

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)

Inquiry Concerning the Deployment of)
Advanced Telecommunications Capability to)
All Americans in a Reasonable and Timely)
Fashion, and Possible Steps To Accelerate)
Such Deployment Pursuant to Section 706 of)
the Telecommunications Act of 1996, as)
Amended by the Broadband Data)
Improvement Act)

GN Docket No. 11-121

COMMENTS OF AT&T INC.

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COMMENTS OF AT&T INC.

INTRODUCTION AND SUMMARY

AT&T Inc. (“AT&T”) respectfully submits the following comments in response to the Commission’s eighth inquiry¹ concerning the deployment of advanced telecommunications capability to all Americans pursuant to Section 706 of the Telecommunications Act of 1996 (“1996 Act”).²

Since the Telecommunications Act of 1996, broadband providers have invested more than **\$1 trillion**, and broadband deployment and investment – in both wireline and wireless

¹ *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, Eighth Broadband Progress Notice of Inquiry, GN Docket No. 11-121, FCC 11-124 (rel. Aug. 5, 2011) (“NOI”).

² Because the Commission has traditionally focused on broadband provided to residential and small business customers in its Section 706 inquiries, AT&T directs these comments primarily to addressing issues that affect those market segments, unless otherwise noted. In addition, throughout these comments, “broadband” is used interchangeably with “advanced telecommunications capability” and is used to describe high-speed Internet services generally, regardless of whether they meet the speed threshold adopted in the Seventh Broadband Progress Report (*i.e.*, 4 Mbps downstream/1 Mbps upstream).

technologies – continue to be robust, even as the economy overall languishes. Despite this extraordinary result, in the Sixth and Seventh Broadband Progress Reports, the Commission reversed more than a decade of findings and concluded that broadband was not being deployed on a reasonable and timely basis to all Americans. But there was no decline in the deployment or availability of broadband to justify that determination. To the contrary, the Commission’s own analysis showed that 95 percent of housing units had broadband access and that there was continued improvement with respect to each of the broadband metrics the Commission has traditionally considered. Rather, the Commission reached that conclusion by changing its mind about what it meant for “broadband” to be “deployed” to “all Americans” on a “reasonable and timely” basis, adopting new definitions of those terms that permit only a negative answer. Under the Commission’s current approach, the existence of just one American household without broadband access mandates a blanket finding that broadband deployment is not reasonable and timely in the United States. That approach is illogical, is contrary to Congress’s intent, and obscures the impressive gains that broadband providers continue to make in improving the availability, speed, and affordability of their service offerings to the benefit of consumers.

With respect to the inquiry that matters most under Section 706 – whether broadband is “being deployed” (as opposed to whether it is already available) – the evidence is overwhelming. There is massive ongoing investment in next-generation wireline broadband technologies that will provide even greater speeds to large swaths of the population. AT&T, Verizon, and others have invested heavily to make FTTx services available to tens of millions of homes. And cable operators are also now far along in the process of making very high-speed DOCSIS 3.0 technology available to their subscribers. The massive growth of wireless broadband services –

which the Commission largely excluded from the analysis in the Seventh Report³ – further compels the conclusion that broadband deployment is generally reasonable and timely. At least 98 percent of the U.S. population now has access to 3G wireless broadband services, and wireless carriers also are investing tens of billions of dollars a year to expand 3G and now 4G services. Faster satellite broadband services also are in the process of being deployed by ViaSat (and its WildBlue subsidiary) and Hughes Network Systems.

To be sure, there are still some remote areas – typically rural pockets that are extremely costly to serve – where, as the Commission has recognized, no viable business case appears to support the future deployment of certain terrestrial broadband technologies. But that fact is not inconsistent with what Congress would likely have expected when enacting and then subsequently amending Section 706, particularly given the historical difficulty of delivering many types of goods and services to such segments of the population. Critically, however, the fact that broadband deployment has proven challenging to a small segment of the population does not and cannot support a blanket conclusion that, overall, broadband deployment is untimely or unreasonable. To the contrary, the existence of these limited areas would at most justify a targeted negative finding with respect to those areas alone. Thus, whatever conclusion the Commission reaches with respect to those discrete areas that still lack access to certain broadband technologies and that are unlikely to attract private broadband investment going forward, the Commission should find that broadband deployment is otherwise both reasonable and timely.

