

**TESTIMONY OF
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**BEFORE THE
U.S. SENATE COMMITTEE ON COMMERCE, SCIENCE, & TRANSPORTATION
SUBCOMMITTEE ON COMMUNICATIONS, TECHNOLOGY, AND THE INTERNET**

**HEARING ON
“BROADBAND ADOPTION: THE NEXT MILE”**

OCTOBER 29, 2013

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, DC., 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

¹ See 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.

networks capable of delivering speeds of 100 Mbps and higher.² More than 300 million Americans have access to 4G LTE mobile 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 28th 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

² See 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).

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

⁴ See 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.”).

⁵ Richard 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.*

⁶ See Akamai, *The State of the Internet*, at 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.

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

⁹ Broadband 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).

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 connection on a portion of our network from Ashburn, Va. to Charlotte, N.C.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

¹⁰ Diana 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.

¹² See 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>.

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-Industrys-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,

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 divisions 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

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-ereaders.aspx> (Oct. 18, 2013) (“The number of Americans ages 16 and older who own tablet computers has grown to 35%.”); 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% of American adults are now smartphone owners”).

²² *Pew Home Broadband 2013* at 4.

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

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%20adults_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.

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 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), email (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-

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.

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.

²⁸ *ConnectED: President Obama’s Plan for Connecting All Schools to the Digital Age*, The White House, at 2, (June 6, 2013) at http://www.whitehouse.gov/sites/default/files/docs/connected_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.

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 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

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.”).

³¹ See Press Release, U.S. Senate Committee on Commerce, Science, & 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-aa94-497d-a73f-5c951ff72372&Group_id=4b968841-f3e8-49da-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.”).

³² See 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.

³³ To 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.”).

³⁴ See 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”).

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 continues 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.

³⁵ See, 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.”).