360,672
NTIA Grant	\$7,251,295
CETF Match Funds	\$979,476
Partner Cash Match	\$882,667
Partner In-Kind Match	\$247,234

Access to Careers in Technology

The Access to Careers in Technology (ACT) project engaged 11 partners (sub-awardees) to establish scalable workforce development programs while expanding access to broadband and 21st Century jobs in low-income communities throughout the state. Individuals with multiple barriers to employment—ranging from the homeless to former drug addicts—completed Information and Communications Technology (ICT) training to obtain jobs in a spectrum of major industries from engineering to entertainment with pathways to living-wage careers in high demand. Key accomplishments include:

- Trained 24,675 low-income youth and adults and 12,044 small business owners and employees with Digital Literacy skills (101 percent goal).
- Secured 2,745 ICT career-path jobs for low-income residents (107 percent goal).
- Achieved 9,331 new broadband subscriptions by low-income households and distributed 5,547 computers to low-income households (101 percent goal).

Total ACT Budget	\$11,081,130
NTIA Grant	\$7,108,181
CETF Match Funds	\$1,572,320
Partner Cash Match	\$2,379,839
Partner In-Kind Match	\$20,790

Lessons Learned

The successful implementation of the NTIA grants by CETF and our 19 partners was led by Senior Vice President Susan Walters, who prepared a report *Lessons Learned from the Field* which has been submitted as part of this testimony for the Congressional record.

CETF Lessons Learned from ARRA NTIA BTOP Grants

- Grantee executive leadership and staff management capacity are essential.
- Coaching and the “learning community” were key to reaching goals.
- Thoughtful work plans in advance led to faster recognition of problems.
- Anchor institutions and community organizations need to work to ensure that clients actually obtain broadband (information and encouragement alone are not sufficient).
- Integrating digital literacy training and broadband adoption into existing programs is the best way to ensure sustainability and continually narrow the Digital Divide.

The experience of all NTIA grantees has been incorporated into the NTIA Took Kit which is a very useful compilation of data and recommendations for accelerating broadband adoption. NTIA Administrator Larry Strickling and his team (Laura Breeden and colleagues) have a wealth of knowledge about “what works” and established working relationships with state agencies and non-profit organizations throughout the Nation that are valuable assets that should be supported and leveraged for sustained progress in closing the Digital Divide.

Broadband Empowers People and Transforms Lives

The California Emerging Technology Fund (CETF) has ample evidence about the ways in which broadband access and information technology empowers people and transforms lives. This is particularly effective when broadband is integrated into services and programs that have relevance to everyday living, such as in school, job training, housing, and healthcare.

For example:

- CETF has developed School2Home to turn around low-performing middle schools through the integration of broadband and computing technology into the teaching and learning processes with significant parent engagement. Not only is School2Home improving academic performance above district and statewide gains, but also driving broadband adoption: Spanish-speaking parents increased broadband adoption at home from 48 percent to 76 percent (a 58 percent increase) and English-speaking parents increased from 84 percent to 94 percent (a 12 percent increase).
- CETF partner The Stride Center has a significant track record in training and securing employment for individuals with multiple barriers to employment, demonstrating that ICT workforce preparation can result in 90 percent of the clients obtaining jobs with a median wage double the overall regional labor market average.

The power of the statistics on closing the Digital Divide and performance data on the grants comes to life with the stories of the people who are becoming self-sufficient and productive taxpayers because of these public and private investments. Consider the experience of these real people who have benefited from broadband access and information technology:

- Daniel made the honor roll once he had broadband at home and was able to keep up with his homework assignments and navigate the Internet to gather information.
- Yanira was as a grocery delivery driver when she injured her back and couldn’t work in that job any longer. With an online course she learned how

to write a resume and cover letter, search for job listings, and e-mail applications to companies—when she began she didn't even know how to send e-mails. After just a month, she started a new job in the delivery business making nearly \$3 more per hour.

- Henri recently landed his first job as a digital animator after receiving job training and now is on a career pathway with living wages.
- Rosa is getting her high school equivalency diploma after completing two computer skills certification classes to earn a free refurbished computer and signing up for broadband at home.
- Alicia used to struggle to find work, but now works fulltime after learning how to use electronic job boards in a digital literacy class.
- Deborah was able to keep up with her high school homework with the benefit of broadband access and graduated with a 4.0 GPA. She searched the Internet for the right college and was able to apply online for admission and a full scholarship.
- Maria's flower shop has blossomed since attending a computer training class and learning how to manage and market her business.
- Sheryl turned her life around from drug abuse and losing her children after learning computer skills at a non-profit that received ARRA funds from NTIA BTOP. Today she has a full-time job, which allowed her to regain custody of her children.

Conclusions for Closing the Digital Divide and Accelerating Broadband Adoption

Although there has been a steady rise in the number of people adopting and using broadband at home, it is becoming increasingly harder to reach those who remain offline because they are remote rural residents without access and urban poor residents without digital literacy skills nor the means to afford market prices. However, all the data and experience indicates that the vast majority of people who do not have or use broadband at home want to adopt the technology when they understand the value proposition and have access. Thus, it is very important to understand what actually works to reach these consumers who should be regarded as “prospective customers in emerging markets.”

Dr. John Horrigan (who helped develop the National Broadband Plan and has worked for the Pew Charitable Trusts and Joint Center for Political and Economic Studies) concludes that the cost of digital exclusion is real and rising and that the broadband adoption challenge has three primary dimensions: cost, relevance, and digital literacy. He further finds increasing broadband adoption requires sustaining capacity and scale of strategic initiatives with states and local communities involved in the “ground game” to focus on “digital readiness” in unserved and disadvantaged communities. He provides valuable insights to guide the work in accelerating broadband adoption.

The following are the major conclusions from the experience of the California Emerging Technology Fund and our community-based partners who have been on the ground in unserved rural communities and disadvantaged urban neighborhoods.

- It is essential to set goals with quantified metrics and accountability for performance in order to drive broadband deployment and adoption to close the Digital Divide and to regularly report to the public and stakeholders to ensure continued focus on the goals.
- Optimizing impact of any investment requires engaging public officials at all levels of government and civic leaders in regional consortia and local communities. There is no substitute for leadership, but leaders need to be involved in developing the strategies and supported in systematically implementing a coherent, integrated plan.
- Broadband adoption will succeed by working in partnership with community-based organizations that are the “trusted messengers” and “honest brokers” for the unserved and disadvantaged populations.
- Affordable broadband offers are required to increase adoption among low-income households. This is likely to require an Affordable Broadband Lifeline Rate Program given that voluntary efforts to date have had modest market penetration for a variety of reasons, with the most extensive program reaching less than 10 percent of eligible participants.
- Sustainable broadband adoption requires a comprehensive approach that targets and aligns resources in low-income communities with an integrated, comprehensive “neighborhood transformation” strategy that incorporates broadband

adoption into other services, such as education, workforce preparation, and healthcare.

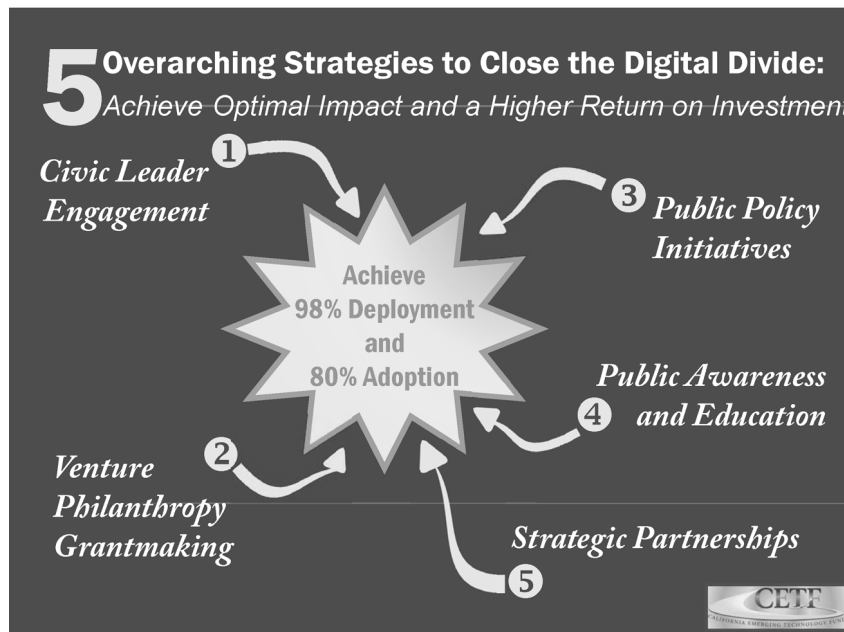
Recommendations for Continued Federal Government Leadership in Broadband Adoption

There is a foundation of leadership and expertise in the Federal government on which to launch the next generation of work to accelerate broadband adoption to close the Digital Divide in America. In particular, the powers and resources of the FCC coupled with the experience and relationships of NTIA in collaboration with the other Federal departments is a solid platform for action. Congress can greatly augment this foundation by the following actions:

- Set national goals and performance metrics for broadband deployment and adoption along with a timetable and assigned responsibilities for achieving them to encourage implementation of the National Broadband Plan and utilization of the NTIA Took Kit. Institute regular Congressional oversight proceedings to ensure performance and accountability.
- Integrate broadband and information technologies into all Federal policies and programs through funding incentives to align efforts across departments. There is a need to “connect the dots” with a set of coherent strategies that transcend “bureaucratic silos” to optimize access to and use of the Internet with high-speed connections. For example:
 - U.S. Department of Health and Human Services (HHS) should build upon the ARRA Health Information Technology for Economic and Clinical Health Act (HITECH) framework to encourage stronger linkages and purposeful collaboration of health exchanges and “meaningful use” to the telehealth networks funded by the FCC Rural Health Care Pilots and/or the new Healthcare Connect Fund. HHS and the FCC should make a concerted joint effort to connect all state and local government public health services, federally-qualified health centers (FQHCs), critical care hospitals, tribal healthcare facilities (if desired by Tribal Leaders) to these telehealth-telemedicine networks. This kind of an effort will need to be coordinated with other departments and programs, such as the U.S. Department of Agriculture’s Distance Learning, Telemedicine and Broadband Program to ensure rural communities are connected.
 - U.S. Department of Education should aggressively encourage the integration of broadband and computing technologies into the teaching and learning processes in all Federal grants to improve education, particularly to turn around low-performing schools because of the ability of the technology to engage and involve low-income parents with an approach similar to School2Home. Implementation nationwide of Common Core Standards will require a major effort on a scale not yet contemplated by educators and policymakers. Promise Neighborhoods grantees should be encouraged to promote “smart communities” by incorporating broadband adoption strategies into their programs.
 - U.S. Department of Labor should encourage integration of digital literacy and ICT skills training into all existing workforce preparation programs through Workforce Investment Act allocations to states and all other grants.
 - U.S. Department of Housing and Urban Development should promote “smart housing” in all publicly-subsidized multi-unit complexes by allowing the installation of an advanced communications system with broadband connectivity in each residence to be included in construction costs and the maintenance of such a system to be included in operating budgets. Choice Neighborhoods grantees should be encouraged to incorporate broadband adoption strategies into their programs.
 - U.S. Department of Agriculture (Rural Utility Service and all other rural economic development programs) should encourage larger-scale integrated proposals for existing grant funds that combine broadband deployment and adoption. There should be consideration of easements for broadband deployment in National Forests to support public safety, emergency response, and homeland security.
 - U.S. Department of Interior should identify all resources to assist Tribal Leaders (who request such assistance) in providing broadband service to Tribal Lands. There should be consideration of easements for broadband deployment in National Parks to support public safety, emergency response, and homeland security.

- U.S. Department of Homeland Security should become a proactive partner in FirstNet to accelerate broadband deployment and adoption to support public safety, emergency response, and homeland security.
- Request and support the FCC to accelerate reform the Universal Services Fund (USF) and to incorporate best practices for sustainable broadband adoption. With limited resources, priority consideration for funding and/or subsidies to broadband providers should be given to companies that: (a) have a coherent, explicit program with quantified goals and metrics to increase broadband adoption; (b) partner with CBOs that have a proven track record as the “trusted messenger and honest broker” in broadband adoption; and (c) target low-income communities in collaboration with other stakeholders pursuing “digital inclusion” and “neighborhood transformation” strategies (such as digital literacy in schools, workforce training, or publicly-subsidized housing).
 - An Affordable Broadband Lifeline Rate Program should be established within the next year and made available to residents in low-income census tracts in which there is a coherent “digital inclusion” component of a “neighborhood transformation” initiative with responsible local governments, key stakeholders, and respected CBOs.
 - Renewal and reform of eRate should prioritize low-performing schools and libraries in low-income neighborhoods that have established a coherent program with quantified goals and accountability to increase broadband adoption, especially as part of an overall “neighborhood transformation” initiative.
 - Connect America Fund and other programs to subsidize broadband infrastructure should give priority funding to deployment projects with plans and partners to promote broadband adoption.
- Provide additional funding to NTIA as a prudent investment in global competitiveness to establish the “next generation” broadband adoption program that builds upon the ARRA BTOP experience, aligns with other existing efforts, and leverages Federal resources through partnerships to achieve explicit adoption goals and outcomes by 2020.
 - Encourage states to adopt broadband adoption strategies and plans by giving priority consideration for funding to projects that align with and complement state programs that have explicit adoption goals with accountability for performance.
 - Facilitate collaboration among successful BTOP grantees to join forces with state governments to develop broadband adoption strategies and plans.
 - Request assistance from the National Association of Regulatory Utility Commissioners (NARUC) to engage states and convene information forums on development of broadband adoption strategies and plans.
- Foster public-private partnerships to accelerate broadband deployment and adoption. There is no substitute for the innovation and efficiency of the private sector when engaged as sincere partners motivated to achieve explicit goals. Public-private partnerships can significantly leverage public resources for a higher return on investment to taxpayers and ratepayers.
 - Request the FCC and NTIA to engage broadband providers in helping design the “next generation” broadband adoption program to achieve explicit goals and outcomes.
 - Encourage providers to partner with EveryoneOn (formerly Connect-to-Compete) by setting adoption targets coupled with affordable broadband offers that can be made available without undermining profitability. There needs to be market competition for low-income consumers to become sustainable broadband customers.
 - Request the FCC to structure USF reforms for a Broadband Lifeline Rate Program and eRate to encourage and reward providers who partner with non-profit intermediaries (such as EveryoneOn) and trusted CBOs with a proven track record and align with state plans. Reimbursement and subsidies from the USF should reward public-private partnerships that drive to and achieve explicit broadband adoption goals.

[The witness also submitted U.S. Department of Commerce National Telecommunications and Information Administration and California Emerging Technology Fund, Lessons Learned from the Field: Connecting Californians to Broadband and Digital Care (http://www.cetfund.org/files/1301_Field-Lessons-Learned%20Connecting_Californians.pdf)]



Progress in Closing the Digital Divide in California PPIC-CETF-ZeroDivide 2013 Statewide Survey

Priority Communities	Internet Use			Broadband at Home		
	2008	2012	2013	2008	2012	2013
All Californians	70%	87%	86%	55%	73%	69%
Under \$40,000 AHI	49%	79%	77%	33%	60%	53%
Latinos	48%	78%	77%	34%	58%	52%
Blacks	82%	93%	91%	66%	74%	71%
With Disability	57%	76%	74%	36%	56%	56%
Los Angeles	61%	86%	86%	48%	69%	64%
Rural	63%		81%*	51%		69%*

* As of 2010. Note: Statewide adoption rate with mobile is 75%.



2013 Statewide Survey Results

Internet Use						
California Populations	2008	2009	2010	2011	2012	2013
All Californians	70%	76%	81%	84%	87%	86%
Blacks	82%	81%	82%	85%	93%	91%
Latinos	48%	53%	65%	70%	78%	77%
Under \$40,000 AHI	49%	58%	66%	72%	79%	77%
With Disability	57%	60%	68%	67%	76%	74%
Central Valley	71%	67%	78%	85%	88%	81%
San Francisco Bay Area	77%	86%	86%	89%	88%	92%
Los Angeles	61%	71%	78%	79%	86%	86%
Orange/San Diego	73%	81%	82%	89%	90%	89%
Inland Empire	70%	76%	81%	83%	84%	86%
Rural	63%	77%	81%			

2013 Statewide Survey Results

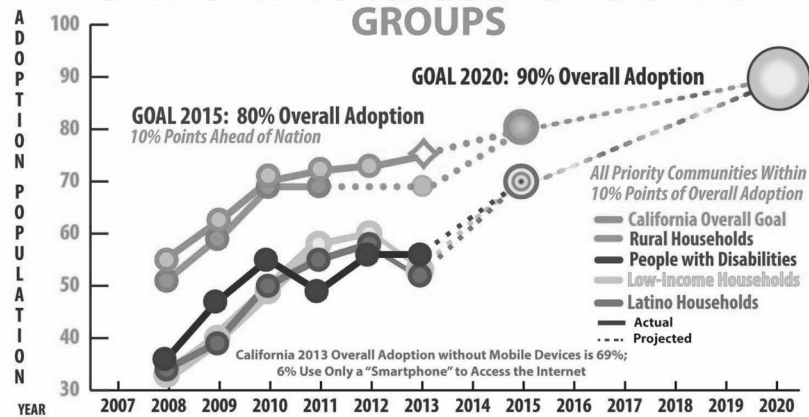
Broadband at Home

California Populations	2008	2009	2010	2011	2012	2013
All Californians	55%	62%	70%	72%	73%	69%
Blacks	66%	62%	70%	74%	74%	71%
Latinos	34%	39%	50%	55%	58%	52%
Under \$40,000 AHI	33%	40%	49%	58%	60%	53%
With Disability	36%	47%	55%	49%	56%	56%
Central Valley	53%	51%	64%	70%	71%	60%
San Francisco Bay Area	65%	73%	79%	78%	78%	80%
Los Angeles	48%	58%	67%	68%	69%	64%
Orange/San Diego	58%	70%	75%	75%	78%	77%
Inland Empire	56%	60%	71%	66%	71%	68%
Rural	51%	59%	69%			



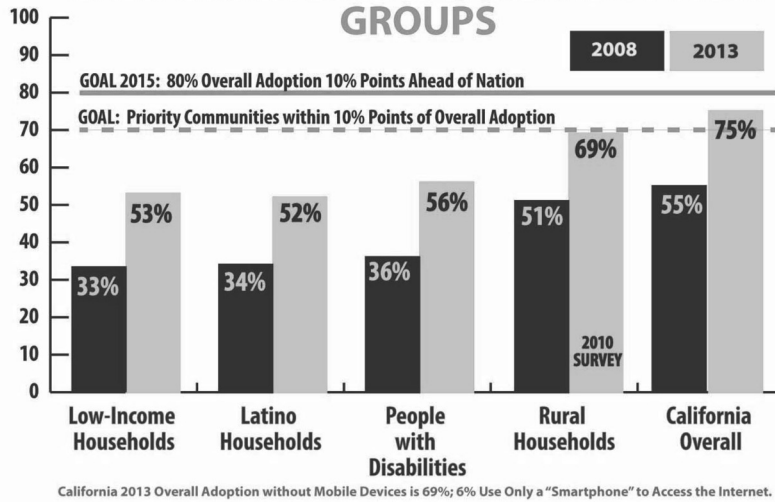
2013 Statewide Survey Results

CALIFORNIA BROADBAND ADOPTION GROUPS



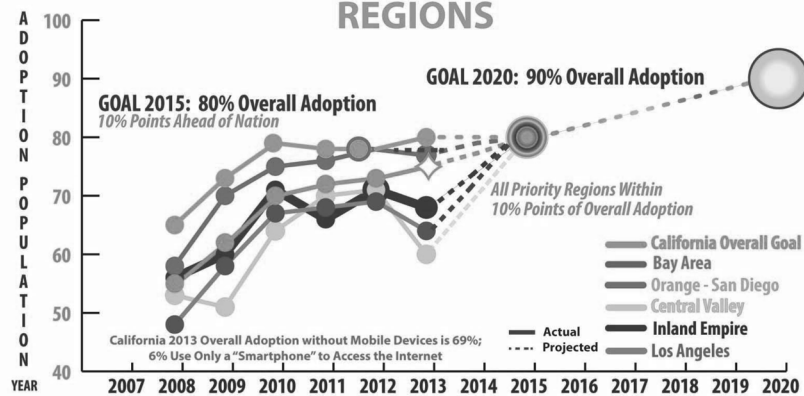
2013 Statewide Survey Results

CALIFORNIA BROADBAND ADOPTION GROUPS

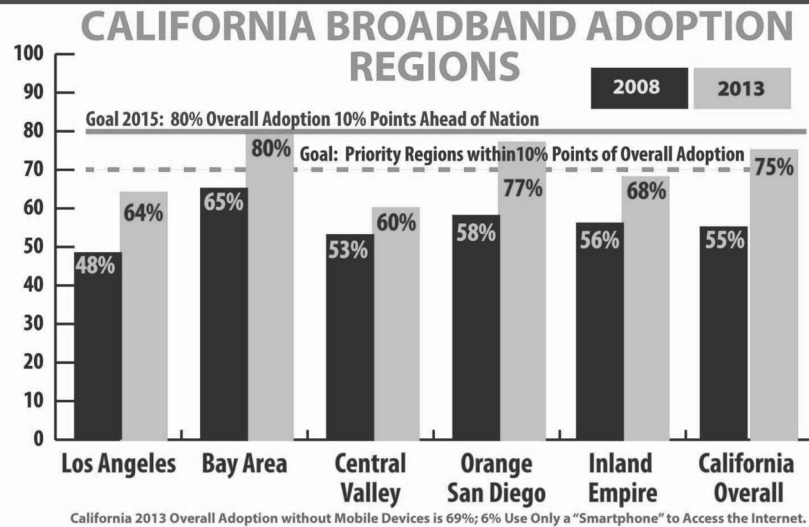


2013 Statewide Survey Results

CALIFORNIA BROADBAND ADOPTION REGIONS

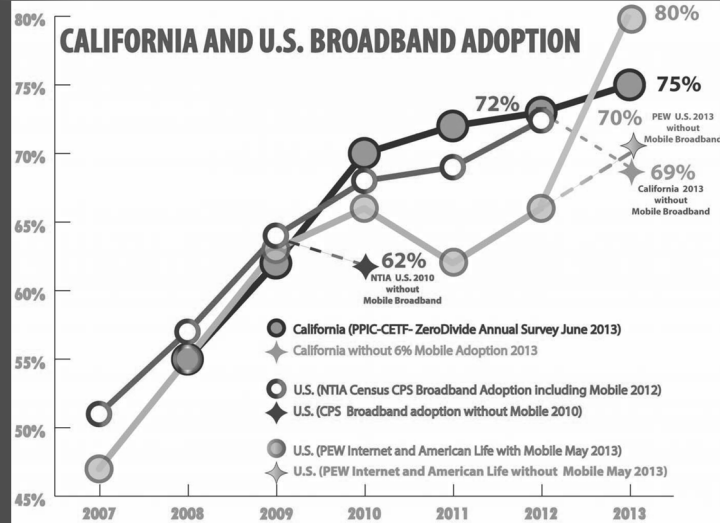


2013 Statewide Survey Results



California and U.S. Broadband Adoption

California and National Broadband Adoption Rates



California Emerging Technology Fund Projected Remaining Challenge to Reach Adoption Goals

California Households Using Broadband at Home	Connected as of 2008	Connected as of 2013	Remaining to Reach 70%	Remaining to Reach 80%
Total California 12,675,876 Households	6,862,968 (55%)	9,506,907 (75%)	Achieved	633,794
Low Income (Under \$40K) 4,753,454 Households	1,544,168 (33%)	2,519,331 (53%)	808,087	1,283,432
Latino 3,460,514 Households	1,173,762 (34%)	1,799,467 (52%)	622,893	878,944
Los Angeles 3,257,700 Households	1,559,796 (48%)	2,084,928 (64%)	195,462	521,232

- ❖ In 2008 there were 12,478,123 occupied households statewide.
- ❖ Statewide adoption rate of 75% includes 6% who have only a mobile connection. If mobile connections are not counted, then 1,394,347 more households would need to adopt to achieve 80% adoption rate.
- ❖ About half of the households that must adopt to reach 80% statewide will need to be low-income.