³ *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, Seventh Broadband Progress Report and Order on Reconsideration, 26 FCC Rcd 8008 (2011) (“Seventh Section 706 Report”).

Finally, with respect to those areas that lack access to certain broadband technologies today and that current business models are likely to leave unserved in the near future, there are several steps the Commission can take to help accelerate deployment. The four most important steps the Commission can take to further accelerate broadband deployment are to: (1) eliminate all legacy universal service support over the course of five years and transition that support to a Connect America Fund for fixed broadband service and an Advanced Mobility Fund for mobile wireless broadband service, (2) set a date certain for the PSTN sunset as it did for the analog TV sunset, and set forth an approach for orderly transition to IP networks consistent with the Technology Advisory Council’s recommendations, (3) approve the AT&T/T-Mobile USA transaction, which will enable AT&T to fulfill its commitment to deploy 4G Long-Term Evolution (LTE) broadband services to 97 percent of all Americans within six years after closing, without public funding, and (4) consistent with the recommendations of the *National Broadband Plan*, make additional spectrum available to address the growing demand for mobile broadband services.

I. BROADBAND IS BEING DEPLOYED ON A REASONABLE AND TIMELY BASIS

The ultimate inquiry under Section 706(b) of the 1996 Act is whether “advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.”⁴ The statute defines “advanced telecommunications capability” not with respect to any particular technology or numerical speed threshold, but in terms of the services that consumers seek to access, namely “high-speed, switched, broadband telecommunications capability that

⁴ 47 U.S.C. § 1302(b).

enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.”⁵

In the Seventh Report, the Commission continued to adopt as a proxy for the statutory definition a numerical measure that requires 4 Mbps downstream and 1 Mbps upstream, to “reflect the marketplace evolution in technology, applications, and services available to consumers.”⁶ Even under that aggressive definition, broadband is being deployed on a reasonable and timely basis, as the Commission’s own analysis confirms. Moreover, under a definition that more accurately reflects the language and spirit of the statute, broadband deployment is even more advanced. Although there continue to be some remote areas without certain terrestrial broadband technologies and where the economics make near-term deployment unlikely, those areas do not support a blanket finding that broadband is not being deployed on a reasonable and timely basis, but at most support a limited negative finding as to those geographic areas.

A. Virtually All U.S. Households Already Have Access to Broadband That Meets the Commission’s Own Aggressive Definition of Broadband, and Additional Broadband Deployment Is Continuing at a Healthy Pace

The private sector has invested over *\$1 trillion* dollars to build broadband networks from coast to coast over a variety of different fiber, copper, cable, wireless, satellite, and other platforms, and has created the broadband-enabled services, applications, and content to fill those networks.⁷ As a result, broadband is now widely available. Just as important under the statute,

⁵ *Id.* § 1302(d)(1).

⁶ NOI ¶ 6. The Commission has acknowledged that “[a] universalization target of 4 Mbps download and 1 Mbps upload is aggressive. It is one of the highest universalization targets of any country in the world.” FCC, *Connecting America: The National Broadband Plan*, at 135 (Mar. 2010) (“*National Broadband Plan*”).

⁷ See USTelecom, *US Telecom Broadband Quickfacts*, <http://www.ustelecom.org/Learn/ReportsandStudies/Industry-Stats/> (“The broadband industry

however, broadband investment also is continuing to occur at a significant pace, which is all the more impressive given the economic downturn that has diminished private investment throughout much of the economy.

1. *Wireline Broadband Is Widely Available from a Range of Providers, and There Is Massive Investment in Next-Generation Wireline Broadband Networks*

According to the Commission's own analysis, approximately 95 percent of American housing units have access to wireline broadband that meets the Commission's aggressive definition of at least 4 Mbps downstream and 1 Mbps upstream.⁸ Many additional households have access to broadband at speeds that, while not strictly meeting this definition, are robust enough to give consumers access to the services they demand.⁹ The analysis further shows that consumers have multiple existing wireline broadband alternatives and that there is significant ongoing investment to expand the availability and speeds of wireline broadband.

has invested \$1.1 trillion dollars since 1996. The wireline industry alone has invested approximately \$600 billion during that period.”); *see also, e.g.*, Robert C. Atkinson et al., Columbia Institute for Tele-Information, *Broadband in America – 2nd Edition*, An Update of the 2009 Report Originally Prepared for the Staff of the FCC's Omnibus Broadband Initiative, at 79, Table 15 (May 2011) (“*CITI Broadband in America Report, 2nd Ed.*”) (broadband capex data for 2008-2010 and forecasts for 2011-2015); National Telecommunications & Information Administration (NTIA), U.S. Dep't of Commerce, *Networked Nation: Broadband in America 2007*, at 32-34 (Jan. 2008), http://www.ntia.doc.gov/files/ntia/publications/networkednationbroadbandinamerica2007_0.pdf (capex data through 2007).

⁸ *See National Broadband Plan* at 136 & 157 nn.6, 7; FCC, *The Broadband Availability Gap*, OBI Technical Paper No. 1, at 17 (Apr. 2010) (“*Broadband Availability Gap Paper*”). The Commission's latest Section 706 report does not provide adequate data to update this figure, however, there is no basis to believe that the percentage of households has decreased since this analysis was last performed; to the contrary, and as discussed further below, broadband deployment has only continued to grow.

⁹ *See Broadband Availability Gap Paper* at 17, Exhibit 2-A.

Broadband service from cable providers is available to 93 percent of U.S. households,¹⁰ at speeds typically ranging from 1.5 to 105 Mbps downstream and 384 Kbps to 10 Mbps upstream.¹¹ According to the latest available data, DSL service is available to 84 percent of homes where incumbent LECs offer local telephone service,¹² at speeds typically ranging from 500 Kbps to 15 Mbps downstream and 128 Kbps to 768 Kbps upstream.¹³ In addition, at the end of 2010, fiber-based broadband (FTTx) that promises much higher speeds (up to 150 Mbps downstream and 35 Mbps upstream, or more) was made available to 40 percent of homes.¹⁴ The Commission's recently released Form 477 data indicate that approximately 96.6 percent of census tracts have two or more providers of fixed broadband service, and that 79.6 percent of

¹⁰ See NCTA, *Industry Data: Availability*, <http://www.ncta.com/StatsGroup/Availability.aspx> (as of Mar. 2010); see also Ind. Anal. & Tech. Div., Wireline Comp. Bur., FCC, *Internet Access Services: Status as of June 30, 2010*, at 49, Table 24 (Mar. 2011) (“*June 2010 Internet Access Report*”) (reporting cable modem availability to 97 percent of residential premises where cable TV service is available, as of June 2010).

¹¹ See, e.g., Comcast, *Current Customer Offers*, <https://www.comcast.com/shop/buyflow2/productsexisting.csp> (Internet service packages with downstream speeds from 1.5 Mbps to 105 Mbps and upstream speeds from 384 Kbps to 10 Mbps); Time Warner Cable, *Cable vs. DSL: New York City*, <http://www.timewarnercable.com/nynj/learn/hso/cablevsdsl.html> (downstream speeds of 10 Mbps and 15 Mbps, upstream speeds of 512 Kbps and 768 Kbps).

¹² See *June 2010 Internet Access Report* at 49, Table 24.

¹³ See, e.g., AT&T, *AT&T High Speed Internet Promotions*, <http://att-promotions.com/att-dsl.php> (downstream speeds of 768 Kbps to 6 Mbps; upstream speeds of 128 Kbps to 768 Kbps); Verizon, *High Speed Internet Plans*, <http://www22.verizon.com/Residential/HighSpeedInternet/Plans/Plans.htm> (downstream speeds of 500 Kbps to 15 Mbps).

¹⁴ See Simon Flannery et al., Morgan Stanley, *Telco Broadband Subs May Fall from 2012E Onwards*, at 4, Exhibit 6 (Apr. 19, 2011) (estimating telco FTTx homes passed across the U.S. to be 40 percent in 4Q10); AT&T, *AT&T U-verse High Speed Internet*, <http://www.att.com/u-verse/explore/internet-landing.jsp> (Internet service plan options with download speeds ranging from 3 Mbps to 24 Mbps); Verizon, *FiOS Internet*, <http://www22.verizon.com/Residential/FiOSInternet/Plans/Plans.htm> (Internet service plan options with download speeds ranging from 15 Mbps to 50 Mbps); Verizon News Release, *New Verizon FiOS Internet 150/35 Mbps Offer Launches Consumers into Broadband's Fastest Lane* (Nov. 22, 2010), http://www22.verizon.com/investor/newsatglance/news.htm?dID=6166&dDocName=NEWS_1095&xCategory=News (Verizon offers a 150 Mbps downstream/35 Mbps upstream broadband service).