California Emerging Technology Fund Remaining Percentage Points to Reach Goal

California Households Using Broadband at Home	% Connected as of 2008	% Connected as of 2010	Percentage Points Increase 2008-2013	% Connected as of 2013	Percentage Points Increase	Left to Reach Goal
Total California	55%	70%	+15	69% - 75%	-1 - +5	6 - 11
Low Income	33%	49%	+16	53%	+4	17
Latino	34%	50%	+16	52%	+2	18
Los Angeles	48%	67%	+19	64%	-3	6

- ❖ Statewide adoption rate of 75% includes 6% of mobile only connections. Other adopt rates do not include mobile connectivity (smart phones).
- ❖ Rates of adoption have slowed considerably from the double-digit increases between 2008 and 2010.
- ❖ The 80% adoption goal is not likely to be reached by 2015 unless there is a significant change in public policy to offer affordable broadband rate for low-income households coupled with funding for community partners.



Senator PRYOR. Thank you.
Mr. Cohen.

**STATEMENT OF DAVID L. COHEN, EXECUTIVE VICE
PRESIDENT, COMCAST CORPORATION**

Mr. COHEN. Thank you, Mr. Chairman, Ranking Member Wicker, who does represent our birth state in 1963. And Senator Wicker, you'll be pleased to know that we'll be celebrating that 50th birthday on November 20, so just about 3 weeks from now. And also, all members of the Subcommittee, thank you for the opportunity to testify today.

The Internet has the potential to fundamentally transform our society and our economy, to equalize access to education, healthcare, vocational opportunities, and even to news, information, and entertainment. But for this to happen, we need to have ubiquitous broadband deployment and full broadband adoption.

Broadband deployment in the United States has been a great success story. Critics who bemoan America's allegedly second-rate broadband infrastructure are simply mistaken. To paraphrase the late Senator Moynihan, they are entitled to their own opinions, but not their own facts. The reality is that America's broadband companies have invested more than \$1.2 trillion to deploy world-class broadband networks which now reach 98 percent of Americans. Three of the ten companies that invested the most inside the U.S. last year are broadband infrastructure companies: Comcast, Verizon, and AT&T. For our part, Comcast has built out its broadband plant to over 99.5 percent of the homes in our footprint. We have increased network speeds 12 times over the past 11 years, and, earlier this year, we demonstrated that our existing network, right here in Washington, can deliver speeds up to 3 gig down.

Concededly, the broadband deployment picture is not perfect. There are still unserved rural areas in our nation, and we need to encourage innovative solutions to fill those gaps. But, the larger problem affecting many more Americans is the lack of broadband adoption in areas where broadband is available. Research by the FCC, Pew, and others, has demonstrated that a bucket of digital literacy issues—lack of understanding of relevance or value, fear of the Internet, and lack of understanding how to access and use the Internet—are the main barriers to adoption. The National Broadband Plan found that 41 percent of non-adopters cited these as the main barriers. It also found that only 15 percent of non-adopters cited the monthly ISP price as the main obstacle. These trends were confirmed by Pew's most recent survey, which Aaron summarized, which found that only 9 percent of people who don't go online at home cited the price of connection as the main barrier to adoption.

Addressing the broadband adoption gap is a personal priority for me and for Comcast. That is why Comcast created the program we now call "Internet Essentials." This was a voluntary commitment we offered during the regulatory review of Comcast's acquisition of NBCUniversal. But, Comcast has expanded and strengthened Internet Essentials since its launch so many times and in so many different ways that the program today barely resembles what is required under the FCC's order. In addition to providing low-cost

broadband service, Internet Essentials delivers access to low-cost computers and to digital literacy training; thus, hitting the touch point of every barrier to adoption that you've heard about on this panel today.

And I'm pleased to make an announcement today. And that is that Comcast recently connected our one millionth Internet Essentials user. In just over 2 years of the program's existence, we have connected more than 250,000 families to the Internet, most for the very first time. Now a million is a very big number, more than the entire population of the City of San Francisco and about the size of the entire state populations of states like Delaware or Montana.

We measure our success, though, not just by how many people are connected to broadband at home, but also by how they are using it. And what they have told us as we survey them is incredibly encouraging. Ninety-eight percent of those Internet Essentials customers surveyed say their kids use the Internet for doing homework, and 94 percent of them feel that Internet access has had a positive impact on their child's grades; 59 percent say that the Internet has helped someone in their household find a job. So, yes, broadband adoption through a program like Internet Essentials really does work.

I'd also like to say that Comcast supports an improved role for broadband in education. Every student deserves access to an integrated, always-on digital learning platform, a continuum of connectivity that begins in the classroom, follows the child to after-school programs, and ends with broadband connectivity at home. Updates to the E-Rate program and the administration's ConnectED initiative will advance these goals and can be done in a cost-effective and efficient manner. I commend Chairman Rockefeller, members of this subcommittee, and the administration for their leadership in these areas.

When we look at broadband in America, there is much to be proud of, but there is much work that still needs to be done, particularly with adoption. Comcast is committing to doing its part and to working with you on these issues.

So, thank you for this opportunity, and I look forward to your questions.

[The prepared statement of Mr. Cohen follows:]

PREPARED STATEMENT OF DAVID L. COHEN, EXECUTIVE VICE PRESIDENT,
COMCAST CORPORATION

Mr. Chairman, Ranking Member Wicker, and Members of the Subcommittee:

Thank you for inviting me to testify today. I welcome the opportunity to discuss the critical importance of expanding the adoption of broadband Internet service throughout our great nation. The Internet is an incredible technology that is unparalleled in its ability to level the playing field and equalize access to education, health care, and vocational opportunities, as well as news, information, and entertainment. People who are not on the Internet, however, are shut out from these benefits. Comcast, together with thousands of community partners, has made extraordinary efforts to address this challenge, but much work remains to be done.

At the outset, let me commend the Subcommittee for focusing on the issue of broadband adoption. Since 1996, America's broadband providers have invested over a trillion dollars to deploy world-class broadband networks throughout the United States. Thanks to these investments, the Internet has become a platform for innovation unlike any the world has ever seen. Entire industries that would otherwise have been impossible have flourished, and American companies like Google, Netflix, Facebook, Amazon and so many others continue to thrive at home and around the

globe because broadband providers like Comcast have invested to bring the Internet to nearly every American household. While there are still areas of the United States—particularly remote, rural areas—that remain unserved, the United States’ broadband deployment story is a story of success.

But there is a cruel irony at play. Because of the digital divide, the Internet actually exacerbates, rather than narrows, the differences in opportunities available to those who access the Internet versus those who do not. This hearing can help shine a light on this issue of fundamental fairness.

The issue of broadband adoption has been a priority for me and for Comcast. We care deeply about this issue. Rigorous survey results, including by the FCC (as part of the National Broadband Plan), the Pew Research Center, and others, consistently show that the main reasons why Americans do not adopt broadband are the perceived lack of relevance—the absence of understanding the value of the Internet—and the lack of digital literacy. In other words, the people who do not subscribe to broadband Internet services often do not see the benefits of broadband and do not have the skills or tools to use broadband. The cost of computer equipment and the monthly cost of a broadband connection are also factors, but when Americans who have not adopted broadband are asked to cite the main reason they have not done so, they consistently cite these factors less frequently than they cite relevance and digital literacy.

My colleagues and I at Comcast viewed these facts as a challenge and an opportunity to develop a program that could begin to address these obstacles of digital literacy, relevance, and cost in areas that Comcast serves. Working in concert with community partners and local elected officials, we developed the Internet Essentials program to address the main reasons that Americans do not adopt broadband.

As I detail later on, we are very proud of our results so far. In its first 22 months, Internet Essentials has connected over 220,000 households—that’s over 900,000 low-income Americans—to the Internet, most for the first time. That’s about 40 percent more people than the entire population of Washington, D.C., and about equivalent to the entire population of the City of San Francisco. While we are pleased with these results, we know that our work is not done. We continue to improve and expand the program, and have redoubled our efforts to target the barriers to adoption and to bring even more non-adopters online.

The barriers to universal broadband adoption in the United States are complex and deep-rooted, and often connected to the deep socioeconomic and poverty-driven problems that impact other areas like education and health. Overcoming these obstacles will require commitment and persistence from all stakeholders. Comcast is ready and willing to do our part, and we look forward to working with others who share these goals.

I. Broadband Deployment Has Been A Remarkable Success in the United States

One part of bringing the promise of broadband to all Americans is deploying broadband infrastructure throughout the Nation. Some critics still insist on belittling broadband in America by citing selective statistics to support the unfounded charge that our broadband Internet service is second-rate. To paraphrase the late Senator Moynihan, they are entitled to their own opinions, but not their own facts.

The facts are that Americans are getting world-class broadband from competing companies, and it is getting better every day. Today, more than 94 percent of Americans have access to one or more wired broadband Internet services,¹ and over 85 percent of Americans have access to networks capable of delivering speeds of 100 Mbps and higher.² More than 300 million Americans have access to 4G LTE mobile

¹See Eighth Broadband Progress Report, 27 FCC Rcd 10342 ¶60 (2013) at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-12-90A1.doc (“Eighth Broadband Progress Report”) (indicating that “overall, more than 94 percent of Americans have access to fixed broadband”); National Broadband Map, Broadband Statistics Report, Access to Broadband Technology by Speed, at 3 <http://www.broadbandmap.gov/download/Technology%20by%20Speed.pdf> (“National Broadband Map Report”) (indicating that 93.92 percent of Americans have access to wireline broadband speeds in excess of 3 Mbps downstream and 768 kbps upstream) (last visited Oct. 25, 2013). When wireless broadband service is included, 98.75 percent of Americans have access to broadband speeds in excess of 3 Mbps downstream and 768 kbps upstream. See *National Broadband Map Report* at 3.

²See NCTA, Industry Data, <http://www.ncta.com/industry-data> (indicating that DOCSIS 3.0-enabled networks, which are capable of delivering speeds of 100 Mbps and higher, pass 85 percent of American households) (last visited Oct. 25, 2013).

broadband, offering speeds up to 20 Mbps.³ Consumers in the United States have the third-lowest entry-level broadband prices in the world and the third-lowest price per GB of data.⁴

These data are particularly remarkable given some of the geographic and topographical challenges we face in the United States that make broadband deployment more challenging here than elsewhere. We rank 28 out of 34 OECD countries on “urbanicity,” which is a measure of concentration in high density urban areas.⁵ Because of these differences, it may be more appropriate to compare the broadband situation in individual states to that in other countries. For example, current speed data from Akamai shows that, if U.S. states were ranked against countries worldwide, six of the top ten areas in the world with respect to average connection speed would be U.S. states.⁶

Moreover, America’s policy of fostering robust broadband competition by encouraging the build-out of competing networks has worked. The United States ranks third in the OECD in the percentage of households with access to two or more competitive wired broadband providers.⁷ And new entrants like Google Fiber, Gigabit Squared, and DISH Network, as well as new innovative technologies like VDSL2 vectoring, promise to make the broadband marketplace even more dynamic. That’s investment, innovation, and competition at work.

In less than two decades, the American broadband industry has invested over \$1.2 trillion to bring multiple forms of broadband infrastructure to nearly every corner of the country.⁸ Even during this country’s recent economic troubles, when job growth stalled and private investment tumbled, American broadband companies poured some \$250 billion in private investment into broadband.⁹ So it is no surprise that when the Progressive Policy Institute (“PPI”) issued a list of their “Investment Heroes”—companies that have invested the most money here in the United States—three of the ten largest domestic investors that were not financial companies were broadband infrastructure companies: Comcast, Verizon, and AT&T.¹⁰ According to PPI, “telecommunications and cable companies are a major driver of U.S. investment today.”¹¹ Of course, this substantial investment translates not only into better and more widespread broadband networks, but also innovation, economic growth, and jobs.

For our part, Comcast made all these massive investments with private, at-risk capital—we received no government subsidies or guaranteed loans. As a result, today Comcast’s facilities deliver world-class cable, voice, and broadband Internet services. We have made broadband Internet available to over 99.5 percent of the homes within our “footprint,” and our fiber backbone stretches across 141,000 fiber route miles—that’s enough to wrap around the Earth more than five times. We have increased the speeds available over that network 12 times over the past 11 years, and we will continue to do so because our network is capable of evolving to meet all types of demand. This year, we demonstrated that our network is capable of delivering 3 Gbps.¹² And just last week, we successfully trialed the first 1 Terabit con-

³Verizon, News Center, LTE Information Center, <http://www.verizonwireless.com/news/LTE/Overview.html> (last visited Oct. 25, 2013).

⁴See Int’l Telecomm. Union, *Measuring the Information Society 2012*, at 88, available at http://www.itu.int/ITU-D/ict/publications/idi/material/2012/MIS2012_without_Annex_4.pdf (last visited Oct. 25, 2013); *International Broadband Data Report*, 27 FCC Rcd 9884 ¶33 (2012) (“The United States is ranked third out of 16 countries with an average price of \$0.76/GB.”).

⁵Richard Bennett *et al.*, ITIF, *The Whole Picture: Where America’s Broadband Networks Really Stand*, at 60 (Feb. 2013), available at <http://www2.itif.org/2013-whole-picture-america-broadband-networks.pdf> (“The Whole Picture”). By way of comparison, the United States’ urbanicity score was 5.2, as compared with South Korea, which has an urbanicity score of 67.1. *Id.*

⁶See Akamai, *The State of the Internet*, at [Khttp://www.akamai.com/dl/documents/akamai_soti_q213.pdf?WT.mc_id=soti_Q213](http://www.akamai.com/dl/documents/akamai_soti_q213.pdf?WT.mc_id=soti_Q213) (last visited Oct. 25, 2013).

⁷*The Whole Picture* at 17.

⁸USTelecom, *Broadband Industry Stats, Broadband Investment*, at <http://www.ustelecom.org/broadband-industry/broadband-industry-stats/investment> (last visited Oct. 25, 2013).

⁹Broadband for America, Blog, “Broadband Investment from Trade Groups Tops \$250 Billion,” <http://www.broadbandforamerica.com/blog/broadband-investment-trade-groups-tops-250-billion> (May 19, 2011).

¹⁰Diana G. Carew & Michael Mandel, Progressive Policy Institute, *U.S. Investment Heroes of 2013: The Companies Betting on America’s Future*, at 5 (Sept. 2013), available at http://www.progressivepolicy.org/wp-content/uploads/2013/09/2013.09-Carew-Mandel_US-Investment-Heroes-of-2013.pdf.

¹¹*Id.* at 2.

¹²See News Release, Comcast Corp., “The Future of Broadband Speed and 4K Ultra HD Video” (June 11, 2013), at <http://corporate.comcast.com/news-information/news-feed/comcast-demonstrates-the-future-of-broadband-speed-and-4k-ultra-hd-video>.

nection on a portion of our network from Ashburn, Va. to Charlotte, NC.¹³ This is believed to be the first trial in which live data traffic was carried at this speed on an existing, commercial network.¹⁴ All this is possible because of the investment that I mentioned earlier. We do not sit still; the marketplace simply will not allow it.

I certainly would not claim the deployment picture is perfect. While nearly all Americans have access to satellite broadband,¹⁵ which provisions speeds as fast as 25 Mbps,¹⁶ more wireline and wireless broadband deployment is needed in remote parts of rural America.¹⁷ We should not downplay the geographical and logistical challenges of addressing this problem, and we need to be more focused on facilitating creative technology solutions.¹⁸ But, on the whole, the speeds and range of choices available to the vast majority of Americans are light-years beyond what anybody reasonably would have anticipated just 10 or 15 years ago. This is great news for our country.

II. Broadband Adoption Has Skyrocketed, But Many Americans Are Still on the Wrong Side of the “Digital Divide”

The key to empowering Americans through access to the Internet is to persuade them that adopting broadband is worth their time, effort, and money. We have come a long way in the last 20 years. In 1996, just a small percentage of Americans accessed the Internet from their homes,¹⁹ and the vast majority of those who did used dial-up connections. Thankfully, we have moved beyond the slow speeds available over dial-up and have widely adopted broadband. Today, according to surveys conducted by NTIA and the Pew Research Center, about 70 percent of Americans subscribe to wired broadband.²⁰ Millions more have tablets and smartphones that use mobile wireless connectivity to access a wide range of Internet services for work and pleasure.²¹

But there is much more work to be done. Too many Americans do not yet enjoy the benefits of broadband Internet access. A broadband adoption rate of around 70 percent means that there are still about 30 percent of Americans who do not subscribe to a fixed broadband Internet connection at home (and only about one-third of this group has Internet access via a smartphone).²² More troubling still, clear di-

¹³ See News Release, Ciena Corp., “Comcast Conducts Industry’s First Live 1Terabit Network Trial with Ciena’s 6500 Converged Packet Optical Solution” (Oct. 22, 2013), at <http://www.ciena.com/about/newsroom/press-releases/Comcast-Conducts-Industry’s-First-Live-1Terabit-Network-Trial-with-Cienas-6500-Converged-Packet-Optical-Solution.html>.

¹⁴ *Id.*

¹⁵ *Connecting America: The National Broadband Plan*, FCC, at 137 (rel. March 16, 2010), <http://download.broadband.gov/plan/national-broadband-plan.pdf> (“National Broadband Plan”).

¹⁶ See Exede Internet, Internet Packages, at <http://www.exede.com/internet-packages-pricing/service-availability> (last visited Oct. 25, 2013).

¹⁷ See Section 706 Fixed Broadband Deployment Map/FCC.gov, at <http://www.fcc.gov/maps/section-706-fixed-broadband-deployment-map> (last visited Oct. 25, 2013).

¹⁸ There are promising proposals and initiatives underway in this regard. See, e.g., Ben Leubsdorf, “UNH to test ‘Super Wi-Fi’ technology that could expand broadband access in rural areas,” *Concord Monitor*, Sept. 24, 2013, available at <http://www.concordmonitor.com/news/politics/8640947-95/unh-to-test-super-wi-fi-technology-that-could-expand-broadband-access-in-rural-areas>; Richard Bennett, “Public-Private Partnerships will Close Rural Broadband Gap,” *Billings Gazette*, Aug. 7, 2013, available at http://billingsgazette.com/news/opinion/guest/guest-opinion-public-private-partnerships-will-close-rural-broadband-gap/article_0add8e93-4478-5ec7-897e-aff16bc406a2.html.

¹⁹ See Pew Internet—Trend Data (Adults), Internet Adoption, 1995–2013, at [http://www.pewinternet.org/Trend-Data-\(Adults\)/Internet-Adoption.aspx](http://www.pewinternet.org/Trend-Data-(Adults)/Internet-Adoption.aspx) (last visited Oct. 25, 2013).

²⁰ See Pew Research Center, Home Broadband 2013 (Aug. 26, 2013), available at http://pewinternet.org/-/media/Files/Reports/2013/PIP_Broadband%202013_082613.pdf (“Pew Home Broadband 2013”); Nat’l Telecomm. & Info. Admin., “Exploring the Digital Nation: America’s Emerging Online Experience,” (June 7, 2013) at http://www.ntia.doc.gov/files/ntia/publications/exploring_the_digital_nation_-_americas_emerging_online_experience.pdf (“Approximately 69 percent of households used broadband Internet at home (72 percent if including dial-up) in July 2011.”). Pew’s data show that, except for just one year between 2010 and 2011 when we think general economic factors played a role, broadband adoption has increased every year by an average of over five percentage points.

²¹ See Pew Research Center, Tablet and E-Reader Ownership Update, at <http://pewinternet.org/Reports/2013/Tablets-and-e-readers.aspx> (Oct. 18, 2013) (“The number of Americans ages 16 and older who own tablet computers has grown to 35 percent.”); Pew Research Center, Smartphone Ownership—2013 Update, at 2 (June 5, 2013) available at http://pewinternet.org/-/media/Files/Reports/2013/PIP_Smartphone_adoption_2013_PDF.pdf (“56 percent of American adults are now smartphone owners”).

²² *Pew Home Broadband 2013* at 4.

visions have emerged between the broadband “haves” and “have-nots.” Starkly different broadband adoption rates are evident across educational, racial, ethnic, socioeconomic, and geographic lines. For example, the Pew Research Center tells us that 74 percent of White Americans have high-speed broadband connections at home, but only 64 percent of African Americans and 53 percent of Hispanic Americans have high-speed broadband.²³ In addition, one of the most important determinants of low adoption is education—only 37 percent of Americans without a high school diploma have adopted broadband, while college graduates have an 89 percent adoption rate.²⁴ So, nearly two decades after then-Representative Ed Markey warned about the “digital divide,” we still have one.

Doing something about the persistent adoption gap requires understanding the root causes. Rigorous survey-based analysis over the past several years has established that the main reasons why a large portion of Americans do not adopt broadband are a lack of digital literacy, a lack of understanding of the value of the Internet, and a belief that the Internet is not relevant to their lives. The National Broadband Plan found that nearly half—41 percent—of broadband non-adopters cited either a lack of digital literacy or a lack of perceived relevance as the main reason for non-adoption.²⁵ Only 15 percent of respondents cited the cost of a monthly broadband subscription as the most important reason for not adopting broadband, with another 10 percent pointing to the cost of a computer. In its latest survey, Pew reported similar results, finding that only 9 percent of Americans who do not go online at home cited the expense of the Internet connection as the reason for not doing so.²⁶

So, we know what the problems are. Now we—private sector and public sector alike—need to muster our collective resources to address them.

III. Comcast Developed the Internet Essentials Program to Address and Overcome Many of the Key Obstacles to Broadband Adoption

Comcast has long been committed to addressing the challenges to broadband adoption. One of the earliest cable industry efforts was a program known as Cable in the Classroom, which brought the first Internet connections to many American schools for free, and promoted the responsible and effective use of cable’s broadband technology, services, and content in teaching and learning. The cable industry has connected thousands of schools and libraries to the Internet under this program.

Since 2009, we have supported the Comcast Digital Connectors program, which gives young people, primarily from diverse, low-income backgrounds, the opportunity to develop their skills in using computers, applications, and the Internet. Almost 2,000 youth have graduated from this program, contributing 100,000-plus hours of service in their communities. We also support the Boys & Girls Clubs of America’s “Club Tech” program, which provides young people with access to technology, software, curriculum, and training, helping to better prepare them for success both in their educational endeavors and work careers. We support Club Tech at more than 2,000 club locations across the country, serving about 500,000 students each year.

In 2011, we took our efforts to the next level. As part of our acquisition of NBCUniversal, we offered up a voluntary commitment to launch a low income broadband adoption program, and that commitment was adopted in the FCC Order approving the NBCUniversal transaction. That commitment has grown into Internet Essentials, which is the Nation’s largest and most comprehensive broadband adoption program and is specifically designed to systematically address the primary barriers to broadband adoption that have been identified in the National Broadband Plan and subsequent survey results.