census tracts have three or more providers.¹⁵ These data further show that 91.7 percent of census tracts have two or more providers of residential ADSL, cable modem, and/or fiber, and 53.4 percent have three or more providers.¹⁶ Thus, not only is fixed wireline broadband widely available, it is offered by multiple competing providers.

In addition to the fact that some form of wireline broadband already is available to the overwhelming majority of American households, with respect to the inquiry that matters most under Section 706 – whether broadband is “being deployed” (as opposed to whether it is already available) – the evidence is more convincing still. The Columbia Institute for Tele-Information has estimated that broadband providers will invest more than \$267 billion between 2008 and 2015, or approximately \$33 billion annually.¹⁷ AT&T is investing billions of dollars to expand the availability of its fiber-based U-verse service to reach 30 million homes by the end of 2011.¹⁸ Verizon has stated that it will invest \$23 billion to make FiOS available to 18 million premises by 2012.¹⁹ By the end of 2011, CenturyLink’s legacy Qwest network will pass approximately

¹⁵ See *June 2010 Internet Access Report* at 55, Table 27.

¹⁶ See *id.*

¹⁷ See *CITI Broadband in America Report, 2nd Ed.* at 79, Table 15.

¹⁸ See Niraj Sheth, *AT&T Rethinks U-Verse Spending After FCC Move*, WSJ.com (June 15, 2010), http://online.wsj.com/article/NA_WSJ_PUB:SB10001424052748704009804575308740137159622.html (citing AT&T CEO Randall Stephenson’s comment that AT&T spends a “couple billion” dollars a year on U-verse); Alan Burkitt-Gray, *AT&T Plans “Aggressive Ramp” of LTE To Challenge Verizon’s Early 4G Lead*, *Global Telecoms Business*, at 17 (Nov./Dec. 2010), http://www.att.com/Common/about_us/downloads/leadership_spotlight/RLS_GTB_Nov-Dec2010.pdf (AT&T plans to make U-Verse available to 30 million homes by the end of 2011). As of the end of June 2011, AT&T’s U-verse network passes more than 29 million living units. U-verse bundles are available in 136 MSAs across 22 states. AT&T, *U-verse Update: 2Q11*, http://www.att.com/Common/merger/files/pdf/2Q11_U-verse_Update_fact_sheet.pdf.

¹⁹ See *Verizon Communications Inc. at Barclays Capital Global Communications, Media, and Technology Conference – Final*, FD (Fair Disclosure) Wire, Transcript 052411a4098804.704 (May 24, 2011) (according to Verizon Communications Inc. EVP & CFO Fran Shammo, FiOS represents a \$23 billion investment); Verizon, *Corporate History*, Chapter 2,

5.75 million homes (out of 13 million homes) with FTTN capabilities; CenturyLink continues to build out approximately one million homes per year.²⁰ As a result of these various investments, analysts estimate that advanced offerings of 24 Mbps to 150 Mbps downstream and 896 Kbps to 35 Mbps upstream will be available from AT&T, Verizon, and CenturyLink to 47 percent of U.S. households by the end of 2012.²¹

In addition to these fiber-based deployments, each of the major cable operators is deploying DOCSIS 3.0, as well as expanding the reach and speeds of earlier DOCSIS versions. The Commission's Seventh Report stated that 80 million homes (or 65 percent of the 123 million

<http://www22.verizon.com/investor/corporatehistory.htm> (“From 2004 through 2010, [Verizon] invested more than \$20 billion to deploy Verizon’s fiber network past 15.6 million premises, with plans to eventually pass more than 18 million premises, or more than 70 percent of its landline service territory.”); *Verizon at Consumer Electronics Association International CES Opening Keynote Address – Final*, FD (Fair Disclosure) Wire, Transcript 010611a3646649.749 (Jan. 6, 2011) (according to Verizon’s then-President & COO Lowell McAdam, Verizon’s FiOS network “will serve about 18 million households by the time we finish in the next year or so.”). As of June 30, 2011, Verizon’s FiOS network passed 16.1 million premises. Verizon, *Investor Quarterly: Second Quarter 2011*, at 6 (July 22, 2011), http://www22.verizon.com/investor/investor-consump/groups/financial/documents/investorrelation/2011_q2_qb.pdf.