Since its launch almost 24 months ago, Internet Essentials has made broadband Internet accessible to millions of low-income families across the Comcast footprint for \$9.95 per month—with no charge for the cable modem, no installation charge, no contract required, and no obligation to buy any other Comcast service. In addition to affordable broadband, Internet Essentials gives eligible families the opportunity to purchase an Internet-ready computer for under \$150, heavily subsidized by Comcast. The program also includes a comprehensive digital literacy training

²³ *Id.* at 3.

²⁴ *Id.*

²⁵ John B. Horrigan, OBI Working Paper Series No. 1, *Broadband Adoption and Use in America*, at 5 (rel. Feb. 2010), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296442A1.pdf.

²⁶ See Pew Research Center, *Who’s Not Online and Why*, at 12 (Sept. 25, 2013), available at http://pewinternet.org/~media/Files/Reports/2013/PIP_Offline_percent20adults_092513.pdf. Although that Pew study looked at Internet use, which is slightly different from at home adoption, it does show that affordability is not the main driver.

component—in print, online, and in person—designed to empower students and their parents to unlock the full potential of the Internet.

We have been relentless in getting the word out about the program. We have distributed 27 million brochures, in 14 different languages, to school districts and community partners. We have fielded 1.5 million phone calls in our Internet Essentials call center, and we have had 1.2 million visits to the Internet Essentials websites in English and Spanish. We also have broadcast nearly two million public service announcements with the help of well-known and respected public figures like Super Bowl-winning coach Tony Dungy, and numerous governors, mayors, school superintendents, and community leaders from across the country who are committed to ensuring that all of their students have the opportunity to connect to the Internet at home.

Comcast's extensive partnership with a diverse array of leaders from the education, government, and non-profit sectors across the Comcast service area continues to be a cornerstone of the Internet Essentials program's success. Over the past three years, we have worked hard to engage school administrators, teachers, and parents in the more than 30,000 schools in more than 4,000 school districts across the Comcast footprint to promote Internet Essentials to eligible families, including distributing brochures with their National School Lunch Program ("NSLP") letters and report cards, providing presentations to school stakeholders, and attending numerous back-to-school nights and parent-teacher association meetings.

Comcast also has worked with thousands of community-based organizations, faith-based organizations, libraries, and educational associations, such as the National Urban League, the League of United Latin American Citizens, and the National Council of La Raza, to spread the word about Internet Essentials, to create and foster an atmosphere of support and excitement about Internet Essentials, and to share "best practices" with each other to improve both the program and our communications. Finally, state, local, and Federal officials, including members of this Subcommittee, serve an important role in educating their constituents about the importance of broadband and helping them to find programs like Internet Essentials.

We are proud of the results. As I mentioned earlier, in the first 22 months of the program, we connected more than 220,000 families, totaling more than 900,000 low income Americans, to the power of the Internet at home—many for the first time. We have sold 18,000 subsidized computers at an affordable price point. And 20,000 people have attended free, in-person digital literacy training.

We are also tremendously encouraged by data we have compiled based on surveys of the families who have signed up for the program. In particular:

- 90 percent of Internet Essentials customers surveyed are "highly satisfied" with the service, and 98 percent of those surveyed would recommend Internet Essentials to others.
- 85 percent of respondents said they use Internet Essentials to go online on a daily basis.
- More importantly, 98 percent of survey participants reported that their school-age children used the Internet Essentials service for school assignments, and of that group, 94 percent felt Internet Essentials had a positive impact on their child's grades.
- Other popular uses included general research (94 percent), e-mail (85 percent), social networking (73 percent), health care and government services (66 percent), online bill payment (60 percent), and employment searches (58 percent). The majority of those who said they used Internet Essentials for employment searches felt that the program helped someone in the household locate or obtain a job.

We have learned a lot over the first two years of the program, and we have made improvements based on our direct interactions with families. In fact, at this point, the program has gone far beyond the original commitment we made in connection with the NBCUniversal transaction. For example, we initially designed the program only for families that have at least one child eligible for a free school lunch through the NSLP. Last year, we extended eligibility to families eligible to receive NSLP reduced-price school lunches, making 300,000 additional families eligible for the program. This year, we expanded eligibility yet again, to include families with private, parochial, and home-schooled students who otherwise meet the NSLP eligibility criteria. This enhancement made nearly 200,000 additional families eligible for Internet Essentials in Comcast's service areas—bringing the total to nearly 2.6 million eligible families.

We also improved the service we are offering as part of the program. When we launched the program we offered a 1.5 Mbps downstream connection, but last year

we raised that to 3 Mbps, and this year we raised it again, to 5 Mbps, all without raising the price.

And we continue to find ways to make the process easier and faster for qualified families to enroll. For example, we recently expanded the instant approval process for families whose students attend schools where 70 percent or more of the students are eligible to participate in the National School Lunch Program.²⁷ We also have set up an online application request form, which is available in both English and Spanish and can be accessed through any Internet-connected computer (at recreation centers, libraries, and public computing labs, for example), or on tablets or smartphones. In addition, we have implemented innovative measures such as Internet Essentials Opportunity Cards, so Comcast's non-profit partners and others can purchase up to a year of Internet Essentials service for qualified families. We are confident that these changes will make Internet Essentials even more attractive to families, allowing us to bring the benefits of the Internet to even more people—and, importantly, more children.

IV. A Comprehensive Solution to the Adoption Problem Must Involve Efforts from All Stakeholders

We designed Internet Essentials to address the key barriers to adoption. It has been a remarkable success, but our on-the-ground experience has shown that improving broadband adoption in these communities is more complicated than just addressing relevance, digital literacy, and price. We have found that solutions must address the impact of poverty, education, and a range of other deep socioeconomic problems that are at the heart of the non-adoption issue. This is why we believe that *all* stakeholders in this area must work together to more effectively bridge the digital divide. The fact remains that no one company and no single program will completely close the digital divide in America. The challenges are certainly daunting, but progress is being made, and will continue to be made if we all make this a priority.

The education space is one area where several key broadband adoption initiatives deserve our attention and support. Internet Essentials is targeted to homes with school-aged children purposefully. As a nation, we must recognize the importance of an educated and technologically literate work-force ready to compete in the economy of the 21st century. In many homes, it is often children who first develop digital skills and understand the relevance of broadband to their lives and education. Once children gain these skills, they are able to demonstrate the benefits of broadband adoption to others in their households and communities. All of this helps increase digital literacy and reduce the apprehension about technology and broadband for both children and adults.

Broadband at school complements broadband at home. We must all work together to ensure America's classrooms have access to the advanced broadband networks that will support a modern digital learning environment.²⁸ To that end, we share the ConnectED vision that “our schools [must be] an integral part of the broadband and technology transformation” to ensure that students “can benefit from these advances in teaching and learning.”²⁹ And I would be remiss not to highlight this Committee's vision and role in identifying the critical need to connect schools almost twenty years ago. Chairman Rockefeller and former Senators Olympia Snowe, Jim Exon, and Bob Kerrey all deserve enormous credit for the E-rate program, as does the Senator from Massachusetts, Mr. Markey, who championed this cause while in the House of Representatives.

Over the past two decades, the E-rate program has succeeded in ensuring that many elementary and secondary schools have access to basic Internet connectivity at discounted rates.³⁰ However, as Senator Rockefeller noted earlier this year, “basic

²⁷ Previously, only families whose students attended schools where 80 percent or more of the students are eligible to participate in the National School Lunch Program could take advantage of the instant approval process.

²⁸ *ConnectED: President Obama's Plan for Connecting All Schools to the Digital Age*, The White House, at 2, (June 6, 2013) at [Khttp://www.whitehouse.gov/sites/default/files/docs/connect-ed_fact_sheet.pdf](http://www.whitehouse.gov/sites/default/files/docs/connect-ed_fact_sheet.pdf) (“Our schools were designed for a different era. . . . This system does not take into account the constant learning opportunities of global connectivity[.]”).

²⁹ *Id.* at 1–2.

³⁰ See, e.g., News Release, FCC, *FCC Launches Modernization of E-Rate Program to Deliver Students & Teachers Access to High-Capacity Broadband Nationwide*, at 1 (July 19, 2013), available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0719/DOC-322284A1.pdf (“Over the past 15 years, support provided by the E-rate program has helped revolutionize schools' and libraries' access to modern communications networks, but the needs of schools and libraries are changing.”).

Internet connectivity is no longer sufficient.”³¹ Today’s educational environment requires not only the delivery of broadband Internet service to schools, but also the deployment of the infrastructure within the school, such as through robust Wi-Fi networks, in order to meet the digital needs of each classroom.³² A modernized E-rate program can help achieve these goals in a cost-effective and efficient manner.

In 1996, we could talk about connected learning in terms of the school. When it comes to learning in the digital age, however, we need an integrated, always-on digital learning platform that delivers improved educational outcomes for every student—a continuum of connectivity. It begins in the classroom and throughout the school with access to an array of digital learning tools, but then follows the child to after-school programs at public libraries, recreation centers, and other community centers, and ends with at-home broadband. If we want our children to succeed in this complex and connected world, it really will take a coordinated effort to create these types of continuous digital communities.³³

Indeed, high-speed broadband Internet access throughout the day can enrich curricula and enhance the learning process by permitting students to use digital textbooks, work on multimedia projects, stream educational video content, conduct Internet-based research, take online courses that are not locally available, and interact with content experts around the world or right next door.³⁴ And when we extend the broadband experience to the home, it even enhances the involvement of parents in their children’s education. These digital tools can improve learning outcomes for our Nation’s students and prepare the next generation for success in an increasingly competitive digital world.³⁵ This only underscores the importance of today’s topic and how we need to keep working harder to ensure that all Americans have access to broadband at home.

The efforts that those of us in this space have undertaken thus far are certainly commendable, but they are only a piece of the overall solution to the adoption gap. The focus needs to remain on increasing Americans’ adoption of broadband at home, so that families can benefit from the innumerable benefits of the Internet. The existing obstacles to adoption cannot be eliminated with any magic bullet. We look forward to working with *all* stakeholders—within the broadband industry and in other sectors—to address the complex problems that remain.

V. Conclusion

America’s broadband past has been truly remarkable, and the future of broadband is even brighter. Our infrastructure keeps getting faster and better, as industry con-

³¹See Press Release, U.S. Senate Committee on Commerce, Science, and Transportation, *Rockefeller Says E-Rate Should Expand to Connect More Students to High Speed Broadband* (June 6, 2013), available at http://www.commerce.senate.gov/public/index.cfm?p=PressReleases&ContentRecord_id=5cb24ad3-281e-4abd-acd0-afb699008e3e&ContentType_id=77eb43da-a94-497d-a73f-5c951f72372&Group_id=4b968841-3e8-49da-a529-7b18e32fd69d&YearDisplay=2013. See also, *Modernizing the E-Rate Program for Schools and Libraries*, 28 FCC Rcd. 11304 (2013) (Statement of Commissioner Jessica Rosenworcel) (“[W]e are quickly moving from a world where what matters is connectivity to a world where what matters is capacity.”).

³²See Comments of Comcast Corporation, WC Docket No. 13–184, at 9–10 (Sept. 16, 2013). As Comcast has explained, more spectrum needs to be provided for unlicensed use “[i]n order to ensure that students get the full capabilities of the underlying wired broadband connection the Commission intends to support.” *Id.* at 20.

³³To foster the development of these types of digital communities, earlier this year Comcast and the City of Chicago announced the development of Internet Essentials Learning Zones, a concept that Comcast is now implementing in other Internet Essentials communities. See News Release, Comcast Corp., “Mayor Emanuel, Comcast Announce that Chicago’s Internet Essentials Enrollment Doubles to 14,000, More Than Any Other City in the Nation” (Sept. 16, 2013), available at <http://www.businesswire.com/news/home/20130916006076/en/Mayor-Emanuel-Comcast-Announce-Chicago%E2%80%99s-Internet-Essentials> (“The zones will help bridge the digital divide and extend learning beyond the school day by connecting the dots between Comcast, the United Way, the Smart Chicago Collaborative, participating community organizations and school-based leaders, all of which will work in partnership to enhance access to broadband and provide technology training beyond school walls.”).

³⁴See generally *The Broadband Imperative: Recommendations to Address K–12 Educational Infrastructure Needs*, State Educational Technology Directors Association (rel. May 21, 2012), at <http://www.setda.org/web/guest/broadbandimperative> (“SETDA Broadband Imperative Report”).

³⁵See, e.g., *National Broadband Plan* at 226 (“Broadband can be an important tool to help educators, parents and students meet major challenges in education.”); U.S. Dept. of Education, Press Release, *Statement from U.S. Education Secretary Arne Duncan on FCC Action to Connect More Students to High-Speed Internet* (July 19, 2013), at <http://www.ed.gov/news/press-releases/statement-us-education-secretary-arne-duncan-fcc-action-connect-more-students-hi> (“The U.S. once led the world in connecting our schools to the Internet, but our strongest international competitors are surging ahead of us because they know that giving students and teachers the right tools is vital to their economic strength.”).

tinues to invest in innovative new technologies, expand network deployments, and increase speeds. Consumers' choices have never been greater.

While adoption continues to grow, it is not at an acceptable pace, and certain populations are still at a danger of being left behind. *Every American must have the opportunity to participate in the wonders and practical benefits of the Internet.* Making this a reality begins with a firm understanding of why these people are not using the Internet, and acting based on sound information to get the most return on our public policy investments.

In particular, we need to continue public and private efforts to promote awareness of the social and economic benefits of the Internet, and to accelerate the development of digital literacy and computer skills. We need to continue efforts to get low-cost computer equipment into the homes of those who don't currently have it. We need to update and revitalize the E-Rate program to ensure that our classrooms have the bandwidth necessary to take advantage of the digital learning platforms that will prepare our children for the digital economy of the 21st century. Finally, we need to continue to educate families about the availability and benefits of programs like Internet Essentials, so their children are connected at home just as they are at school.

Comcast is working hard to do our part, and we're partnering with thousands of elected officials and community organizations to do so. I look forward to working with members of this Subcommittee on this important challenge. Comcast is firmly committed to engaging with Congress, the Administration, the FCC, and stakeholders from across all relevant industries to ensure that no American is left behind as we stride boldly into our exciting future.

Thank you for the opportunity to testify today.

Senator PRYOR. Thank you. And congratulations on your millionth customer. That's big news.

Let me, if I may, start with Senator Sununu, and what we'll do is 5-minute rounds here, and I'll try to actually keep my first couple short so that we can get to our other colleagues.

But, Senator Sununu, I know that one of the things you are concerned about is the Internet tax moratorium. And tell us how you think lifting that moratorium—in other words, adding a tax to the Internet—how you think that might hurt adoption rates.

Senator SUNUNU. Well, I think it's basic economic fact, when you tax something, you get less of it. So, you tax something, you raise the price; you tax something, you make it a little less attractive to invest; you tax something, you make it a little less attractive to put money behind the kind of deployment and access and, ultimately, adoption that we're talking about. So, we want to make sure that this infrastructure is as economically sound and robust as possible, and I think it certainly helps to prevent, not just the Federal Government, but states, cities, towns, all from being able to tax it.

I—and I'll draw an analogy to the wireless industry, where this was a path that wasn't taken, and anyone can look at their wireless bill and look—as a result, there are local taxes, State taxes, Federal taxes that do affect the economic viability and the economic incentive to continue investment.

Senator PRYOR. Right. You mentioned, in your testimony, that you like the, quote, "light touch regulatory approach," which doesn't surprise me, knowing you. But, what else can Congress do, or not do, that will help increase adoption rates?

Senator SUNUNU. Well, in terms of the light touch regulatory approach, I mean, it's sort of a simple phrase, but I think it's a meaningful one. That was an intentional approach that really began under President Clinton. It has been largely followed by Congresses, by the FCC, and by administrations ever since. You know, things that might be done that would certainly hinder investment

and innovation are regulations regarding the packaging, pricing and distribution of broadband services.

David Cohen just talked a great deal about the evolution of the Internet Essentials Program. It's something that's changed over time and over the years, and there's no question that the private sector has much greater flexibility when it comes to innovation and packaging. And it's especially important now, frankly, within the broadband industry, as consumer habits are changing dramatically. Right? Where they access broadband—is it wireless, is it wired, is it for content, is it for information, is it for education, is it for entertainment? Being able to innovate and try different approaches in order to encourage the adoption we're talking about is very, very important.

On the “What can government do that's helpful?” I'd just allude to, and let others expand on, the work that's been done by—within government—FCC and NTIA, and looking at that adoption toolkit, and highlighting the issues of perception and skills relevant to access and cost, as NTIA did, and then look for those partnerships, because everyone is challenged in a different way—communities, families, urban versus rural—and so that the way that you approach adoption in one particular part of the country or one particular demographic is going to be different. And so, you need to identify the problem you're trying to address, come up with a partnership that can address that problem.

Senator PRYOR. OK. Thank you.

Mr. Cohen, I just have a minute left. Let me ask—you talked about your Internet Essentials Program, which sounds like it's a great success for the company and for your customers. You also talked about your idea of a continuum of connectivity. And I know that, as part of this—and you mentioned it in your testimony—you're doing digital literacy training for thousands of people in your communities. And do you see an increase in adoption rate after these folks have that digital literacy training?

Mr. COHEN. So, this is one of the great struggles, and we do try and survey our Internet Essentials customers about this. And I don't think we have enough data yet for us to be able to demonstrate that digital literacy training increases adoption. But, all the data we've looked at, whether it's from the FCC or from Pew, is crystal clear that, to the extent families understand the Internet and understand the value of it and what it means, this does increase adoption. And it's one of the reasons we've focused on this school-aged population. The eligibility for Internet Essentials is having a child living in your household who's eligible to participate in the National School Lunch Program, because this is an interesting technology, in the sense that adoption may well be driven by young people because they understand the importance. They see other kids in their class going home and doing homework on the Internet. So, they may drive adoption for their parents and for their grandparents.

And anecdotally, I can tell you that I have absolutely seen dozens of those stories, where parents have said, “We didn't understand this until we heard about this from our children, from the teachers in the school, how important the Internet was and it wasn't just for playing games and for Facebook.”

So, I think it's pretty clear that the digital literacy barrier here is a big one and it's a complicated one. And I do think—as Ms. McPeak said, there's a real role for the government in this space. I think it's an educational component, and I think the FCC and NTIA have helped to shine a spotlight on this and facilitate digital literacy training, and that, in the longrun, that is going to drive adoption.

Senator PRYOR. Good. I'll ask you about E-Rate in a few moments, but I want to first turn it over to Senator Wicker.

Senator WICKER. Thank you, Mr. Chairman.

And, Mr. Cohen, let me join our Chairman in congratulating you on your announcement of your one millionth person. I understand you've gone above and beyond the conditions imposed on you by the merger with NBCUniversal. Let me just ask you to comment on some testimony from Ms. McPeak.

She advocates a setting of goals, and one of the things that struck me is, affordable broadband offers are required to increase adoption among low-income households. This is likely to require an affordable broadband lifeline rate program. Would you comment about your opinion concerning such a program?

Mr. COHEN. So, I agreed with almost everything in Ms. McPeak's testimony, and you found the one paragraph that I probably—

Senator WICKER. That's my job.

Mr. COHEN.—don't fully agree with. So, congratulations.

[Laughter.]

Mr. COHEN. Now, for our company, I think we've demonstrated that a governmentally-designed and governmentally-regulated program is not the best way to go. And my concern would be that if you created a government-regulated rate-set Lifeline program, that what you'd have is a government-regulated, rate-set program, but you wouldn't have anything to deal with the cost of computers, you wouldn't have anything to deal with digital literacy, you wouldn't have anything to deal with helping to drive adoption through community partners. The success of Internet Essentials has been based on this holistic approach and, quite frankly, the commitment of this company to doing what's right to drive adoption. And we've created that web of partnerships with community that Ms. McPeak talks about. And I can't underscore enough how important that is to be able to drive adoption.

And if you try to regulate and, through government intervention, try and hit only one element of this equation, I don't think you'll end up with a successful program. I think encouraging the rest of the private sector or others in the private sector—and Senator Sununu noted, we're not in this alone; we have AT&T and Time Warner Cable and Suddenlink and Cox that all run programs—and I think encouraging those programs and encouraging the holistic approach of private sector, government, nonprofit sector, school boards, libraries, faith-based community to work together to drive adoption is the secret sauce that is going to move this needle.

Senator WICKER. Ms. McPeak, what do you say to that? Sounds pretty good.

Ms. McPEAK. Mr. Cohen is personally very passionate and dedicated, and Comcast has done better than any other company. What

David just said is that you need this very holistic, integrated approach. It's exactly what my testimony says, and spells it out.

What I said about setting a goal is really important. Comcast Internet Essentials is going to expire next year. With all of the effort that has been invested by Comcast, they have not reached more than 8 percent of the eligible recipients. So, 8 percent is not a success, when we have all of these people offline.

We recommend that, in order to sustain that, because affordability is an issue, access to a computing device is an issue—Comcast has, for all intents and purposes, really set the market, they've set the price point that will drive adoption. It needs to be a much fuller engagement of community-based organizations and digital literacy.

We do have the data. We got the 200,000 adoptions through working with NTIA because of digital literacy, and we go back and we survey and we know it is sustainable. We fully integrate the use of technology, broadband and computing devices, into teaching and learning in a program we call School2Home. It fully engages the parents as one of those key elements of turning around low-performing schools. The worst of the worst schools are getting better academic performance today with the use of the technology, largely because the parents can stay connected with their kids' homework, with the teachers. The technology allows them to overcome their inability to go to a teacher conference because they might work two jobs or they don't speak English. It really is the mechanism for engagement.

Senator WICKER. All without—

Ms. MCPEAK. And here's the data—

Senator WICKER.—all without a mandate.

Ms. MCPEAK. Pardon?

Senator WICKER. All without a government mandate.

Ms. MCPEAK. Absolutely. Absolutely.

But, let me, then, try to show the data and answer your question on why. Why does it become important to have at least either sustained partnerships—remember, I hit that over and over again. Any public investment that we make should be leveraged to the hilt, but partnerships between the Federal Government and states, between the private sector and public sector, and particularly providers in the community—it's that trusted messenger, that honest broker on the ground that makes a difference.

In our School2Home Program, after both integrating the technology into the teaching and learning and improving academic performance beyond the statewide average or the district average in the lowest performing schools, we find that. There is broadband adoption that increases for Spanish-speaking parents by 58 percent and by English-speaking parents by 12 percent. Those percentages that I just shared with you exceed all of the effort, in terms of adoption, that we have right now, in a voluntary sense.

If there is not, either through industry or through government, an affordable broadband offer beyond next year, we will hit the wall, and have in California, on broadband adoption. So, somehow we need to figure this out.

And our point is that, if the FCC, which is looking at an affordable broadband offer, makes that available, it should be with the

encouragement incentives to have the partnerships that Mr. Cohen and I have talked about.

Senator WICKER. Thank you.

Senator PRYOR. All right, thank you.

Let's see. Senator Klobuchar.

**STATEMENT OF HON. AMY KLOBUCHAR,
U.S. SENATOR FROM MINNESOTA**

Senator KLOBUCHAR. Thank you, Mr. Chairman. Thanks for doing this hearing.

And thank you, Senator Sununu, for coming back on this important topic.

And I really do appreciate the work that Comcast is doing in this idea of partnerships. But, Senator Wicker was noting that there was no mandate, but there has been a lot of government funding. And I was just looking at this, you know, \$4 billion alone out of the NTIA and the hope that we can use some more Universal Service funding for this. So, do you see, Ms. Wright McPeak, that we could just do this with the private sector?

Ms. McPEAK. Oh, I think that any public investment, whether it's at the Federal level or the state level or the local level—and nobody finds somebody that is more frugal than I am; they—everybody thinks I am actually much too frugal, and I come out of a business sense.

May I add that, on NTIA's broadband adoption program, it was \$450 million, so most of the funding in BTOP through ARRA was actually deployment, it wasn't adoption. So, it was modest, in the sense of an investment in adoption, which I think makes sense if we're trying to close the digital divide. We cannot be globally competitive with the 20, 30 percent of our citizens left behind in the Digital Age.

There are many ways to leverage partnerships. It begins with, "Can, in fact, the Federal Government connect dots in your own program, or programs?" May I suggest just a couple of examples? And it goes to, then, the partnership question.

The FCC funded pilots for Telehealth. There is now a \$400 million annual fund for the Healthcare Connect Fund for Telehealth. Over on HHS side, there is not an active pursuit of getting all federally qualified health centers or critical care hospitals or public health facilities onto a Telehealth network.

I gave you the example about education. It's not, today, the policy of the Department of Education to say every grant we put out should optimize the use of technology and computing devices.

The HUD does not require that publicly subsidized housing encourage the connectivity of broadband.

Those are examples.

When those kinds of policy dots are connected through the Federal Government and, on top of that, you say, "We want to give priority or incentives to those programs that have partnerships—partnerships with the state that align their efforts, partnerships with the private sector"—now we finally have optimized what Congress can do in directing broadband adoption.

Senator KLOBUCHAR. So, you say that, given that we still are clearly having issues with adoption, that—

Ms. McPEAK. Oh——

Senator KLOBUCHAR.—a few requirements here and there might make a difference.

Ms. McPEAK. It—but, what I——

Senator KLOBUCHAR. OK, I've got to—I want to move on to my hometown witness, here, but, would that be correct, that the requirement——

Ms. McPEAK. Yes, I am saying that.

Senator KLOBUCHAR.—should be helpful——

Ms. McPEAK. I am saying that.

Senator KLOBUCHAR.—whether you call them mandates or requirements?

OK. Ms. Jocelyn, thank you for coming, and thank you for your incredible work that you're doing with Blandin. At the end of McPeak's questions with Senator Wicker, she was talking about schools. And I think the numbers that I have here is that, according to the study by the Federal Reserve Board, graduation rates for students with computers at home are 6 to 8 percent higher than students without them.

Ms. JOSELYN. That's right.

Senator KLOBUCHAR. Your experience in Minnesota, especially on the tribal reservations, what have you seen when kids don't have computers?

Ms. JOSELYN. Well, thank you for the opportunity to address that question. In terms of the quality of education and having a level playing field for all children of America so that the quality of your educational experience is not dependent upon where you live, broadband is absolutely essential. And I can give you a specific example in our home county of Itasca County, up in north central Minnesota, where we have very small, spread out school districts that are the size of some States, and it's just not physically possible to offer the quality and breadth and depth of educational opportunities that are available in more urban centers. We are now, through availability of broadband access and adoption education efforts, to offer to our students a stunning array of educational opportunities that would otherwise be unavailable to them, including Ojibwe language training, physics, high level math, specific literature courses that, through a consortium effort, when school districts come together and use this technology platform, they are able to offer world-class educational opportunities that would otherwise be unavailable to our students. And we certainly believe, I'm sure, that, in our nation, we want equal opportunity for all. And growing up in a rural area should not prejudice your educational opportunity.

Senator KLOBUCHAR. Thank you. And the other thing I remember from those northern Minnesota counties is how, with so few people having the Internet access—and still a lot of them don't even have access, much—good access—is that the libraries became increasingly important, because there—literally would have waiting lines for people to try to apply for jobs. And I think that's something else we have to remember, especially—our state now is down to 5.1 percent unemployment, and yet a lot of people are having trouble getting trained for or accessing jobs. And I would like that, instead of having the brinkmanship we've been engaging in, in the

last few months, to be engaged in discussions about the workforce training and how we get people trained for the jobs so we can actually compete in the economy that's in front of us.

Ms. JOSELYN. Thank you.

Senator KLOBUCHAR. So, thank you.

Ms. JOSELYN. Thank you, Senator. And I would just add, if I may, that in Minnesota, we are program rich and systems poor. And part of what the Federal investment in this BTOP effort has allowed us to do is to align systems at the state level with community-based efforts, in partnership with the Federal Government. And the return on investment for our Nations and our children's future has been very impressive.

Senator KLOBUCHAR. Thank you.

Senator PRYOR. Thank you.

Senator Rubio.

STATEMENT OF HON. MARCO RUBIO, U.S. SENATOR FROM FLORIDA

Senator RUBIO. Thank you.

Thank you all for being here today. This is an incredibly important issue, I think, for the future of the country, even though it's not going to be on the headlines tomorrow morning. So, that's why I wanted to ask you.

So, if I went back home now—and I know the answer to this, although I'm not sure I can fit it on a bumper sticker—but, if I went home today and I explained to somebody, “This is a really important issue, 30 percent of the population has no access to broadband, and it's bad for the country, bad for our economy, and bad for them, for the folks that don't have access,” how would you say that I'm trying to figure out how I can make this issue more relevant to people, in terms of why it is that it's good for the country that we get more people to have access to broadband.

Mr. Cohen?

Mr. COHEN. So, Senator, I'll tell you, the two items that came out of our research on this that would be drivers to cause people to want to sign up for the Internet, one is almost a bumper sticker. Eighty percent of Fortune 500 companies today only accept job applications online. So, if you want to apply for a job—and it goes to what Senator Klobuchar was just talking about—you need to have access to the Internet to be able to apply for a job.

And the second, a slightly different population but I think equally compelling, is to peg this to educational achievement and attainment. Twenty-first century education today is vastly enriched by digital learning platforms, by digital curriculum that is offered in schools but that is integrally tied to being able to work on the Internet after school and at home, to enable parents to communicate with teachers, teachers with parents, to track what their kids are doing, what their strengths are, and what their strengths are not.

There's another Pew study which says that 79 percent of teachers today are assigning homework that requires access to the Internet out of school and after school to be able to do that homework.

So, if you want your kids to be competitive for 21st century jobs, to have 21st century job skills, you need to have Internet access at

home to be fair to your kids and enable them to keep up with other kids in their classrooms and other kids elsewhere in the state, in the country, and in the world.

I think those are two big motivating factors for parents: getting a job and educating your kids.

Senator RUBIO. So, now the number is 70 percent. And I would imagine there's some cohort out there that's never going to—for example, my mom is in her mid-80s. She's never going to be Internet savvy, for all the reasons you've outlined—but, that's not who we're talking about. Beyond that, what is a realistic goal for the country?

So, if we said—and obviously it's a different issue, but, you know, when President Kennedy said we'd be on the Moon by 1969 and return someone safely—what is a realistic goal for 5 years, 10 years from now, in terms of the number—the percentage of Americans that we would have, beyond the 70 percent?

Ms. McPEAK. I can share with you what we have said in California, which is 80 percent by 2017. Eighty percent adoption, statewide—

Senator RUBIO. By 2017?

Ms. McPEAK. 2017. And no one region and no one demographic group less than 70 percent. And we started really low. I mean, we were at 55 percent nation—statewide. Low-income families were at 33 percent.

Senator RUBIO. And then I guess my last question is—obviously, I've heard, or read, basically in all of your testimony, about the need for a multifaceted plan, that there's not one singular thing that we can do to move people, to get those numbers up. It will require a host of different issues. Probably the most interesting one—and I forget whose testimony it was; I read them all—was how—and this is the one issue where it's the children and the younger, you know, Americans that are bringing the rest of the family in, in some way, shape, or form.

So, I guess going back to—on the educational front—it's one of the things I'm really interested in, how we can incentivize Internet literacy. I mean, if you're talking about teaching kids things that are relevant for the 21st century, it is unimaginable that one of—that you could have an educational system that isn't teaching Internet literacy and technology literacy as part of a curriculum that is relevant to the 21st century.

A lot of the focus we have here as policymakers is on infrastructure. I think that's important, too. And I think I'm really interested in wireless, for a second, because I think that we've focused a little bit today on access at home, but we're an increasingly mobile society, not just in how we live our lives, but, you know, the equipment that we use to access the Internet.

In full disclosure, nowadays I very rarely go online on a laptop; it's always on a mobile device. And I think a growing number of Americans are going to find themselves in that position. Hence, these wireless networks are incredibly important. And, to that, the availability of competition in broadband is a key part of it.

And again, when I describe that to people and I talk about broadband, their eyes glaze over a little bit, because no one's made the connection. But, how critical is that, the wireless component?

Mr. COHEN. First of all, I do think wireless is important, and I include in wireless Wi-Fi, just so we're clear. But, I do think devices are increasingly mobile. And, by the way, even if you don't use a laptop, I think we could do a show of hands of how many people use a wireline connection even when they are using a laptop, because even people using a laptop are most frequently on wireless or Wi-Fi or some wireless technology.

So, I do think wireless is important. And Senator Pryor I actually referred briefly, in my oral statement, to the fact that we need innovative solutions to deal with the deployment gap. And I think technology is increasingly going to be the way in which we reach the millions of Americans who don't have broadband deployed to them. Because I think wireless deployment may well be less expensive, more capable—more capable of closing that gap in a more efficient and a faster way. So, I think a variety of wireless technologies is going to be very important to closing the deployment gap, and having—allowing people to have wireless access to their broadband connection is very much going to be a part of society, going forward.

I'm sorry, Senator, I just have to say one thing. This comes more anecdotally, in discussions with teachers, with parents, et cetera. It is still really hard to write a term paper on even a tablet. One of my horrible—

Senator RUBIO. That's true.

[Laughter.]

Mr. COHEN.—stories is that I met a mother in Atlanta who was signing up for Internet Essentials, and she came up to me, crying, thanking me for the program. And I said, "You're very welcome." And she said, "Mr. Cohen, you don't understand what a difference this is going to make in our lives." And I said, "What do you mean?" She says, "I"—she had two kids. She says, "I'm deeply committed to their education. We couldn't afford Internet at home. I do have a smartphone from work. And what I used to do is, 4 nights a week after dinner, I would drive to a McDonald's and park in the parking lot, where they have free Wi-Fi, and I would hand my smartphone into the backseat, and my kids would share the smartphone and do as much of their homework as they could."

Senator RUBIO. Yes.

Mr. COHEN. But, you can't—and she said, "You can't write a term paper on a smartphone."

Senator RUBIO. And that's just an indication—I don't write a lot of term papers these days.

Mr. COHEN. Right. So, I just—

Senator RUBIO. But, all my kids are working off—

Mr. COHEN. Right. So, all I'm saying is, I think—

Senator RUBIO. No, that's true.

Mr. COHEN.—it goes, really, again, to the integrated needs, here, that you have to cross the entire spectrum and have deep partnerships and have multiple technologies and multiple ways for people to be able to access the Internet, just like all of us have.

Senator RUBIO. Right.

Senator PRYOR. Thank you.

Mr. Cohen, let me follow up with that a little bit. You mentioned technology may be the solution. And obviously, your company has

seen a rapid change in technology, rapid development. And you guys have been an innovator there. But, also, I was going to ask about E-Rate for our schools. And it kind of goes back to what you were saying a moment ago, with the story—this anecdotal story you had in Atlanta.

But, the FCC currently is looking to update the E-Rate program. You know, I personally feel like it's been pretty successful. But, they want to look at it and evaluate it and see if they can make it better, maybe expand it. And I'm curious about your thoughts about should we try to find ways to get more E-Rate dollars and make those available to schools, and even libraries?

Mr. COHEN. OK. So, a really important question—and if I could pair the FCC's E-Rate proceeding with the President's ConnectED initiative, because I actually think they're related to each other. Obviously, the President announced a goal—he was listening to Ms. McPeak—and said that 99 percent of the schools in America should have ultra-high speed Internet connections within the next 5 years. And I think that's an important goal, because, with the digital learning platforms that are out there, I think it is essential that all of our schools have the capacity to be able to offer the educational enhancements within the school to all students in this country, regardless of the communities where they live.

E-Rate has obviously been the primary funding mechanism for Internet connections to schools and to libraries. And so, I think the FCC's recent proceeding to looking at the E-Rate program and to ask the question how is it working? How could it be retooled? What are improvements that could be made in the program?—will be essential to accomplishing the objectives that are set forth by the President in the ConnectED initiative.

Now, I'm not a critic of the E-Rate program. I would agree with you that it has done a lot of good in this country. But, it has been around for a long time. And it was created, quite frankly, in a time where a completely different set of technologies ruled. And so, we're very supportive, as a company, of that proceeding and think that there are enhancements that could be made to the program.

I'll just note one issue, because I know we're in a tight time-frame, but I'm happy to come back to it. I think the most critical item that I would focus on around the educational aspects of technology is that it's important, not only to bring ultra-high speed Internet service to the school, but to disseminate that service throughout the school. So, it's not enough—I mean, Comcast delivers, to thousands of schools, 100-meg-plug connections of Internet, yet we know, in most of those schools, that service is not being disseminated throughout all the classrooms in that school. Maybe it goes to the central office or computer lab, maybe there to two or three computer labs, maybe to a small pocket of classrooms. But, if you're going to accomplish the educational attainment objectives, which is what we're all interested in—we're not interested in connectivity for connectivity's sake; we're interested in improving student achievement, improving graduation rates, improving the delivery of 21st-century skills—you've got to disseminate that high-speed data service throughout the school.

In the current E-Rate program, Internet connections to the school are known as Tier 1, and then the dissemination programs,

getting that high-speed data connectivity throughout the school, are known as Tier 2. Just the way they define it tells you everything you need to know about the service. The priority has been on Tier 1. Tier 2 has been underemphasized, has not really been a focus of the E-Rate program. And, to make this work with the modern technology—and Senator Rubio was talking about that—the mobility of devices—you’ve got to disseminate the speed within the schools, which is going to require a reallocation of attention between so-called Tier 1 funding and Tier 2 funding. That’s just one example.

Senator PRYOR. Thank you.
Senator Ayotte, you ready?

**STATEMENT OF HON. KELLY AYOTTE,
U.S. SENATOR FROM NEW HAMPSHIRE**

Senator AYOTTE. Yes. Thank you very much, Mr. Chairman.
First of all, I want to thank all of you for being here.

It’s really an honor to have Senator Sununu, given everything that he did for our state. I want to ask you about New Hampshire, because I think, having served admirably on this committee and with all the great work you’re doing now on broadband issues, you appreciate very much the challenges that we face, particularly in some of the more rural counties of Coos, Grafton, and Sullivan with this issue of broadband deployment and access.

So, I just wanted to get your thoughts on how, in a state like New Hampshire, we really can do better, particularly when we think about the North Country, the economic development opportunities there with broadband.

Senator SUNUNU. Well, you know, in New Hampshire, we generally have higher levels of deployment, access, and adoption than the national average, but, without question, there are still communities that are underserved, and there are still the same challenges that we have with adoption that other parts of the country see. So, you know, it’s an indication of the pervasive challenges that are faced, even in a part of the country that’s considered relatively high-tech and has relatively high levels of access or deployment, adoption’s a challenge.

I think it gets back to the kind of partnerships we’ve been talking about. You know, providers working with community organizations to understand why is adoption lagging, providers working with the school systems to identify opportunities to improve digital literacy. Time Warner Cable, obviously a company that I’ve worked with now for almost 5 years, is a big promoter of Connect a Million Minds initiative, over \$100 million in the last 4 or 5 years to drive digital literacy in the schools. So, you know, that’s the adoption side.

On the access side, though, as you point out, northern New Hampshire, we don’t have the speeds that you’d like to see. You don’t necessarily have the infrastructure that you’d like to see. Some communities are still served by legacy infrastructure that might even meet the technical definition of broadband, say over 3 or 4 megabits per second, but isn’t driving the community into the 10 or 20 megabits per second——

Senator AYOTTE. Right

Senator SUNUNU.—per second that's so important to the economy.

So, there, it's a question of, you know, funding, in part, and, again, both by the private sector—so, the local provider—but, in many cases, some of those rural communities have benefited from their effort to work with the Federal Government, whether it's FCC, NTIA, or other programs.

Senator AYOTTE. And one of the issues that I've been very critical of here in the Committee is, frankly, the Universal Service Fund, because New Hampshire is a net donor of nearly \$25 million annually to the fund, and the reality is, as you just identified, Senator Sununu, there are real needs in New Hampshire. And so, I've been very concerned that this doesn't make economic sense for a state like New Hampshire, the way the distribution is done. So, I certainly wanted to get your thoughts on that issue, because, when we talk about funding, I think that rises to the top of my mind.

Senator SUNUNU. Well, thank you very much for drawing me into an issue that's, generally speaking, outside the purview of broadband for America.

[Laughter.]

Senator SUNUNU. But, I will offer a few thoughts, because look, it's a really important—

Senator AYOTTE. Well, you know how hearings are.

[Laughter.]

Senator SUNUNU.—it's a really important issue. I'm obviously joking a little bit, but it—look, it's an important issue because of the amount of money you're dealing with, because of the potential to reform and revise the program and make it work better.

And I'll couple this response to the E-Rate response, in that I would argue both of these programs, E-Rate and Universal Service, they were originally targeted for very specific goals. Right? Universal Service obviously bringing phone service to all parts of the country. The E-Rate for that Tier 1 connectivity on schools—that was the original goal.

And today, as we look at the landscape, the needs are very, very different. And I think, in both cases, those programs have lost their focus, the resources are not well targeted, so they're really not effectively targeted at communities that have greater economic need, not very well focused at communities that have greater infrastructure need. And so, in the case of Universal Service, I think you can fairly argue that much of the money is being used to provide subsidies to parts of the country that are already served by—

Senator AYOTTE. Correct.

Senator SUNUNU.—two or three or four wireless carriers very effectively, and, in effect, almost universally.

In the case of the E-Rate, I think you can very fairly argue that a good deal of the resources go to subsidize the Internet connectivity of fairly well off suburban school systems. And we're all concerned about education, but that is not an effective targeting of those resources, when you have all of the challenges that are both economic, demographic, associated with adoption.

So, in both cases, Universal Service and E-Rate, I would encourage you to roll up your sleeves, because it's not easy, there are a lot of politics here. I—you know as well or better than I. But, it's

a lot of money at stake that could be used far more effectively to deal with the issues of adoption, literacy, improving perception, and helping to drive the digital economy that we know is so important in the 21st century.

Senator AYOTTE. Thank you.

I know that my time is expired, but I could not agree more. I do hope that we do roll up our sleeves on USF and E-Rate so that we are making sure that those dollars are accomplishing what we all want to accomplish, and particularly given the nature of technology, so we're acknowledging the changes that are made. So, I really hope that we're able to take that up, Chairman.

Thanks.

Senator PRYOR. Thank you.

Senator WICKER.

Senator WICKER. Ms. McPeak, you were nodding vigorously during Senator Sununu's answer to the final question. Would you elaborate, briefly?

Ms. MCPEAK. I would. And we have it in our testimony. We said, "Reform E-Rate and Universal Service's Fund, target it to the most needed areas." So, that's basically unserved areas that tend to be rural and urban poor neighborhoods. Target those resources and leverage them to partnerships. That's what we said.

We have a lot in common with New Hampshire, if I might just comment, Senator. We, too, are a donor state. You've named three counties. We've got 16 that have a population of 2 million, exceeds the population of New Hampshire, and they're spread out on 44,000 square miles. That's a state of Kentucky inside California. And these are communities that, if I were answering Senator Rubio, "Why do this?"—because economic development will go there, and they will be able to pay more, even if we are a donor state. And all of the disadvantaged residents in my state will actually get an education, get a decent living, and become taxpayers to contribute to the overall well-being of America.

Senator WICKER. Now, having found some agreement and like-mindedness between Ms. McPeak and Senator Sununu, let me ask you, Senator Sununu: when there was an exchange between Senator Klobuchar and Ms. McPeak about requirements and mandates, did you begin to worry that we were intruding on the light regulatory touch that you advocated?

Senator SUNUNU. Yes, a little bit.

Senator WICKER. And would you care to elaborate?

Senator SUNUNU. Sure. I feel self-conscious, because I feel like I've eaten up too much of Senator Ayotte's time and your time, my longer answers. But, there's no question that that raises some concerns.

And the fundamental reason is because things are changing very quickly in this space. So, let's talk about, for example, a hard target for adoption rates. Well, first and—if you had set that target just a couple of years ago, the exclusive focus would have been on wired broadband connections. But, as we just heard, 80 percent of the country has actually adopted wireless broadband connections and America is leading the world, in terms of technology and deployment of 4G—well, high-speed wireless broadband. So, if you had set that target and focused exclusively on—set that target

thinking about wired broadband, you might have limited or inhibited both investment of that wireline and maybe of the wireless.

It's hard to say where we'll be 2 or 3 years from now. Not that we should promote the adoption, but I don't think there's a magic number. I don't think there's one specific technology. I don't think there's one specific price point. You know, if we were to say, "Here's what the Internet Essentials price point has to be," that's not going to be right for every company in every part of the country with every demographic, because you have questions about what's included with—does that include e-mail? Or do you have flexibility what you can package with that? You know, what is your customer? What other hurdles do they have? You know, whether it's \$9.95 or \$10.95 or \$12.95, that might not make any difference to someone that doesn't have that computer.

So, the hard mandate on price or packaging or the magic number adoption rate, I think risks limiting innovation and flexibility in this area, and, as a result, can potentially become counter-productive.

Senator WICKER. Thank you, Senator Sununu—Mr. Cohen, is Internet Essentials going to go away in a year?

Mr. COHEN. So, I don't have an answer to that yet. And I would say, by the way, that it is a weakness, if you will, to the extent there is a weakness, of governmentally-defined programs, because the only evidence that anyone would cite that it's going to go away is that the FCC order, in connection with the NBCUniversal transaction, obligates us to offer the program for 36 months after we launch the program.

So, I'm not trying to be cute. We have not made a definitive—
Senator WICKER. You have not made—

Mr. COHEN—decision.

Senator WICKER.—a decision.

Mr. COHEN. We love the program. I think the passion for the program that the whole company has demonstrated has been crystal clear, and we'll have an announcement, in due time, and then maybe we'll never have to make an announcement again because there won't be any ambiguity that the program is a Comcast program that we're doing because we're passionate about it and it's the right thing to do. It—

One thing I will add, because it's important to say this, is, one of our commitments has been that, if we were ever to stop this program after 3 years, everyone who's in the program gets the benefit of the 9.95 price for as long as they have a child eligible to participate in the National School Lunch Program. Not the same child they have today, necessarily. So, 20 years from now, if you have a child who's eligible to participate in the National School Lunch Program, you'd still be eligible for the \$9.95 price. So, in that extent, the tail of this program, regardless of what we decide, is a 15-, 20-, 25-year tail for eligible families.

Senator WICKER. Thank you.

Mr. Chairman, at this point, I have a unanimous consent request. Connected Nation has been delivering to the NTIA data on broadband availability and adoption for some 10 states. This—they have prepared some testimony, which they would have given, had they been included. This brings to the Committee's attention sev-

eral of the findings of their work. The testimony provides state-specific broadband adoption information from States such as Minnesota, Nevada, and South Carolina, and also includes data they have collected on broadband adoption by businesses in the United States, an important aspect of broadband adoption that we should remember—the connection between broadband and the economy.

And I would like to ask unanimous consent that this testimony on—prepared by Connected Nation be accepted as part of the record.

Senator PRYOR. Without objection, it'll be accepted.

Senator WICKER. Thank you very much.

[The information referred to follows:]

PREPARED STATEMENT OF TOM KOUTSKY, CHIEF POLICY COUNSEL,
CONNECTED NATION

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- II. Current State of Broadband Adoption
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I. Introduction

Connected Nation applauds the Senate Commerce Committee and its Subcommittee on Communications, Technology, and the Internet for holding this important hearing on broadband adoption and welcomes this opportunity to submit written testimony on this topic of national interest. Chairman Pryor, Full Committee Chairman Rockefeller, Ranking Member Wicker, and Members of the Subcommittee are to be commended for keeping this issue in the spotlight, as Connected Nation and its state programs across the United States have consistently asserted that broadband adoption and use is as important as the ubiquitous availability of broadband.

Connected Nation is a nonprofit organization that works with states, local communities, and technology providers to increase broadband adoption and digital literacy for all Americans—both urban and rural. For over 10 years, Connected Nation has worked directly with states, local leaders, consumers, and broadband providers to build public-private partnerships to identify gaps in broadband service; understand broadband and computer adoption barriers in communities; develop grassroots technology planning teams in communities for improved broadband adoption, and provide computers along with technology literacy programs for low-income and disenfranchised people. We work on behalf of American consumers, and we continue to find, time and again, in communities across our nation, that unserved and underserved people can and will overcome broadband challenges when the public and private sectors work together toward meaningful solutions.

Connected Nation also has the privilege of working through the United States Department of Commerce, National Telecommunications and Information Administration (NTIA)'s State Broadband Initiatives (SBI) program in nine states and the territory of Puerto Rico. The SBI program was authorized by the Broadband Data Improvement Act of 2008 (Public Law 110–385), legislation that originated in this committee and would not have passed without the Committee's leadership on this issue.

As technology evolves, broadband's impact has extended into every aspect of our society including education, government, healthcare, and economic development. A citizen's or business's ability to effectively use a computer, software applications, and the Internet are essential in ensuring that they, regardless of their demographic, location, or income, have the skills needed to be competitive in today's employment market. According to the FCC, over the next 10 years, it is estimated that 80 percent of jobs will require digital literacy skills making broadband adoption absolutely vital.

The expansion of broadband adoption among U.S. residents will lead directly to a more educated and trained workforce, a stronger economy, and healthier citizens. For this reason, Connected Nation is focused on equalizing digital opportunities so that all Americans can get access to high speed Internet and all it has to offer. Broadband is a tool, and like any other it must be used to produce results—this is the measure by which we will gauge the true success or failure of our efforts.

Through the SBI, Connected Nation has been delivering to the NTIA data on broadband availability and adoption for 10 states and territories (Alaska, Iowa, Michigan, Minnesota, Nevada, Ohio, Puerto Rico, South Carolina, Tennessee, and Texas).

In this testimony, I will bring to the Committee’s attention several of the findings of this work. In each of these states, Connected Nation has placed an emphasis on the topic of broadband adoption as State Programs work daily to research, map, and implement community-based projects centered on adoption.

II. Current State of Broadband Adoption

Connected Nation and its programs have been most successful at stimulating broadband adoption by inspiring and empowering communities to lead local initiatives that both reach out to disadvantaged populations and non-adopters and also spur the creation of local applications, which generates a higher level of relevancy that in turn spurs adoption.

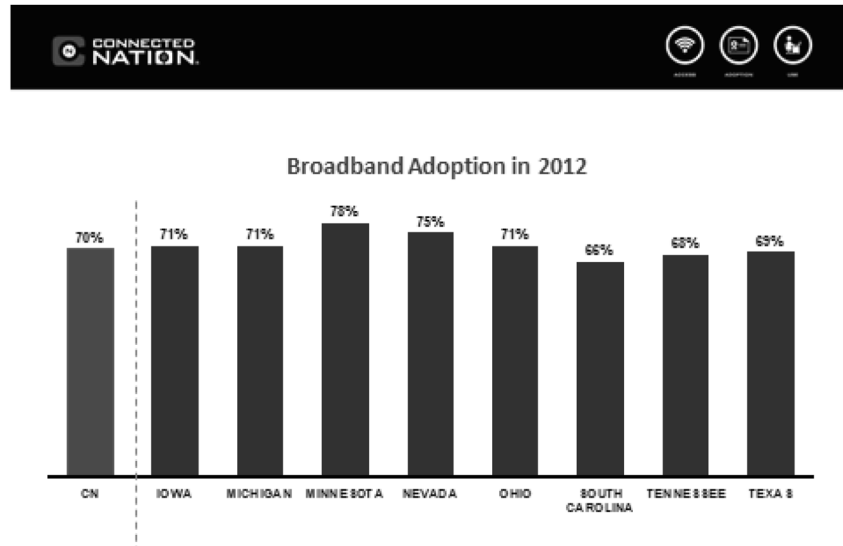
However, these adoption programs do not and are not designed to function alone and should be part of a comprehensive and larger statewide or regional broadband initiative for maximum effectiveness and sustainability.

When we examine the state of U.S. broadband through the prism of demand (adoption) and supply (infrastructure), it is abundantly clear that the Nation’s “demand gap” is significantly larger than the “access gap.” And yet, until the Broadband Data Improvement Act of 2008, the Sustainable Broadband Adoption grant program implemented in 2009, and the National Broadband Plan completed in 2010, very little national attention had been placed upon broadband adoption as a national policy challenge. Since that time, we have seen significant movement and attention to broadband adoption at the national level. Approximately 30 percent of the adult population does not subscribe to broadband, and this gap is wider for minorities, for the low-income population, and for the elderly. And we are beginning to understand the barriers and challenges to adoption—digital literacy, cost, privacy, and others.

A. Residential Adoption

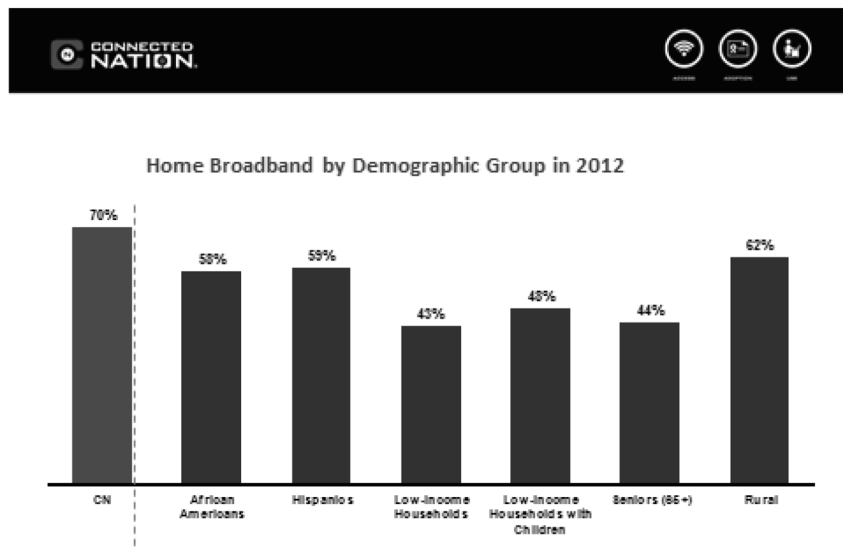
Connected Nation’s 2012 research surveys conducted as part of our Iowa, Michigan, Minnesota, Nevada, Ohio, South Carolina, Tennessee, and Texas programs estimate an aggregate household broadband adoption of 70 percent. Minnesota and Nevada lead this group of states, with the highest broadband adoption rates at 78 percent and 75 percent, respectively.¹ Figure 1 shows the adult adoption rate in each of these states surveyed. The rates of adoption among certain demographic groups are even lower, as shown in Figure 2.

¹ State Broadband Data and Development Grant Program Notice of Funding Availability defines broadband as “Data transmission technology that provides two-way data transmission to and from the Internet with advertised speeds of at least 768 kilobits per second (kbps) downstream and at least 200 kbps upstream to end users . . .” http://www.ntia.doc.gov/frnotices/2009/FR_BroadbandMappingNOFA_090708.pdf



Source: 2012 Connected Nation Residential Technology Assessment

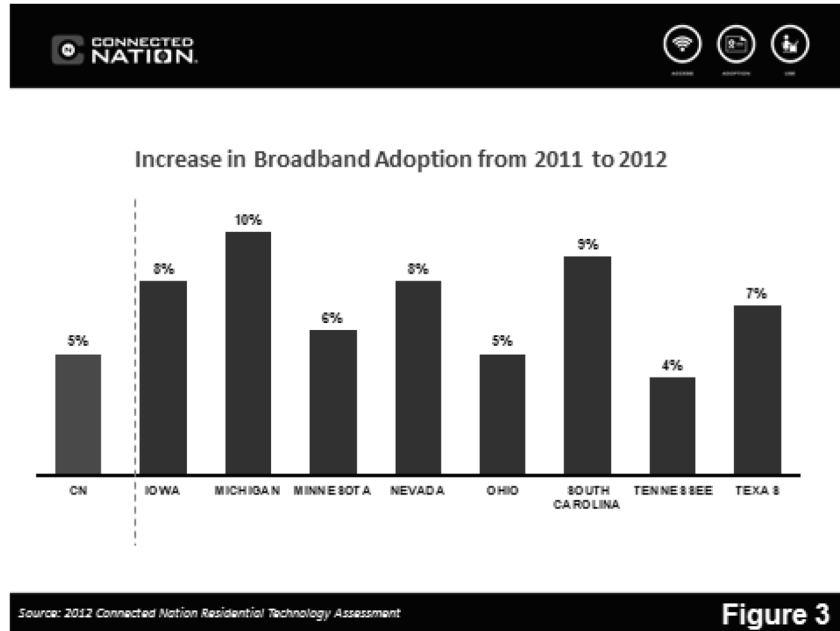
Figure 1



Source: 2012 Connected Nation Residential Technology Assessment

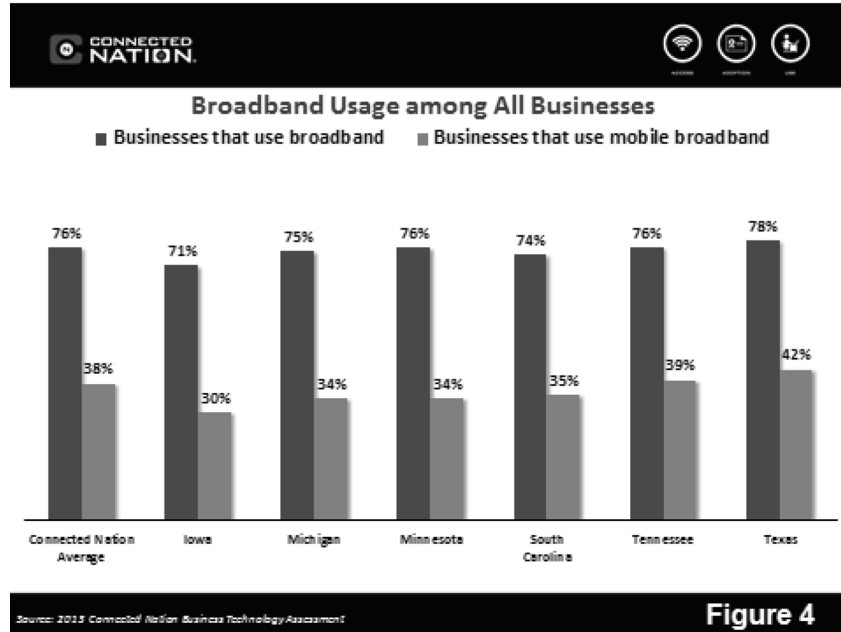
Figure 2

The challenges that remain, five years after the enactment of the Broadband Data Improvement Act and over four years after the creation of the Broadband Technology Opportunities Program at NTIA and the Broadband Initiative Program (BIP) at the Department of Agriculture, do not mean that progress has not been made. In fact, Connected Nation has, as a benefit of conducting its research in multiple years, been able to track significant gains in household broadband adoption rates, with an average increase in household adoption between 2011 and 2012 of five percentage points. (See Figure 3).



B. Business Adoption

Whether businesses are adopting and using broadband technology to the maximum extent is frequently overlooked by researchers—and it should not be, given the important impact broadband can have on small business productivity and job growth. As part of our SBI programs, Connected Nation frequently surveys business establishments to assess their adoption and use of broadband. That research has demonstrated that there are significant gaps in broadband adoption and use in various business sectors. In 2013, our research indicated that in the states surveyed, only 76 percent utilize broadband, meaning that nearly one in four business establishments do not utilize broadband. (See Figure 4).



There are plenty of missed opportunities for economic growth and job creation if the United States were to close this business broadband adoption gap. Connected Nation has found that annual median revenues for businesses that use broadband are \$300,000 higher than those businesses not using high-speed Internet service.² Small businesses that have adopted broadband report annual revenues that average \$100,000 higher than those not connected, and based on Connected Nation's data, we estimate that there are 1.8 million businesses across the U.S. today not using broadband to create efficiencies that lower costs, increase revenues, and help them, grow and create jobs.

III. The Challenges That Remain

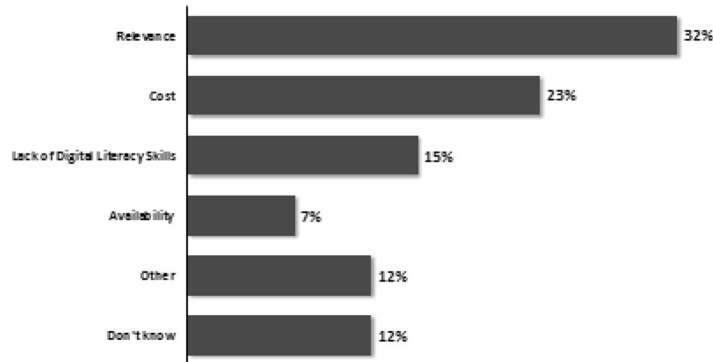
It is one thing to identify the broadband adoption gaps—it is quite another thing to explain them. Based on the findings of various business and residential surveys, Connected Nation engaged in a series of research projects aimed at more fully understanding some basic barriers to broadband adoption: Cost, Location, Digital Literacy and Education, and Demographic.

When analyzing all the states in which Connected Nation is engaged, the main barrier to broadband adoption was found to be relevance (see Figure 5). Relevance represents a non-adopter's feeling that there is little of interest to them on the Internet. This barrier to adoption can be addressed through campaigns to educate the public on the benefits of broadband, digital literacy training, and lifelong learning initiatives. The nation's public libraries are frequently at the forefront of all of these efforts, and Connected Nation works closely with the library community to help make sure that these facilities have adequate facilities and staff to meet this growing demand.

² Connected Nation 2013 Business Survey: <http://www.connectednation.org/survey-results/business>



Barriers to Home Broadband Adoption



Source: 2012 Connected Nation Residential Technology Assessment

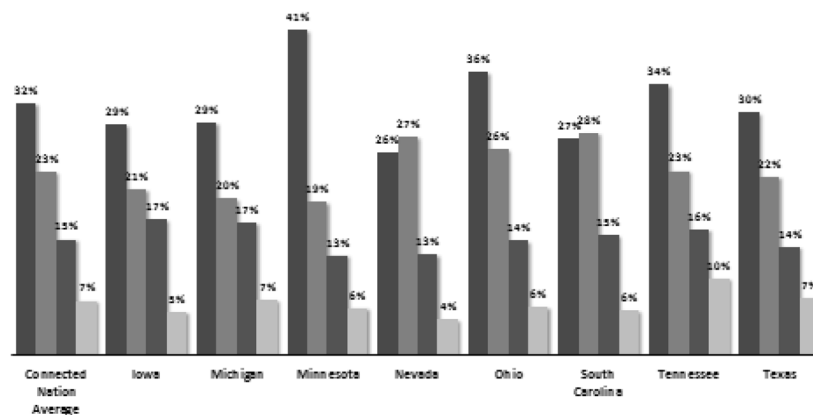
Figure 5

Our research shows that the barriers to home broadband adoption vary significantly by state, as Figure 6 demonstrates. For example, in Minnesota, the largest barrier to adults that have not adopted broadband is overwhelmingly relevance. However, in South Carolina and Nevada, the largest barrier to adoption is cost.



Barriers to Home Broadband Adoption by State

■ Relevance ■ Cost ■ Lack of Digital Literacy Skills ■ Availability



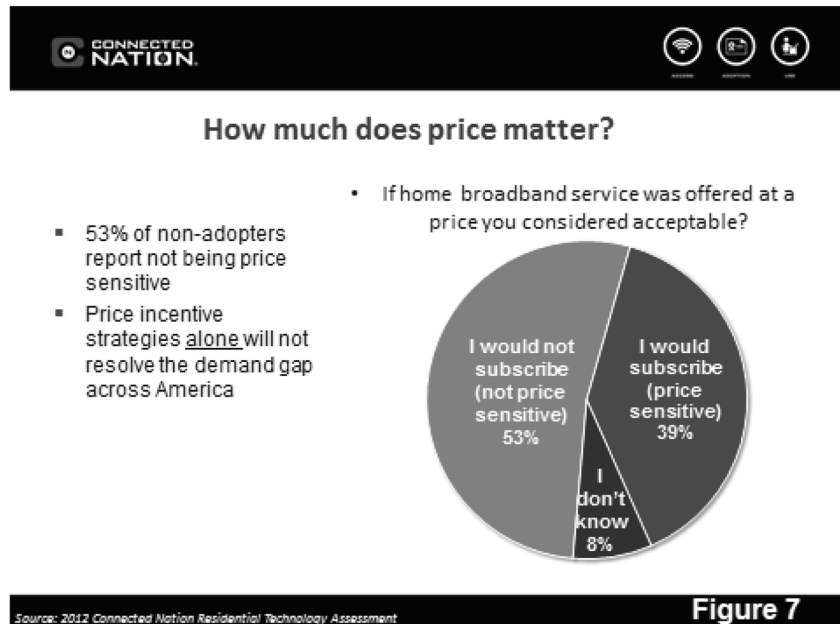
Source: 2012 Connected Nation Residential Technology Assessment

Figure 6

Below are descriptions and links to various papers analyzing each topic in various states:

A. Cost

23 percent of respondents state that the cost of broadband is the main reason they do not currently purchase and/or use service. However, our data indicate that this sensitivity to price varies across different vulnerable demographic groups. As we show in Figure 7 below, 53 percent of non-adopters indicate that they would not subscribe to broadband even if it was offered at a price they considered “acceptable.” To be effective, then, programs aimed at addressing the cost barrier to adoption need to be targeted to groups and demographics that will respond to these price signals.



This research, and white papers on it produced by Connected Nation titled “Late to the Party: How New Broadband Subscribers Compare to Early Adopters” (2011) and “Let’s Make a Deal: Price Sensitivity and Willingness to Pay in the American Broadband Market” (2012), were the focus of a Connected Nation presentation to the FCC in February of 2013, as a part of the Commission’s 2013 Broadband Summit: Broadband Adoption and Usage—What Have We Learned?”

Because the receptivity to price incentives will vary by demographic group, Connected Nation therefore recommends that policy makers or marketing strategists should complement price incentive strategies with programs addressing other barriers to entry such as awareness campaigns, and digital literacy training.

The Federal Communications Commission is taking this approach as to how it has structured its Lifeline broadband adoption pilot projects, which combine price subsidies with efforts designed to conquer other barriers to broadband adoption.

a. Connected Nation, “Late to the Party: How New Broadband Subscribers Compare to Early Adopters,” http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1995130

b. Connected Nation, “Let’s Make a Deal: Price Sensitivity and Willingness to Pay in the American Broadband Market,” http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2033415

c. Connect South Carolina, “Cost as a Barrier to Broadband Adoption: Structuring Subsidy Programs That Work,” <http://www.connectsc.org/sites>

[/default/files/connected-nation/South%20Carolina/files/sc_willingness_finaloct032012.pdf](#)

d. Connect Minnesota, “Worth the Cost: Broadband Prices in Minnesota,” http://www.connectmn.org/sites/default/files/connected-nation/Minnesota/files/mn_price_barriers_final.pdf

B. Location (Rural vs. Non-rural)

Location has consistently been a factor in broadband adoption rates in states and localities where Connected Nation has conducted research. Simply put, broadband adoption rates are lower in rural areas of the United States, a problem compounded by more extensive broadband availability challenges. Detailed and state specific research results are available in the documents below:

a. Connected Texas, “The Texas Digital Divide: An Assessment of Rural and Non-Rural Texans,” http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_rural_non_rural_final.pdf

b. Connect South Carolina, “Technology Adoption among Agribusiness and Rural Businesses,” http://www.connectsc.org/sites/default/files/connected-nation/South%20Carolina/files/sc_agribusiness_final_dec172012.pdf

c. Connect Nevada, “Technology Use among Rural Nevada Businesses,” http://www.connectnv.org/sites/default/files/connected-nation/Nevada/files/nv_rural_biz_final.pdf

C. Digital Literacy and Education

Because relevance is such a significant barrier to broadband adoption, Connected Nation’s programs have produced state-specific research papers to help those state-based public private partnerships craft appropriate strategies to spur broadband adoption:

a. Education

i. Connect South Carolina, “Broadband—A Technology Tool for Lifelong Learning,” http://www.connectsc.org/sites/default/files/connected-nation/South%20Carolina/files/sc_adoption_sept2012_final.pdf

ii. Connected Texas, “Providing Learning Anywhere: K–12 Education in Texas,” http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_elearning.pdf

iii. Connect Nevada, “The Power of Broadband: Boosting Nevada’s Education System,” http://www.connectnv.org/sites/default/files/connected-nation/Nevada/files/nv_elearning_final.pdf

b. Digital Literacy

i. Connected Texas, “Making the Connection through Digital Literacy,” http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_digital_literacy_final.pdf

ii. AConnect Minnesota, “Digital Literacy: A Critical Skills for All Minnesotans,” http://www.connectmn.org/sites/default/files/connected-nation/Minnesota/files/mn_digital_literacy_final.pdf

D. Demographics

As shown in Figure 2, at-risk demographic groups adopt broadband at lower than average rates, and as a result Connected Nation’s programs continue to explore this area of concern:

a. Connect South Carolina, “Closing the Digital Divide in South Carolina,” http://www.connectsc.org/sites/default/files/connected-nation/South%20Carolina/files/sc_gap_analysis_final.pdf

b. Connect Nevada, “Technology Adoption among Hispanics in Nevada,” http://www.connectnv.org/sites/default/files/connected-nation/Nevada/files/nv_hispanic_adoption.pdf

IV. Conclusion

Broadband technology is becoming pervasive in American life, and digital skills are rapidly becoming “must have” tools for American workers and students. Whether students can research and complete their homework, whether adults can improve their skills, whether a mother can shop for health insurance options online, whether a senior can see his or her own medical records and understand his or her care and prescriptions efficiently—all of these require wide adoption and broad knowledge as

to how to use broadband. Broadband is not a luxury item, and this nation can ill-afford to have 3 in 10 adults remain off-line for very much longer.

The gaps demonstrate the need for Federal leadership and support for public-private partnerships that will increase broadband adoption and use. Programs that can drive broadband adoption represent a highly efficient use of taxpayer funds because data show that once someone begins using broadband, they tend to keep it, thus driving economic impact for their community. For example, an April 2009 survey by the Pew Foundation's Internet Project reported that people are twice as likely to sacrifice cell-phone service or cable television service than Internet service, with 22 percent of adults reporting that they had cancelled or cut back cable TV service in the previous 12 months, 22 percent of adults reporting that they have cancelled or cut back cell-phone service in the previous 12 months, compared to only 9 percent of Internet users reporting cancelling or cutting back on broadband.³

Public-private partnerships, such as those that Connected Nation works to foster, have proven themselves as an effective vehicle for improving broadband availability and adoption. Successful public-private partnerships will recruit local leaders, such as public libraries, school administrators, and public officials, behind initiatives to develop locally-relevant broadband applications and solutions that target the specific needs of each community. Converting non-adopters requires more than simply "broadband cheerleading" or splashy awareness raising campaigns— it frequently requires demonstrating directly to the community how broadband will improve quality of life and provide wealth-creating opportunities.

At Connected Nation, we have had the privilege to see firsthand the positive outcomes of collaboration and public-private partnerships in this arena, and never cease to be amazed at what is possible when a community and individuals have the desire and opportunity to connect and access transformative broadband technology.

Nonprofit organizations such as my own and fellow travelers such as the Blandin Foundation in Minnesota, the Prima Civitas Foundation in Michigan, and ITology in South Carolina have an important role to play working with both public and private sector stakeholders to foster and facilitate localized strategies for broadband expansion. It is imperative that as a nation we focus on programs that have a proven record of success working with local communities to identify and address the challenges that each community is experiencing. We look forward to continue working with Congress, the Federal government, states, and thousands of local champions who understand and share our mission for universal digital inclusion across America.

Thank you again, Chairman Pryor, Full Committee Chairman Rockefeller, Ranking Member Wicker, and Members of the Subcommittee for this opportunity to provide this testimony for the record, and Connected Nation stands ready to continue working with you on this and other broadband related issues and policies.

Senator WICKER. I think it has been a great hearing——

Senator PRYOR. Thank you.

Senator WICKER.—Mr. Chairman. Appreciate it.

Senator PRYOR. I do have one last question, for Mr. Smith.

Do you have any other questions, Senator Ayotte?

Senator AYOTTE. I don't think so.

Senator PRYOR. OK.

I do have one last question, for Mr. Smith. I don't want you to feel left out of this——

Mr. SMITH. I was going to say, I thought you forgot about me over here.

[Laughter.]

Senator PRYOR. No, no. I'll tell you, we appreciate Pew, because you guys do great work——

Mr. SMITH. Thank you.

Senator PRYOR.—and you provide a lot of good information and data, and just a great resource for us. So, I do want to mention that and thank you.

³ (<http://www.pewinternet.org/Press-Releases/2009/Home-broadband-adoption-increases-sharply-in-2009.aspx>)

Part of your testimony was, you mentioned that there's a slow-down in adoption in recent years. And I'd like to get your insight on that. And you mentioned some of this before, but I'm wondering if it's kind of a saturation issue that, sort of, the people who want it have already gotten it, and things like that. You went through some demographics, you know, older adults, low education, et cetera, that seemed to be resistant to taking this, for one reason or another. So, I'm curious about that, but I'm also curious about your reasons that you think that it's more difficult in rural areas to get the adoption rate where we want it to be. So, are we hitting a saturation point? And then, tell us specifically about rural America.

Mr. SMITH. Sure. So, in terms of a saturation point, I don't know that we've necessarily hit a saturation point, but it's pretty clear that the people who are easy converts have already converted, and the folks who are left over, you know, a lot of them, as I mentioned, don't use the Internet at all. So, not only do they, you know, not have broadband, they don't have a computer, they probably have very little experience with what they need to do and feel a lot of apprehension about going online. So, there's that group that obviously has some severe issues as far as that goes.

The other group, a lot of those folks, generally, what we see and what the FCC has seen in their work is that they want it, they like the idea of access, they see the benefit of it, but, for various reasons, a lot of them financial, don't have the ability to have broadband at home.

And I was going to mention to Senator Rubio, a significant number of those folks, so about 10 percent of the population now, we find doesn't have broadband at home but does have a smartphone. So, in many instances, that group is getting access of one kind or another through a smartphone, but not necessarily through a home connection.

But, I think, you know, in addition to the—sort of, the economic climate that we've had recently, a lot of the issue is just that the folks who are left in the pool are not going to be as easy to bring on board as the folks that have already been brought on board, thus far.

So, as to the rural question, definitely we see continued gaps in rural residents versus urban and suburban. That gap has gotten smaller over the years. And there are sort of two issues that go into play there. Part of that is—as Senator Ayotte mentioned, an access issue for certain rural areas. In a lot of sort of rural areas, you simply can't get access in a reasonable way. It also plays into the—the sort of demographics of the rural population. So, in general, they tend to be older, for example, and we know that the biggest group of non-adopters is people over the age of 65. So, there's sort of a demographic issue as well as an access or deployment issue when it comes to the rural population.

Senator PRYOR. OK. Well, thank you.

And—you good?

Senator WICKER. Yes.

Senator PRYOR. OK.

Listen, thank you all for being here. I appreciate all of our panelists. I know some people need to travel back to where they came from. So, again, thank you.

What we're going to do is, we'll leave the record open. Some of our members couldn't make it here today, and we will leave the record open for 2 weeks and allow members to submit questions. We would ask you all to get those back to us as quickly as you could.

But, again, I just want to say thank you all for doing this. This is helpful, and we appreciate it.

And, with that, we'll conclude the hearing.

[Whereupon, at 12 p.m., the hearing was adjourned.]

A P P E N D I X

PREPARED STATEMENT OF HON. JOHN D. (JAY) ROCKEFELLER IV, U.S. SENATOR FROM WEST VIRGINIA AND CHAIRMAN, U.S. SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

Over the last decade, the Nation has made great strides toward the goal of ubiquitous broadband availability around the Nation. While much work must be done in deploying broadband to the approximately 19 million Americans that still lack access to broadband, the increase in broadband availability during the past 10 years is something to applaud. This achievement came through a concerted effort by both the public and private sectors, with billions of dollars in investment to bring the benefits of broadband to all Americans. [And I am proud of the role the Broadband Technology Opportunities Program (BTOP) that I championed has played in this effort toward achieving universal broadband availability and adoption.]

Broadband empowers our people with the digital resources they need to succeed in their communities, across the Nation, and around the world. Broadband offers businesses, no matter their size, entry into the world's markets. It provides job seekers access to new opportunities to find employment. Broadband offers access to previously unavailable educational and health care resources. As I have seen in my travels around West Virginia, bringing broadband to citizens in unserved areas of the country can fundamentally change their lives.

Making broadband available to all Americans, however, is only part of the challenge. That is why I am pleased that Subcommittee Chairman Pryor has convened today's hearing on broadband adoption. According to the National Telecommunications and Information Administration (NTIA)'s most recent report, approximately 27.8 percent of homes in America that have access to broadband do not subscribe to that service. The reasons for not subscribing can be varied, but the truth is that these homes risk being left behind as everyone around them takes advantage of the digital revolution brought about through broadband infrastructure.

I am particularly interested in hearing witnesses discuss how broadband access by our students can positively impact large broadband adoption issues. Evidence from the Census Bureau shows a positive relationship between a child's exposure to broadband at school and adoption of broadband by the child's parents at home. Children are broadband advocates—as the world is opened up to them through the use of broadband and digital technology in the classroom, their parents and caregivers come to understand just how important it is to have broadband at home. This is yet another reason why the Federal Communications Commission must act quickly to strengthen and expand the E-Rate program in our Nation's classrooms and libraries.

I want to thank our witnesses today and look forward hearing about their real-world experiences with broadband adoption efforts and the lessons learned from the field.

FOLLOW-UP SUBMISSION TO TESTIMONY SUBMITTED BY SUNNE WRIGHT McPEAK,
PRESIDENT AND CEO, CALIFORNIA EMERGING TECHNOLOGY FUND

Purpose and Focus of Follow-Up Submission to Testimony

The purpose of this document is to provide additional information and clarification regarding the written testimony submitted by the California Emerging Technology Fund (CETF) and responses to questions for the Senate Subcommittee on Communications, Technology and the Internet hearing on "Broadband Adoption: The Next Mile" on October 29, 2013. This document addresses three major issues discussed during the hearing:

- Challenges of Increasing Broadband Adoption
- Policy Goals, Performance-Based Regulatory Framework, and Incentives for Partnerships

- Community Experiences with Industry Broadband Adoption Programs

Challenges of Increasing Broadband Adoption

Chairman Pryor and Ranking Member Wicker both eloquently described in their opening comments the challenges of increasing broadband adoption which must be addressed by formulating national policy and designing an effective strategy to close the Digital Divide. Those who remain off-line are largely remote rural residents without access and urban poor residents without digital literacy skills or the resources to afford market rate Internet service. (The data published by the Pew Charitable Trust regarding broadband adoption are discussed below.) Clearly, broadband access (infrastructure deployment) is “necessary” for broadband adoption, but it is not “sufficient” for the most disadvantaged residents—low income families and people with disabilities. And, it is for these residents that broadband has the greatest potential to transform their lives and help them become productive citizens and contributing taxpayers for the benefit of the Nation.

CETF summarized the challenges of broadband adoption in the written testimony based on extensive experience working with more than 80 community-based organizations (CBOs) in disadvantaged communities throughout California. Dr. John Horrigan summarizes the challenges as three-fold, which were set forth in the CETF testimony:

1. Cost
2. Relevance
3. Digital Literacy

CETF recommendations for action are anchored in the understanding that all three facets of the challenge must be addressed simultaneously in an integrated strategy to increase broadband adoption:

- There must be an affordable broadband subscription rate to address the *cost* challenge. Given the modest market penetration to date of voluntary efforts, it is likely that an Affordable Broadband Lifeline Rate Program at the national level will be pivotal to significantly increasing broadband adoption beyond current levels.
- Broadband adoption should be integrated into all existing Federal programs to address the *relevance* challenge. It should be a part of all existing and future programs related to education, workforce preparation, healthcare, and housing, especially for disadvantaged and low-income populations. And, that policy directive from Congress to integrate broadband adoption does not require additional funding.
- Training in *digital literacy* with access to affordable computing devices needs to be provided by CBOs with a positive track record that can serve as the “trusted messengers and honest brokers” in a way that broadband companies alone are not able to do. And, digital literacy training is most effective when integrated into relevant services.

The Pew Charitable Trust data on broadband adoption needs to be interpreted through the “lens of reality” of on-the-ground experience with the benefit of listening to disadvantaged residents. Several focus groups commissioned by CETF with low-income people who don’t subscribe to broadband and who don’t have a computer in the home (all conducted in language and in culture) reveal that the vast majority of residents currently off-line want to have the benefits of high-speed Internet access (which generically is referred to as broadband and includes both wireline and wireless technologies).

The 2013 Pew Report on “Who’s Not Online and Why” finds that 85 percent of Americans do use e-mail and the Internet overall, which tracks with an 86 percent Internet use rate in California, and that 15 percent are not online overall, with just 5 percent saying that “the Internet is not relevant to them”. Unfortunately, some industry voices repeat those figures as “34 percent of the 15 percent” (emphasizing the 34 percent in graphics) without doing the math to place in perspective that it is just 5 percent. Further, when anyone drills down on the 5 percent there is a discovery that many of these people are senior citizens who come to see the “relevance” when it is related to better healthcare monitoring in their home, which can offset follow-up clinical visits by as much as 40 percent (having a significant impact on quality as well as cost savings in healthcare). The majority of those not online, 58 percent of the 15 percent (or 9 percent of the population) cite digital literacy, lack of a computing device to connect to the Internet, and cost as issues. Thus, the Pew data confirm that increasing broadband adoption requires an integrated approach

that tackles in a coherent strategy the three challenges of *cost*, *relevance*, and *digital literacy*.

Broadband adoption, however, is not just about increasing overall Internet use—it is about high-speed Internet access and use *at home*. That is the focus of the California goal to achieve at least 80 percent broadband adoption at home (with no single region or demographic group less than 70 percent). California today is at 75 percent home broadband adoption (including 6 percent mobile devices only) and is not likely to achieve the 80 percent goal without new Federal policy and reform of the Universal Services Fund (USF) by the Federal Communications Commission (FCC) that address all three challenges to broadband adoption.

While these figures may suggest that there are just a few percentage points left to close the Digital Divide, it must be understood that they translate into lots of real people who are being left farther and farther behind in a Digital World—more than 633,000 families alone in California need to be reached to subscribe to broadband to achieve the 80 percent adoption goal.

Pew contends that a relatively small percentage of Americans lack any access. However, in every state there are rural communities—thousands and thousands across the county—that are being stifled without broadband access. Further, the infrastructure that does exist in many rural areas often is so slow as to be barely classified technically as “broadband” and certainly is inadequate for a vibrant 21st Century community. And, while percentages may seem small, the actual number of households totally unserved (and woefully underserved) need to be put in perspective: in California, there are at least 225,000 remaining unserved households to reach with broadband to achieve the state goal of 98 percent deployment. Fortunately, when broadband adoption is coordinated with deployment in California rural communities, then rural adoption rates quickly catch up to the statewide average.

In the written testimony, CETF delineated specific recommendations for the integration of broadband deployment and adoption into existing programs within Federal departments. The U.S. Department of Transportation should have been included because deployment of broadband along with major Federal transportation projects (surface and transit) in public rights-of-ways (coupled with a “Dig Once” policy) can greatly assist broadband deployment into unserved areas. Further, broadband is a “green strategy” because it enables “virtual trips” which reduce impacts on the environment and help relieve traffic congestion.

Policy Goals, Performance-Based Regulatory Framework, and Incentives for Partnerships

As Senator Wicker observed during the hearing, CETF strongly recommends that Congress set *policy goals* for broadband deployment and adoption along with a timetable and assignments of responsibility. Without a goal there is no accountability for performance. It is the first crucial step towards “rolling up our sleeves”, as Senator Ayotte proposed. In fact, a goal is the bedrock of a “*performance-based*” *regulatory framework* that invites and rewards private-sector innovation versus the conventional “command-and control” regulatory scheme that inhibits investment. However, the references during the hearing to a “light touch” in regulations cannot and should not mean the absence of either policy goals or performance accountability—the very foundation for common sense regulations that serve the public interest while embracing the strengths of the private sector. That is why it is important for Congress to set national broadband deployment and adoption goals, as Senator Rubio questioned the witness panel.

In this context, it is important to clarify my answer to Senator Klobuchar regarding “mandates” which in the CETF testimony refers to recommended actions by Congress to: (a) set policy goals for broadband deployment and adoption; (b) direct Federal departments to integrate broadband deployment and adoption into existing programs; and (c) provide input to the FCC on USF reform (including design of an Affordable Broadband Lifeline Rate Program and modernization of E-rate). To the extent that Congress acts to establish Federal policy, then that is a “mandate” for the Administration.

For example, CETF repeatedly recommended that Congress encourage and reward partnerships in meeting the broadband adoption goals—federal-state, public-private, and provider-community. Thus, in this sense, CETF recommends that Congress “mandate” the FCC to reform the USF to provide *incentives for partnerships* to broadband providers such that design of an Affordable Broadband Lifeline Rate Program and E-rate reform addresses all three challenges to adoption: cost, relevance, and digital literacy. Likewise, CETF recommends that broadband providers that receive subsidies from USF should be required to submit a transparent plan to the FCC with goals (including percentage of eligible participants to be reached) and a coherent set of activities to achieve the goals. Further, CETF recommends that pri-

ority funding and/or financial incentives be available to those broadband providers that submit a plan to partner with intermediaries (such as EveryoneOn) and CBOs with proven track records as “trusted messengers and honest brokers” and which incorporates relevance and digital literacy. While it would be voluntary on the part of each provider whether or not to participate in the Affordable Broadband Lifeline Rate Program, receipt of USF subsidies would be accompanied by these kinds of “requirements”—which some might call a “mandate”—but which are needed to ensure accountability and success.

Community Experience with Industry Broadband Adoption Programs

CETF strongly encourages public-private partnerships to leverage public investment and harness the innovation of the private sector. Such partnerships must be transparent, explicit about goals, and accountable for results. As stated during the hearing, CETF commends industry efforts, such as Comcast Internet Essentials (CIE) program, but observes that the results to date have been modest, with less than 10 percent of the eligible households actually participating. It is worth noting that Comcast executive David Cohen did clarify at a *Washington Post* forum last week (November 5, 2013) that his reference during the hearing to “1 million Americans” participating in CIE was a calculated projection of all persons in about 250,000 households that actually have signed up. In California, 25,739 households out of 313,805 eligible households, or only 8.2 percent of the prospective market, have signed up for CIE (according the last public release by Comcast on June 21, 2013). Other companies have done even less: according to EveryoneOn, Time Warner Cable operated their affordable broadband pilot for only 2 months (although the launch was highly-touted in media) and signed up just 1,235 households around 502 participating disadvantaged schools. To be sure, these companies know how to market and are successful when they are committed to a goal. They have not produced the hoped-for results because they have not been accountable to anyone for performance, have ignored the “lessons learned” from on-the-ground experience, and have invested too little in partnering with CBOs with a track record to integrate relevance and digital literacy into their broadband adoption programs.

Attached are letters from knowledgeable sources close to the community and consumer realities of these voluntary affordable broadband adoption programs that set forth the nature of the existing problems. Representatives in California of Comcast and other companies have been open to receiving this kind of input and have tried to respond to the extent of their authority; and some issues have been resolved, but enough problems persist to conclude that there must be substantive changes to the programs to increase market penetration and broadband adoption.

Conclusion

Closing the Digital Divide is an imperative for U.S. global competitiveness. The Senate Subcommittee hearing was a very good beginning to identify the challenges and formulate strategies to accelerate broadband adoption. It is essential that Congress act to establish policy goals that leverage existing resources, foster partnerships, and reward results. There is no substitute for Congressional leadership to empower and mobilize the Nation’s imagination, talent and innovation.

As was repeatedly said during the hearing, “there is no silver bullet” for broadband adoption, but as was stated in the CETF written testimony, “there is silver buckshot” in that there is a “critical mass” of actions required close the Digital Divide which must be infused in Federal policy. As was discussed during the hearing, there are well-known, documented primary challenges to broadband adoption:

1. Cost
2. Relevance
3. Digital Literacy

Closing the Digital Divide and accelerating broadband adoption requires an affordable broadband rate for low-income families. As FCC Commission Mignon Clyburn has observed, “100 million American homes are without broadband and the #1 reason is affordability.” Thus, there is a need to step up the voluntary efforts by broadband providers and establish a Federal Affordable Broadband Lifeline Rate Program that is coupled with incentives for partnerships to integrate broadband into other relevant programs for disadvantaged residents that incorporate digital literacy training.

As a result of the Senate Subcommittee hearing, the Senators should take heart that it is entirely possible to succeed in closing the Digital Divide. Congressional leadership, focus and commitment make a huge difference in this quest.

Attachments

Letters from:

- 2-1-1/United Ways of California, Los Angeles
- Chicana/Latina Foundation, Burlingame
- Mission Economic Development Agency, San Francisco
- Office of Community & Economic Development, California State University, Fresno
- Santee Educational Complex, Los Angeles Unified School District, Los Angeles

Attachments to Letter

2-1-1 CALIFORNIA
South Pasadena, CA, November 11, 2013

Hon. MARK PRYOR,
Chairman, Subcommittee Committee on
Communications, Technology, and the
Internet,
United States Senate
Washington, DC.

Hon. ROGER WICKER,
Ranking Member, Subcommittee
Committee on Communications,
Technology, and the Internet,
United States Senate
Washington, DC.

RE: HEARING ON BROADBAND ADOPTION: THE NEXT MILE

Dear Chairman Pryor and Ranking Member Wicker:

My name is Lilian P. Coral, and I serve as the Director of 2-1-1 California. Under the fiscal sponsorship of the United Ways of California, 2-1-1 California is a statewide network of local 2-1-1 information and referral providers authorized by the California Public Utilities Commission and the Federal Communications Commission to use the 2-1-1 code as an easy-to-remember and universally recognizable number that would enable a critical connection between individuals and families in need and the appropriate community-based organizations and government agencies. 2-1-1 California's mission is to develop the statewide infrastructure and support necessary to ensure quality 2-1-1 services for everyone. In California, 2-1-1 is accessible in 30 counties servicing 93 percent of Californians.

I am writing this letter to add additional information to the record for the Broadband Adoption: The Next Mile hearing. We were fortunate to be recipients of an American Recovery and Reinvestment Act grant through the National Telecommunications and Information Administration to focus on Broadband Awareness and Adoption and between March 2010 and June 2013 2-1-1 California through its 2-1-1 partners:

- Provided outreach and education to 229,481 callers
- Screened and referred 59,775 callers to computer and Internet-related resources

As follow-up, 2-1-1 California through its 2-1-1 partners, conducted surveys and interviews with approximately 6 percent of these callers to find out whether they had participated in any computer/Internet related training classes, subscribed to broadband or received a free or low cost computer as a result of the referrals they received from 2-1-1. Based on the survey results, we estimate that:

- 7,478 households subscribed to broadband
- 4,318 adults participated in a training class
- 3,659 households received a computer
- 4,555 children were connected to the Internet

Unfortunately, the Digital Divide continues to disproportionately impact thousands of low-income families throughout California and especially in some of our major urban centers. Based on in-depth screening and referral protocols, callers told 2-1-1 Specialists that the main reason they did not have broadband at home was that they did not own a computer (41 percent). The second biggest reason was cost (36 percent).

We believe broadband adoption is an imperative for economic prosperity, quality of life and family self-sufficiency and support the recommendations put forth by the California Emerging Technology Fund for accelerating Broadband adoption. Our Data and experience indicate that the majority of people without broadband at home do want to adopt the technology and understand the value proposition.

We think it is particularly important that there be stronger partnerships that can help community-based organizations like our own, who are trusted messengers, connect those still unconnected to truly affordable broadband options that will ensure low-income families connect, and stay connected, to broadband, to access the richness of resources and education that the Internet affords.

Respectfully,

LILIAN P. CORAL,
Director,
2-1-1 California.

CHICANA/LATINA FOUNDATION
Burlingame, CA, November 8, 2013

Hon. MARK PRYOR,
Chairman, Subcommittee Committee on
Communications, Technology, and the
Internet,
United States Senate,
Washington, DC.

Hon. ROGER WICKER,
Ranking Member, Subcommittee
Committee on Communications,
Technology, and the Internet,
United States Senate,
Washington, DC.

RE: HEARING ON BROADBAND ADOPTION: THE NEXT MILE

Dear Chairman Pryor and Ranking Member Wicker:

My name is Alicia Orozco, and I serve as Project Manager of the Get Latinos Connected project (GLC) of the Chicana Latina Foundation, based in the San Francisco Bay Area. The GLC project seeks to end the digital divide that keeps the Latino community from connecting to the Internet, and thus fully participating in the 21st Century. We are a non-profit organization which promotes professional and leadership development of Latinas. The Foundation's mission is to empower Chicanas/Latinas through personal, educational, and professional advancement.

I am writing this letter to add additional information to the record for Broadband Adoption: The Next Mile hearing. We were fortunate to be recipients of an American Recovery and Reinvestment Act grant through the National Telecommunications and Information Administration to focus on Broadband Awareness and Adoption. With that project, were able to sign up 1,070 first-time Internet users. That is 1,070 new Latino Internet users. The majority of these homes have children who now enjoy access to the online world and who have improved their class work.

We strongly advocate for broadband at home and Digital Literacy training as described in the National Broadband Plan, and we are making the suggestions described in this letter with the goal of giving all Americans access to digital tools and skills to improve their lives.

While we find the Comcast Internet Essentials program to be helpful to some Bay Area families, there are several barriers that impede many more households from participating.

We recommend that:

Comcast extend its program from 2014 until 2017 and set adoption goals. As Comcast Executive Vice President David Cohen testified before your subcommittee, the company has "learned a lot over the first two years" of the three-year program. Currently, Internet Essentials is scheduled to end 1 June 2014. From a California perspective, where nearly half of Latino households do not have access to high-speed Internet at home, this is not the time to halt the program. Comcast is the main cable provider in the San Francisco Bay Area. We also recommend that Comcast set national adoption targets as a percentage of eligible households, and similar targets in major markets, such as the San Francisco Bay Area. In addition to disclosing adoption goals, it would be very helpful for non-profits like ours if Comcast would share information about where they are targeting the broadband offer, including providing lists of schools where students are eligible for Comcast Internet Essentials. We have been asking for the list of auto-qualified schools since the program started and we're still waiting for that list.

The online application is useless. We have yet to be able to actually use it. We've held Technology Fairs where we have set up computer banks so that they can actually sign up people for Internet Essentials, but have been unable to because the online application does not work. We keep getting bounced off.

We also have become aware of the fact that when a person calls Comcast to sign up for Internet Essentials, they are being asked how many children they have in the program. Then the Comcast agent chooses the oldest child to enroll in the pro-

gram. This means the family will be “kicked out” of the program sooner, because the discount only lasts as long as the child is in school. So if an eligible family has a child in high school and another in elementary schools (both on the National Lunch program) by enrolling the high school student, the family loses several years of eligibility for Internet Essentials.

Comcast remove the 90-day requirement. Comcast will not allow low-income families who are already Internet subscribers, or have subscribed in the past 90 days, to switch to the cheaper Internet Essentials service. If a family has subscribed to the Internet as part of a Comcast bundled service, they must stop service for 90 days before they become eligible for the \$9.95 month Internet service.

Comcast increase support of local and regional digital literacy programs. Many of the families we serve need computer literacy training to take full advantages of their broadband connections. CLF has worked effectively with schools, faith-based communities, local employers, health clinics and job-training programs to incorporate digital literacy and workforce training. We would welcome additional commitments by Comcast to help fund essential training programs like these.

Comcast increase support of local and regional digital literacy programs. Many of the families we serve need computer literacy training to take full advantage of their broadband connections to the Internet. The Chicana/Latina Foundation has worked effectively with schools, churches, health clinics, job-training programs and social service providers to incorporate digital literacy and workforce training. We would welcome additional commitments by Comcast to help fund essential training programs like these.

Comcast expand the program to include low-income seniors, people with disabilities and veterans. Recent polling on home broadband use in California shows that seniors and people with disabilities adopt high-speed home Internet at significantly lower rates than other populations. Often homebound, these clients are among the most vulnerable we serve, and an affordable Internet connection would significantly improve their access to vital services and the quality of their lives.

Elected officials and policymakers should know that while Comcast has made improvements to its discounted broadband offer, the company should make Internet Essentials available beyond June 2014 and expand eligibility as described above if it desires to be a leader in closing the Digital Divide in California.

Respectfully,

ALICIA OROZCO,
Project Manager,
Get Latinos Connected.

MISSION ECONOMIC DEVELOPMENT AGENCY
San Francisco, CA

Hon. MARK PRYOR,
Chairman, Subcommittee Committee on
Communications, Technology, and the
Internet,
United States Senate,
Washington, DC.

Hon. ROGER WICKER,
Ranking Member, Subcommittee
Committee on Communications,
Technology, and the Internet,
United States Senate,
Washington, DC.

RE: HEARING ON BROADBAND ADOPTION: THE NEXT MILE

My name is Luis Granados, and I serve as Executive Director of the Mission Economic Development Agency (MEDA), based in San Francisco. The Mission Economic Development Agency (MEDA) is a community-based, local economic development corporation located in the Mission District of San Francisco. For 40 years MEDA has worked to improve economic and social conditions in the neighborhood by stimulating investment, enhancing the business environment, and creating jobs for area residents, with an emphasis on the Latino community in San Francisco. MEDA engages the local community with homeownership counseling, foreclosure intervention, small business development services, financial education, free tax preparation, and technology training and workforce development.

I am writing this letter on behalf of MEDA to add additional information to the record for the Broadband Adoption: The Next Mile hearing. We were fortunate to be recipients of an American Recovery and Reinvestment Act grant through the National Telecommunications and Information Administration to focus on Access to Careers in Technology and, earlier this year the Department of Education granted MEDA a \$30 million Mission Promise Neighborhood Grant aimed at helping students at underperforming schools San Francisco.

We strongly advocate for broadband at home and digital literacy training as described in the National Broadband Plan, and we are making the suggestions described in this letter with the goal of giving all Americans access to digital tools and skills to improve their lives.

In our work with Comcast we have found the Internet Essentials program to offer high-quality, reliable broadband service to some of the people who need it most. Our clients who have subscribed are generally happy with the program. However, there are several barriers that impede many more households from participating.

We recommend that Comcast take the following steps to ensure that the maximum amount of eligible and needy families can benefit from Internet Essentials:

Extend Internet Essentials from 2014 until 2017. As Comcast Executive Vice President David Cohen testified recently before your subcommittee, the company has “learned a lot over the first two years” of the three-year program. Currently, Internet Essentials is scheduled to end in June 2014. From a California perspective, where nearly half of Latino households do not have high-speed Internet access at home, Comcast should continue the program.

In addition, in the first years of the program Internet Essentials sign-ups were impacted as we worked with eligible families to overcome hurdles in the subscription process, challenges that resulted in damaged community confidence in the product. These hurdles included:

- Clients receiving letters from Comcast saying that they had failed a credit check. Internet Essentials specifically advertised there would be no credit check.
- The application process took up to 3 months—far too long for clients that are skeptical about the product in the first place and have other pressing demands on their budget.
- Initial Internet Essentials customer service representatives suggested that Internet Essentials clients could pay \$150 deposit to avoid a credit check.
- Families were charged \$50 by the technicians that installed their modem, even though Internet Essentials guarantees free installation.

Through advocacy with Comcast and the actions of regional staff, these issues have been addressed by Comcast. However, MEDA is concerned that these issues have prevented eligible and needy families from fully taking advantage of this benefit. Due to these early barriers MEDA believes Comcast should extend the Internet Essentials program until 2017.

Comcast increase support of community-based programs. If it weren’t for community-based organizations helping clients learn about and subscribe to Internet Essentials, Comcast wouldn’t even have the 8 percent penetration it is currently reporting among eligible families. These organizations also provide critical ongoing support to subscribers, including digital literacy training. At MEDA, we spend significant resources on these support activities. We would welcome additional commitments by Comcast to help fund essential programs like these.

Comcast expand the program to include low-income individuals. Even as government and other social services are more exclusively available online, the clients they are meant to serve adopt high-speed home Internet at significantly lower rates than other populations. Low-income households, people with disabilities and seniors are among the most vulnerable we serve, and an affordable Internet connection would significantly improve their access to vital services and the quality of their lives.

Elected officials and policymakers should know that while Comcast has made improvements to its discounted broadband offer, the company should offer Internet Essentials beyond June 2014 and expand eligibility as described above if it desires to truly play a leadership role in closing the Digital Divide and achievement gap in our state.

Respectfully,

LUIS GRANADOS.

CALIFORNIA STATE UNIVERSITY, FRESNO
Fresno, CA

Hon. MARK PRYOR,
Chairman, Subcommittee Committee on
Communications, Technology, and the
Internet,
United States Senate,
Washington, DC.

Hon. ROGER WICKER,
Ranking Member, Subcommittee
Committee on Communications,
Technology, and the Internet,
United States Senate,
Washington, DC.

RE: HEARING ON BROADBAND ADOPTION: THE NEXT MILE

Dear Chairman Pryor and Ranking Member Wicker:

I am writing on behalf of the Office of Community and Economic Development (OCED) at California State University, Fresno (Fresno State). Through our community-based programs, we and our partners annually help thousands of San Joaquin Valley (Valley) residents gain access to services vital to their lives, including high-speed Internet at home.

This letter is to provide input to the record for the Broadband Adoption: The Next Mile hearing. Specifically, we wish to comment on the disappointing experience we have had in trying to connect families to the Internet Essentials Program offered by Comcast. Also, we ask you to support this much-needed program by extending the program beyond the proposed June 2014 date.

Comcast is one of the largest broadband providers for rural areas of the San Joaquin Valley, one of the poorest regions of California. When first introduced, we welcomed Internet Essentials as an opportunity to connect our traditionally un-served population. However, based on the substantial hurdles our residents face when signing up for Internet Essentials, we find ourselves reluctant to support the program due to the long wait before customers can begin using the Internet at home.

The waiting period between the initial call to Internet Essentials and the application arriving in the mail is 8–12 weeks, if the letter comes at all. After submitting the application, another 2–4 weeks elapse before the equipment arrives. Many Valley residents do not have Social Security numbers and are therefore forced to drive long distances to verify identification since Comcast has closed many of its regional offices.

Leaders in the San Joaquin Valley have been pushing for online registration since the beginning of the Internet Essentials Program. Despite what Comcast says, the system is not working properly. The site is often unable to complete address eligibility searches and simply redirects the customer to the 1-855 number again. We understand that new systems need time to work out the bugs, but we have been trying to work with Comcast for many weeks to provide consumer feedback about the poor website operations, to no avail.

Comcast does not effectively advertise Internet Essentials in our area, so our community partners use grassroots educational campaigns to let families know about the program. Comcast also does not provide timely data to tell us which schools are undersubscribed for Internet Essentials so our partners can make best use of their resources to target un-served families for adoption.

My greatest concern, with the program scheduled to end in June 2014, is that the discounted offer will only be available for new enrollments for a few more months, leaving many Valley residents unable to take advantage of this opportunity to connect to broadband at home.

Please consider the Office of Community and Economic Development at California State University, Fresno a supporter of extending the Internet Essentials Program.

If you have any questions regarding our support of expanding the Internet Essentials Program please contact me at mdozier@csufresno.edu.

Sincerely,

MIKE DOZIER,
Executive Director,
California State University, Fresno.

SANTÉE EDUCATION COMPLEX
Los Angeles, CA

Hon. MARK PRYOR,
Chairman, Subcommittee Committee on
Communications, Technology, and the
Internet,
United States Senate,
Washington, DC.

Hon. ROGER WICKER,
Ranking Member, Subcommittee
Committee on Communications,
Technology, and the Internet,
United States Senate,
Washington, DC.

RE: HEARING ON BROADBAND ADOPTION: THE NEXT MILE

My name is Martin O. Gomez and I serve as Principal at Santee Education Complex based in Los Angeles. We serve 1,850 college bound students in the South L.A. community in which 100 percent of our students qualify for free and reduced lunch.

I am writing this letter on behalf of Santee Education Complex and our community to add additional information to the record for the Broadband Adoption: The Next Mile hearing. Unfortunately, the Digital Divide continues to disproportionately impact thousands of low-income students attending Los Angeles schools. Last year, several of those schools located in some of the most economically challenged areas in Los Angeles were invited to participate in a pilot program sponsored by Time Warner Cable (TWC), which according to the company's own estimates serves one quarter of California households.

With much national publicity, TWC announced that it would offer a low-cost broadband offer at \$9.95 for families with students participating in the National School Lunch program at 19 Los Angeles-area schools. This pilot was offered for only two months, from October 1 until November 30, 2012, and without visible outreach by TWC to promote the program. Many of us had hoped that the two-month pilot would offer valuable lessons on the enrollment process and marketing and customer service, which then would allow TWC to scale up the program to reach all students in the National School Lunch program. In fact, the pilot turned out to be a very short "limited time offer". According to the California Emerging Technology Fund, TWC enrolled just 1,200 families nationally in 500 schools.

Even more disappointing, TWC did not offer any explanation as to why they stopped the discount program completely while other cable providers in California saw the value of helping low-income families subscribe to broadband at home.

We think elected officials and policymakers should know that this is a missed opportunity for the largest cable provider in California to play a leadership role in closing the Digital Divide and achievement gap in our state.

Respectfully,

MARTIN O. GORMEZ, Ph.D.,
Instructional Leader,
Santee Education Complex.

PREPARED STATEMENT OF THE NATIONAL HISPANIC MEDIA COALITION

To the Honorable Chairman Mark Pryor, Ranking Member Roger Wicker, and Members of the Subcommittee:

The National Hispanic Media Coalition ("NHMC") writes to supplement the record of the hearing held by the Senate Committee on Commerce, Science, and Transportation, Subcommittee on Communications, Technology, and the Internet entitled "Broadband Adoption: The Next Mile" on October 29, 2013. Thank you for providing me with the opportunity to submit this written testimony.

Slowing Adoption Rates, the Issue of Affordability, and the Cost of Digital Exclusion

While home broadband adoption rates have improved since broadband service was introduced, the adoption rate still lags among certain segments of the population—to include Latinos, African-Americans, seniors, struggling families, people with disabilities, and the less educated. Indeed, as Aaron Smith of the Pew Research Center's Internet Project pointed out during his testimony at the hearing, the pace of broadband adoption overall has "slowed substantially" in recent years.¹

¹*Broadband Adoption: The Next Mile Before the Subcomm. On Commc'ns., Tech., and the Internet of the S. Comm. On Commerce, Sci., and Transp.*, 113th Cong. 1 (2013) (statement of Aaron Smith, Senior Researcher, Pew Research Center's Internet Project), available at http://www.commerce.senate.gov/public/?a=Files.Serve&File_id=8919d402-a852-4246-916e-de623778e7e5 (pointing out that "[a]fter increasing by an average of nearly seven percentage points per

The Latino community, in particular, has struggled to adopt broadband at home. According to a recent Pew report, only 53 percent of Latinos have adopted broadband at home, meaning that almost half of Latinos remain disconnected.² And those who prefer to speak Spanish at home have proven to be one of the most difficult groups to reach, with only 38 percent having broadband within the home.³

Cost of service and relevance have been cited in a number of reports as reasons why many fail to adopt broadband, although it is important to note that a social desirability bias can exist in answers to survey questions about personal income and spending power. In other words, a respondent may point to relevance or lack of interest or necessity as a reason for failing to adopt broadband so that they do not have to admit to the surveyor that they cannot afford to pay the costs associated with service. Further, beyond this bias, there is an important relationship between cost and relevance that should not be overlooked. As Zach Leverenz, the Chief Executive Officer of EveryoneOn, a national non-profit working on bridging the digital divide, mentioned at a recent event, the issue of relevance can be problematic because “people that can’t afford [broadband] also think of it as being not relevant.”⁴

The failure to adopt broadband at home will serve to exacerbate existing socioeconomic disparities, putting Latinos and others who have failed to adopt broadband at a significant disadvantage. The Federal Communications Commission (“FCC”) Broadband Adoption Taskforce has defined the digital divide that exists between those that have broadband and those that do not, as an “opportunity divide” that manifests itself in a number of ways.⁵ For instance, more than 80 percent of Fortune 500 companies, including huge employers like Wal-Mart and Target, only accept job applications online.⁶ In the next decade, nearly 80 percent of jobs will require some digital literacy skills.⁷ And students with broadband at home graduate at a rate 6–8 percent higher than students who lack such access.⁸ Consumers with broadband at home can save up to \$7,000 per year on goods and services, and annual revenues of small businesses with broadband access are, on average, \$200,000 higher than those without broadband.⁹

Industry and Government Each Have an Important Role to Play

Private initiatives and public-private partnerships are a valiant effort to solve the problem of lagging home broadband adoption but, while valuable, some have significant limitations when it comes to trying to reach the remaining hold outs. For instance, many low-cost broadband programs require a household to have a student in the National School Lunch Program in order to be eligible to receive the reduced rate.¹⁰ However, this eligibility criterion targets a group that has outperformed others when it comes to home broadband adoption—families with school-age children. According to a recent National Telecommunications and Information Administration (“NTIA”) report, households with school-age children are already adopting broadband at home at a rate of 79 percent. That rate is 13 percentage points higher than households without school-age children, which only adopted home broadband at a rate of 66 percent.¹¹

Government initiatives can subsidize the cost of service for a wider range of people, potentially creating a price point lower than that offered by Internet service providers, and collect important data associated with any efforts along the way. The Universal Service Fund already subsidizes the cost of broadband connections for

year from 2000 through 2009, the national broadband adoption level increased by a total of just seven percentage points from 2009 through 2013.”).

²KATHRYN ZICKUHR & AARON SMITH, PEW INTERNET AND AMERICAN LIFE PROJECT, HOME BROADBAND 2013 3 (2013), available at http://www.pewinternet.org/~media/Files/Reports/2013/PIP_Broadband%202013_082613.pdf.

³Lee Rainie, Director, Pew Internet and American Life Project, Presentation at Washington Post Live 2013 Bridging the Digital Divide forum (Nov. 5, 2013), available at <http://www.pewinternet.org/Presentations/2013/Nov/The-State-of-Digital-Divides.aspx>.

⁴Video Clip: *I came from the digital divide*, WASH. POST LIVE, available at <http://www.washingtonpost.com/postlive/conferences/digital-divide>.

⁵FCC Broadband Adoption Taskforce, *Broadband Adoption Presentation to FCC Open Meeting*, at slide 4–5 (Nov. 30, 2011), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-311281A1.pdf.

⁶*Id.* at slide 10.

⁷*Id.* at slide 11.

⁸*Id.* at slide 14.

⁹*Id.* at slide 19.

¹⁰See e.g., HOW IT WORKS—COMCAST INTERNET ESSENTIALS, <http://www.internetessentials.com/how-it-works>.

¹¹NTIA, U.S. Dept. of Commerce, *Exploring the Digital Nation: America’s Emerging Online Experience* 26 (June 2013) available at http://www.ntia.doc.gov/files/ntia/publications/exploring_the_digital_nation_-_americas_emerging_online_experience.pdf.

schools and libraries through the E-Rate program, and the cost of basic phone service (or broadband bundled with phone service) for low-income households through the Lifeline program. Both programs have already demonstrated success at connecting underserved communities to valuable communications services. Further, the FCC has conducted a number of pilots to determine how it can best leverage existing programs to make broadband more affordable and accessible in the home and important data has been collected as a result.¹² This data should be analyzed and released to the public. NHMC also agrees with the California Emerging Technology Fund (“CETF”) that any efforts should incorporate the “wealth of knowledge” and the lessons learned by the NTIA through its administration of a number of broadband programs.¹³

Important lessons learned by other, public initiatives, such as those carried out by CETF, can also provide valuable insight into how any future, national programs should be structured for maximum efficacy. For instance, CETF’s School2Home initiative is similar to some of the existing private initiatives in that community engagement happens at the school. However, by targeting low-performing middle schools and stressing parent engagement, the program was able to yield impressive broadband adoption results in hard to reach groups. According to CETF’s testimony, the School2Home initiative increased home broadband adoption among Spanish-speaking parents from 48 percent to 76 percent—a dramatic increase within a group that has historically struggled with broadband adoption.¹⁴ By examining this type of success story and extracting lessons from it, we may have a real shot at significantly increasing home broadband adoption rates in lagging communities.

NHMC believes that spurring home broadband adoption will lead to greater equity in our society and allow historically disadvantaged communities to access opportunities that have been previously unattainable. It was encouraging to see the Subcommittee take up this issue and to see so many Members speak passionately about the importance of bridging the digital divide during the hearing. NHMC looks forward to remaining engaged on this important issue and welcomes any questions from the Subcommittee.

Testimony Prepared By:

MICHAEL SCURATO,
Policy Director,
National Hispanic Media Coalition.

UNITED STATES HISPANIC CHAMBER OF COMMERCE
October 29, 2013

Senator MARK PRYOR,
Chairman,
U.S. Senate Subcommittee on
Communications, Technology, and the
Internet,
Washington, DC.

Senator ROGER WICKER,
Ranking Member,
U.S. Senate Subcommittee on
Communications, Technology, and the
Internet,
Washington, DC.

Chairman Pryor and Ranking Member Wicker:

I write today to thank the Subcommittee on Communications, Technology, and the Internet for its timely hearing entitled *Broadband Adoption: The Next Mile* to discuss the access and adoption of broadband in the United States. As the President and CEO of the United States Hispanic Chamber of Commerce (USHCC), I have had the unique opportunity to observe closely private industry’s investment in closing the digital divide. I want to take this opportunity to highlight a few of the most

¹²For instance, the FCC’s Learning-On-The-Go pilot launched in 2011 to test a program in which students were provided with devices and Internet access at home and in the school. The results of this pilot program have yet to be released. Further, the FCC is currently conducting Lifeline Broadband Pilot, to explore the variables associated with home broadband adoption in low-income households. Once completed, the data collected during this pilot must be analyzed. See *Lifeline and Link Up Reform and Modernization*, WC Docket No. 11–42, *Order*, 27 FCC Rcd. 15842 (rel. Dec. 19, 2012) available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-12-2045A1.pdf.

¹³*Broadband Adoption: The Next Mile Before the Subcomm. On Commc’ns., Tech., and the Internet of the S. Comm. On Commerce, Sci., and Transp.*, 113th Cong. 5 (2013) (statement of Sunne Wright McPeak, President and CEO, California Emerging Technology Fund), available at http://www.commerce.senate.gov/public/?a=Files.Serve&File_id=dae0b397-babc-45b5-8751-2cd7622f6e11.

¹⁴*Id.* at 6.

innovative approaches, programs, and investments undertaken by the private sector to date.

The National Telecommunications & Information Administration (NTIA) recently published a report entitled *Exploring the Digital Nation: America's Emerging Online Experience*, which identified those American communities most affected by the persistent technology gap. Among the communities identified were Hispanic families, who lagged significantly behind their White counterparts in computer ownership, Internet use, and broadband adoption. In fact, only 58 percent of Hispanic households surveyed were connected to the internet.

What is particularly troubling about these adoption rates is that they persist in the face of near universal broadband access. Pro-broadband efforts of the Obama Administration coupled with extensive and sustained investment from the private sector have pushed rates of broadband access to 98 percent. Today, the Internet has become an indispensable tool for educational exploration, social interaction, and entrepreneurial innovation. Broadband further extends opportunities in e-commerce, telecommuting, distance learning, and telemedicine. In the information age, still more need be done to ensure that the opportunities offered by the Internet are expanded to all Americans.

The private sector has essential role to play, and has played an important role. Industry has contributed to the expansion of the Internet infrastructure, designed original programming to bolster broadband adoption rates among the public, partnered with other community institutions to demonstrate and broaden Internet applications, and continues to deliver faster speeds of access.

AT&T is making an impressive investment in the infrastructure delivering high-speed Internet across the country. Just last year, AT&T announced that it would spend \$14 billion over three years expanding its broadband service and high-speed wireless to the majority of its extensive landline network. This considerable contribution will broaden high-speed Internet access to some 8.5 million homes in some of the most difficult to reach communities around the country.

Comcast has instituted an important program in closing the digital divide. Its Internet Essentials program provides discounted broadband rates to lower-income households, as well as access to low-cost computers and digital training. Over one million American households—often connecting to the Internet from their home for the first time—have been served by this pioneering program to date.

Verizon has been at the fore of demonstrating the innovative applications of broadband in daily life. Verizon's Innovative Learning School Program has provided comprehensive training to hundreds of teachers in the utilization and leveraging of online technology in STEM focused classrooms. This has delivered the benefits of broadband to thousands of students in lower-income communities.

Google has not only been a staple of making information accessible to individuals on the web, but has also worked in communities to unveil demonstration projects delivering even faster broadband speeds. Google Fiber is boosting Internet-connection speeds exponentially—to speeds heretofore unseen in the United States. Such deployment of new technology will give rise to new applications making access even more important for the public in the years to come.

While the NTIA's recent report reminds us that still more needs to be done to close the digital divide, leading American companies of the Internet ecosystem are producing groundbreaking tools allowing for connection to the global community, the dissemination of information, and the broad distribution of services. Such investment, experimentation, and ingenuity are bridging the technology gap as we move into the future.

The USHCC looks forward to working with the Senate Subcommittee on Communications, Technology, and the Internet to expand Internet adoption across American households. Should you have any questions regarding this issue please feel free to contact Marco De León, the USHCC Vice President of Government Affairs & Policy, at mdeleon@ushcc.com.

Thank you for your time and consideration of this matter.

Sincerely,

JAVIER PALOMAREZ,
President and CEO,
USHCC.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. AMY KLOBUCHAR TO
AARON SMITH

Question. Please describe how the United States compares to other countries when it comes to broadband adoption? Countries that excel in adoption, what are they doing that can be replicated here? How do our broadband adoption rates impact our ability to compete globally?

Answer. Unfortunately I do not have any definitive answers to your question, as my organization has to this point collected only a modest amount of data on technology adoption and usage outside of the United States. The Pew Research Center's Global Attitudes Project has collected data on general Internet usage rates in select countries worldwide, and has found that the United States is comparable to developed countries such as Britain and Germany in terms of the proportion of its population that goes online.¹ However, we have up to this point never attempted to systematically track broadband access/adoption internationally.

Several other organizations have attempted to examine this issue, but much of the existing data is inconsistently collected or based on a limited subset of countries. One of the more widely accepted measures is a 34-country ranking of fixed and wireless broadband penetration produced regularly by the OECD. On this measure, the United States' ranking in fixed broadband penetration has fallen from 6th in 2002 to 15th in 2012. We currently rank more highly (6th out of 34) in mobile broadband penetration.

Additionally, the Council on Foreign Relations recently released a very nice "background" document that summarizes the current research on broadband adoption across the globe, the economic impact of increased access to broadband, and the steps different countries are taking to promote increased access to high speed Internet service. Their report is available at <http://www.cfr.org/digital-infrastructure/us-broadband-policy-competitiveness/p30687>, and I highly recommend it if you would like a short yet very informative summary of the latest research on the subject.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. AMY KLOBUCHAR TO
BERNADINE JOSELYN

Question 1. NTIA BTOP grants to Sustainable Broadband Adoption programs, like the Blandin Foundation's program, have proved extremely successful. How important was the Federal funding seed money to securing partnerships and other sources of funding?

Answer. Blandin Foundation used the NTIA BTOP application process to spur the interest of statewide, regional and local partners in tackling the digital divide and broadband adoption. When funding was received from NTIA, the promise of the partnership was achieved through a collaborative and detailed design process that respected organizational priorities, capabilities and existing partnership networks.

It is highly unlikely that the MN Intelligent Rural Community Project (MIRC) could or would have been launched without the NTIA funding for the following reasons:

- Sustainable broadband adoption strategies were generally not high on the priority list of our prospective partners.
- Many of these partners have dedicated funding for specific activities; even if sustainable broadband adoption was a priority, there were no dedicated and/or available funds to address the issue.
- With its broad mission of "strengthening rural Minnesota communities," broadband adoption is only one of Blandin Foundation's priorities. Without matching Federal dollars to leverage the foundation's own investment, it is highly doubtful that the foundation would have made the scope of commitment to this work as it did under MIRC.
- Spurred by MIRC's palpable positive impact on the vibrancy of the communities we serve, Blandin Foundation Trustees authorized continued funding of broadband adoption work in 2013–14 at a lesser funding level than MIRC. Absent the NTIA BTOP funds, our current program cannot support the state-wide partnerships enjoyed under MIRC, and thus we have less technical, programmatic, and staff support to offer the participating communities than was available through the federally-funded program.

¹ See <http://www.pewglobal.org/2012/12/12/social-networking-popular-across-globe/>

Our MIRC partners used the NTIA SBA funds to involve a “third ring” of organizations across Minnesota. For example, University of Minnesota Extension used their funds to collaborate with local economic development agencies and chambers of commerce in the delivery of e-commerce training programs. The MN Department of Employment and Economic Development offers another example of cascading partnerships sparked by the Federal funding: they partnered with workforce centers, libraries, and community education programs to reach un and under-employed workers in diverse settings. As a result of these partnerships, digital literacy curricula developed through MIRC were incorporated into Adult Basic Education program offerings across the state.

Blandin Foundation would have been hard pressed to commit technical and process consulting, community coaching *and* financial resources to our demonstration communities without the NTIA SBA funds. Federal financial resources made it possible for the foundation to help communities move relatively quickly from community planning processes to project implementation.

Question 2. What makes your program sustainable and how can any lessons learned be exported to other regions of the country?

Answer. The Minnesota Intelligent Rural Communities project has illustrated sustainability in a number of ways:

With NTIA SBA funding, MN Department of Employment and Economic Development, a MIRC partner, designed and delivered effective, learner-centric, culturally adapted and self-paced digital literacy curricula. But perhaps of equal importance, thanks to diligent coordination efforts, a sustainable system for course delivery is now in place through innovative partnerships with workforce centers, libraries and adult basic education classes provided through community education. By embedding these curricula into adult basic education, the costs to offer these classes are reimbursable to local school districts through state education funding.

In the case of PCs for People, our computer refurbishing and distribution partner, participation in the MIRC project enabled them to reach a scale of sustainable operations, attracting Digital Citizen as a low-cost Internet Service Provider (ISP) partner. Through the project, PCs for People opened four affiliate offices across rural Minnesota. Inspired by their model, other independent community-based computer refurbishment efforts are growing, including with the participation of ISPs enticed by findings that over 80 percent of first-time Internet subscribers retain their subscriptions even after their initial income-adjusted subscriptions expire.

The broadband adoption initiative in the town of Thief River Falls, one of the MIRC communities, has grown to a regional effort. Just recently, regional broadband champions organized the collection of approximately 200 monitors and 100 computers from area businesses. This equipment will be refurbished and distributed to qualifying families. High school students, under supervision of workforce agency staff, do the computer refurbishment and train the new computer owners in basic skills.

Blandin Foundation, in its MIRC design, invested in evaluation. The data provided by the evaluation strategies demonstrated the value and results of the work. That evidence led the Foundation to continue its investment in broadband access and adoption. We also use this data to make the case to local and regional leaders that broadband access and adoption is key to economic vitality.

The Intelligent Community¹ benchmarking and planning processes embedded in MIRC design provided citizens and leaders with a solid understanding of community technology needs and opportunities, and led to each community identifying its own unique priorities and utilizing its unique assets to develop and implement projects to address those needs and seize those opportunities. The benchmarking provided clear evidence of progress in each of the Intelligent Community framework's five focus areas: broadband connectivity; knowledge workforce; innovation; digital inclusion; and marketing and advocacy. This system gives communities tools to quantify their progress and encourages them to continue to move forward.

The websites, applications, school programs and community-based projects launched with the help of NTIA SBA funding (over 100 in all) continue to yield benefits to MIRC communities. For example, the eleven public access Internet sites opened in libraries, grocery stores, American Legion halls, parks, YMCAs, laundromats and many other venues, remain open as part of these organization's “new way of doing business.”

Even more importantly, community leaders, organized as teams through the MIRC project, are now motivated, coached in community leadership skills, informed through ongoing information and training services (webinars, e-newsletters), and de-

¹ Intelligent Community Forum; www.intelligentcommunity.org

terminated to “stay the course.” They continue to respond to community technology opportunities and challenges. For example, when a Minnesota state senator wanted to call host a series of roundtable broadband policy events across the state’s rural counties, MIRC communities stepped forward to host these discussions which helped to elevate the importance of connectivity as a key determinant of Minnesota communities’ economic and social well-being.

Below are some of the lessons we’ve learned about what makes broadband adoption programs effective:

- Our experience in Minnesota supports research results showing that economic growth follows telecommunications investment. However, we’ve also learned that investment in infrastructure is not enough. “If you build it they will come” does not apply to broadband. Concerted, sustained cross-sectoral engagement at the community level is required to create the “culture of use” necessary to deliver on the full promise of digital literacy and global connectivity.
- Even given the socioeconomic and demographic barriers to increasing broadband adoption encountered by the MIRC demonstration communities, it is our experience that programs designed to increase computer access and Internet use for low-income populations *can* address these disparities, although recruiting these target populations to participate in offered programs can be challenging.
- The greatest impacts are achieved when decisions are made closest to home. It has been our experience that rural communities can achieve big results with relatively small amounts of funding when that funding is locally controlled. Encouraging and resourcing community-based teams to set goals and develop plans to achieve them increases community impact.

Communities know best. Involve citizens directly in articulating their community’s broadband adoption and utilization goals to catalyze long-term engagement needed to increase adoption.

“It seems as though communities impacted by this project felt a rejuvenated sense of community because there were so many people rallying to get these projects done for their school, community or organization.”—Jacki Anderson, Upper MN Valley RDC

Local leadership matters. Help local broadband champions get and use skills to frame issues, build and sustain relationships and mobilize people to build a community’s capacity to achieve its broadband goals. Train community leaders and champions to use participatory facilitation skills; effective meeting facilitation can make a big difference in keeping folks coming back to the planning and implementation table.

“Our elected officials now see the importance of broadband for economic development and community vitality.”—Nancy Hoffman, Benton County Economic Development Director

Broadband is not an end in itself. It is a means to the higher ends of increased economic vitality and improved quality of life. Framing this work in these terms, or as a necessary but not sufficient condition for innovation, connectivity, and equal opportunity for all, or as a prerequisite for full participation in our democracy, is likely to be more successful than by calling out the technical infrastructure itself.

“In an era when digital access is an essential element of full participation in modern society, when digital technology can be the deciding factor between economic opportunity and isolation, between social change and increasing inequality, and between democratic participation and standing on the outside looking in, it is critical to the future of our country . . . to ensure that everyone has high-speed . . . access to an open Internet.”—Luis Ubinas, President, Ford Foundation

High-touch outreach works. Effective recruitment strategies for technologically-challenged small business and for historically marginalized populations are intra-community, hyper-local, “high touch,” and personalized. Change follows relationship lines.

“These technology classes have encouraged our Hispanic and Somali immigrants to interact, really for the first time.”—Fatima Said, Project FINE, Winona

Peers make great teachers. Peer-based learning formats that encourage local businesses to share practices, questions and experiments are a popular, low-cost, and easily sustainable tool to build a community’s technological savvy.

[Digital presence course] “Basically gets you acclimated to it [online marketing], and learn how to make it work for you.”—Susan Reiter, Coffee Choices coffee shop, Jackson

Cross-community communication is key. Signage, local media support, and online social media are effective, low-cost ways to spur and sustain energy and excitement for community projects.

"This effort has helped us develop wonderful community connections. We have reached out to our whole community."—Keri Bergeson, Principal, Dawson/Boyd High School

Engage tomorrow's leaders today. Recognize and authentically engage the talents of young people. This next generation of leaders bring energy and sustainability to any community initiative. Youth can serve as co-trainers, technology mentors, partners in computer refurbishment projects, and use their video and other social media to promote their communities.

"My customers are couples planning weddings, so I need my website updated and fresh, and to be found using mobile devices. The students' work on my site and Google Map location was great."—Donna Henry, Henry Catering, Foley

Connect the economic dots. Framing increased sustainable broadband use a necessary but not sufficient ingredient in a "whole systems" approach to strengthening community vitality can help communities see and leverage the connection between technology and benefits to community life. The "whole picture" Intelligent Community framework for community and economic development used in MIRC can help community leaders see how workforce, infrastructure, inclusivity, innovation and marketing/advocacy are mutually interdependent aspects of community vitality.

"This framework brings people together that have not always worked together—technology advocates, workforce, social service agencies, and economic development professionals."—Danna MacKenzie, Cook County IT director

"The involvement of local citizens, government, business and non-profit groups working together to enhance the effort to make the community better by forming a partnership that shares the same goals, aspirations and hope for the future of the whole county."—Michael Haynes, Stevens County Economic Development Director

Have patience. This work takes time. Look for and celebrate early and easy "wins" along the way, but think long-term and build capacity and energy for the long-haul. Money and other resources follow vision and commitment.

Question 3. Can you discuss how investing in broadband adoption is good for the economy? What level of return on investment do you tend to see from broadband adoption programs? What is the best way to measure broadband use and its impacts?

Answer. Broadband is a key driver of innovation and economic development. Evidence abounds that high-speed Internet access has powerful economic benefits (positive impact on median household income, employment, and business growth).

Broadband access is key. . . but so is adoption. Investing in programs that stimulate the use of broadband delivers meaningful economic benefits. According to the report, "Broadband's Contribution to Economic Health in Rural Areas: A Causal Analysis," by B. Whitacre, S. Strover, and R. Gallardo (March 26, 2013), "Non-metro counties with high levels of broadband adoption in 2010 had significantly higher growth in median household income between 2001 and 2010 compared to counties that had similar characteristics in the 1990s but were not as successful at adopting broadband."

Strategic Networks Group, an economic consultant firm working with local governments in North America, Europe and Australia on the benefits of broadband, has compiled evidence from studies they have conducted in North Carolina, Virginia, Kentucky, Illinois, and Nebraska that demonstrate a \$5 million economic development impact for every 1,000 broadband passes installed.² Their data show that 23.4 percent of all new jobs created in the economies they have studied are directly attributable to broadband (*i.e.*, if it had not been for broadband, those jobs would not exist). These are not only IT jobs, but include jobs like shipping, account management, etc. that are needed as the business grows. For example, a study they conducted in North Carolina in 2010 showed that 32 percent of all households surveyed report having home-based businesses or telecommuting, and 14 percent plan to start using broadband at home to support their households. Of businesses surveyed, 56 percent said that access to high-speed broadband was essential for remaining in their current location.

Moreover, businesses that increase their utilization of broadband by ten percent realize a 24 percent gain in revenue and a seven percent reduction in costs. And the higher the degree of sophistication of use of broadband-enabled services, the higher the benefit: 54 percent of revenue from businesses using high levels of broadband utilization come from the Internet.

²<http://sngroup.com/tag/broadband-economic-impacts>

Blandin Foundation recently commissioned SNG to study the ROI in broadband infrastructure and utilization initiatives in two Minnesota counties, Lac qui Parle and Kanabec. The results of this study were illustrative and on par with SNG research and findings in other regions as described above. Generally speaking, an investment of \$120–145,000 in Lac qui Parle and \$175–225,000 in Kanabec might leverage effect as much as 10 to 1; so for every \$1 invested, \$10 is returned in direct and spinoff impacts to the local economies.³

Economic Benefits of Broadband. The following are key findings from SNG's ongoing research into the economic benefits of broadband.

Using broadband creates jobs. Over 22 percent of all new full-time jobs created by 3,326 surveyed businesses are attributed to their use of broadband. This effect is even stronger for the 2,337 surveyed small businesses (fewer than 50 employees) where over one in four new jobs created (26 percent) are attributed to using broadband. Small businesses represent over 95 percent of establishments and almost half of total employment.

Using broadband increases business revenues. 963 small businesses surveyed (fewer than 50 employees) report that over 30 percent of their revenue is attributed to using broadband. More importantly, businesses that make greater use of broadband generate a higher percentage of revenue than businesses that use fewer applications—almost 37 percent of revenue for high users versus less than 10 percent of revenue for low users—a ratio of almost 4 to 1.

Using broadband contributes to economic growth. As businesses increase their use of broadband their new revenues and cost savings contribute to economic growth. For example, increasing utilization of broadband by 5 percent for 1,000 businesses would increase regional GDP by \$17M, add \$1.8M in taxes, create \$9.5M in household income, and create 185 new jobs.

Broadband benefits communities. The availability of broadband is a significant factor in attracting and retaining businesses and households for communities. Over 38 percent of 8,416 broadband households surveyed report that they would very likely relocate to another community if broadband was not available. Over 48 percent of 11,870 businesses with broadband surveyed say that the availability of broadband is essential or very important for selecting their business location. Over 75 percent of these businesses reported that broadband is essential or very important for remaining in their present location. Communities that do not have adequate broadband services risk losing households and businesses over time.

Broadband enables income opportunities for households. Eighteen percent of 9,478 households surveyed operate a home business and 17 percent telework, creating new or improved income opportunities for households. Almost 90 percent of these surveyed home businesses say that broadband is essential for operating their business. Almost half of teleworkers say that they would not have their present job without being able to telework.

Measurement. Measuring broadband use is a tricky problem and one that may be best considered on a case-by-case basis. In Minnesota, for the MIRC project, evaluators utilized three separate methodologies to estimate broadband use in terms of subscribership. First, baseline surveys were conducted in each demonstration community, along with a statewide survey to estimate broadband penetration across all geographies. Second, Minnesota Cable and DSL providers agreed to provide new subscriber information in aggregate, to assist, but still maintain provider confidentiality. And third, we contracted with a private firm to provide detailed Internet transactional data for each of the 11 demonstration areas. Using these three methods project evaluators triangulated the data to derive accurate subscription estimates. Project benchmark surveys on broadband penetration were performed at the end of the project period.

Question 4. What recommendations would you give to this committee on shaping policies to continue promoting broadband adoption, both in terms of funding and programming assistance from Federal agencies? How can NTIA and the FCC effectively support ongoing broadband adoption and meet the goals of the National Broadband Plan?

Answer.

- Provide support to take broadband adoption to higher levels of utilization and sophistication. As important as it is for all Americans to have a basic level of digital literacy, it is also critical that both workforce and business continue to drive their sophistication of use higher so as to fully capture the potential value of the network.

³The Return from Investment in Broadband Infrastructure and Utilization Initiatives, Jan 2014, <http://bit.ly/1ko1kJT>

- As wireless technologies are increasingly counted as an acceptable broadband technology to reach 4 Mbps, ensure that bandwidth caps are set high enough to enable critical customer applications such as telehealth and online/Internet-based learning. Benefits of being connected are diminished if bandwidth caps inhibit sophisticated use of the network.
- Reward programs that focus on the “so what” of adoption. In other words, programs that lead directly to enhanced education, workforce opportunities, business creation and expansion, improved health care outcomes, etc. should be encouraged and supported.
- Four Mbps is not enough bandwidth, now and into the future, to support advanced or even every-day technology use. To attract Federal CAF or other support, providers must invest in network technology improvements that can provide significantly higher capacity.
- Adopt life-line programs for broadband.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. MARCO RUBIO TO
HON. JOHN SUNUNU

Question 1. In your testimony you state that “government should ensure that regulations do not hinder or crowd out investment in the broadband and Internet industries.” Can you expand on that—why do you believe government regulations will hinder broadband deployment and investment?

Answer. In the Telecommunications Act of 1996, Congress adopted a light-touch regulatory approach for the broadband and Internet industries that has led to enormous levels of capital investment. Since that year, telephone, cable, and wireless providers have invested over \$1.2 trillion to build a robust broadband network, and the results are evident. Approximately 99 percent of Americans now have access to broadband, and new Internet-based industries have been created.

There is no sound basis to revisit the regulatory approach that has enabled this success.

Over-regulating broadband would risk dampening providers’ incentives to invest, and because broadband technologies advance so quickly, it would also risk inhibiting the development of new and innovative technologies and practices. Regulation, if any, must be the last option in order to allow the Internet to realize its full potential without the persistent threat of government intrusion.

Broadband adoption is one of the best examples of how the light-touch approach has worked effectively, as broadband adoption has increased faster than almost any other technology. Policymakers should be mindful of this success. Any future regulatory action should avoid applying old regulations to new technologies, and should be tied to actual market failures. Regulation should not be used to pick winners and losers in the broadband marketplace.

And government should not build, or fund other entities to build, broadband networks in areas where unsubsidized private entities have already built such networks.

Government should promote, not hinder, broadband deployment and adoption.

Question 2. I would like you to talk about the importance role wireless broadband plays in the digital economy and in broadband expansion. How important is making more spectrum available to the future of wireless broadband and to promoting competition in the broadband market?

Answer. It is critical. The U.S. is the global leader in mobile broadband across virtually every metric:

- American wireless companies invested more than \$30 billion in building out cutting edge networks last year alone.
- We have roughly half of the world’s 4G LTE customers.
- Smartphones now account for 60 percent of all U.S. mobile phones, and 25 percent of adults own a tablet.
- 1 out of 10 American’s only broadband connection is their smartphone.
- By 2012, 82 percent of Americans were able to choose between at least 4 wireless broadband providers.
- Traffic on licensed mobile wireless networks increased 70 percent in 2012.
- Over one-third of all IP traffic is now carried over unlicensed Wi-Fi networks, and Wi-Fi traffic is expected to triple between 2011 and 2016.
- The wireless industry supports more than 3.8 million high-paying American jobs—2.6 percent of all U.S. employment. Wireless employees are paid 65 per-

cent higher than the average worker. Wi-Fi and other unlicensed services support billions more in investment and economic opportunity.

Spectrum is the lifeblood of this mobile revolution—yet the spectrum in use, and in the pipeline, is not sufficient to handle the anticipated growth in demand. As a result, there is a looming threat that, just around the corner, we will see congested networks leading to slower speeds and lost opportunities for consumers. If we want to continue our global leadership, more spectrum is needed for the private sector, both licensed and unlicensed.

Consumers want reliable high-speed wireless services. These services are not possible without more spectrum being made available to private companies. Wireless broadband has unleashed waves of innovation that have driven industries like the apps economy—which now employs over 750,000. Making more spectrum available will only further drive innovation and job growth.

Sufficient spectrum is vital to ensure the availability of future wireless capacity that Americans demand as well as to promote competition among existing providers and new entrants alike. With sufficient spectrum resources, providers will have the ability and incentive to invest in faster and more robust networks and to provide new and innovative broadband offerings.

It is very important for the FCC to move quickly on these issues. It can take up to 10 years and cost billions of dollars for newly acquired spectrum to be used in the marketplace. If we want to stay at the forefront of the wireless technology tomorrow, the FCC must release new spectrum as soon as possible.

Question 2a. Do you think that the FCC neglects to consider wireless broadband a vibrant competitor to wireline broadband because doing otherwise would destroy the “scarcity” argument that underlies the very need for regulation?

Answer. Wireless broadband can, and should, be considered a competitor to wired broadband. Today’s high-speed wireless networks are capable of speeds that meet, and sometimes exceed, the speeds offered by some wired broadband services. A study conducted last year by RootMetrics found that the average downstream speed across the three national LTE networks at that time ranged from 10.3 Mbps to 18.6 Mbps with maximum speeds up to 57.7 Mbps. To put this into context, the FCC requires a service to provide only 4 Mbps downstream in order to be considered “broadband.”

Roughly two-thirds of U.S. broadband connections are wireless today, and minority communities have far higher than average mobile adoption and utilization levels. Each household makes its own decisions based on its needs and budget. Some prefer to subscribe to both wired and wireless broadband options, while others select one or the other. The FCC should not second guess those decisions.

Question 3. Pew says that because there is “no widespread consensus as to whether 3G or 4G smartphones qualify as ‘broadband’ speed, and [because] many would question whether they offer the same utility to users as a dedicated home Internet connection”, wireless broadband connections are not included in Pew’s definition of “broadband user.” Given the widespread deployment and significant adoption of 4G technology, is this “wireless isn’t equal” thinking correct?

Answer. No, the notion that wireless services cannot qualify as “broadband” is simply outdated and inaccurate. The characteristics of LTE wireless broadband service—including the speeds noted above—and the popularity of wireless broadband offerings today contradict any efforts to systemically exclude or discount them.

Both wired and wireless broadband connections allow users to stream videos and music, access news and social media websites, edit online documents, and access cloud-based software. In addition, both wired and wireless connections provide access to health care, education, and job information (functions which the FCC has rightly identified as essential). Given the exponential growth in wireless broadband, it is imperative for the government to consider wireless services in any assessment of the broadband market in order to properly evaluate competition across platforms.