²⁰ See *Centurylink Inc. at Jefferies & Co. Global Technology, Internet, Media & Telecom Conference – Final*, FD (Fair Disclosure) Wire, Transcript 051211a4045670.770 (May 12, 2011) (statement by CenturyLink CFO Stewart Ewing); *Q2 2011 Centurylink Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080311a4146247.747 (Aug. 3, 2011) (question and answer by Piper Jaffray & Co. analyst Christopher Larsen and CenturyLink EVP & CFO Stewart Ewing).

²¹ See, e.g., CenturyLink, *CenturyLink High-Speed Internet Service Residential Pricing*, http://qwest.centurylink.com/legal/highspeedinternetsubscriberagreement/files/HSI_Consumer_Rate_Card_ENG_v35_080811.pdf (upstream speeds of 896 Kbps to 20 Mbps); AT&T, *AT&T U-Verse High Speed Internet*, <http://www.att.com/u-verse/explore/internet-landing.jsp?fbid=BC5YG3Xz1Bx> (AT&T offers download speeds up to 24 Mbps); Verizon News Release, *New Verizon FiOS Internet 150/35 Mbps Offer Launches Consumers into Broadband’s Fastest Lane* (Nov. 22, 2010), http://www22.verizon.com/investor/newsatglance/news.htm?dID=6166&dDocName=NEWS_1095&xCategory=News (Verizon offers a 150 Mbps downstream/35 Mbps upstream broadband service to the majority of homes passed by the FiOS network); Jessica Reif Cohen et al., Bank of America/Merrill Lynch, *Battle for the Bundle: Best of Times . . . Worst of Times*, at 9, Table 5 (Aug. 23, 2010) (estimating fiber reach).

housing units with cable broadband) were upgraded to DOCSIS 3.0 at the end of 2010.²² Cablevision has deployed DOCSIS 3.0 across the 5 million homes in its footprint.²³ Comcast now reaches 90 percent of its footprint with DOCSIS 3.0.²⁴ Time Warner Cable has deployed DOCSIS 3.0 service to approximately 60 percent of its footprint, and expects to complete its rollout next year.²⁵ Analysts estimate that Cox has deployed DOCSIS 3.0 to 75 percent of its footprint.²⁶ Charter has deployed DOCSIS 3.0 to 85 percent of its footprint, and “expect[s] to be essentially complete by the end of the year.”²⁷ These DOCSIS 3.0 upgrades give cable operators “the capability to offer speeds of more than 100 Mbps down the road as [they] see consumer interest.”²⁸ Overall, analysts estimate that, as a result of these investments, advanced offerings of

²² See Seventh Section 706 Report ¶ 3 & n.18.

²³ See CableLabs, *D3 – DOCSIS 3.0*, http://www.cablelabs.com/cablemodem/downloads/docsis_30.pdf.

²⁴ See *Q2 2011 Comcast Corp Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080311a4141455.755 (Aug. 3, 2011) (statement by Comcast Corp. EVP & President Neil Smit). Comcast’s DOCSIS 3.0 upgrades make the company “50 megabits capable in about 90% of [its] footprint,” and “105 megabits capable in about 80% of [its] footprint.” *Comcast Corp. at Barclays Capital Global Communications, Media, and Technology Conference – Final*, FD (Fair Disclosure) Wire, Transcript 052411a4055044.744 (May 24, 2011) (statement by Comcast Corp. CFO Mike Angelakis).

²⁵ See *Q2 2011 Time Warner Cable Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 072811a4094690.790 (July 28, 2011) (statement by Time Warner Cable Inc. President and CEO Glenn Britt).

²⁶ See Simon Flannery et al., Morgan Stanley, *Telco Broadband Subs May Fall from 2012E Onwards*, at 10, Exhibit 12 (Apr. 19, 2011). As of August 2010, Cox had deployed DOCSIS 3.0 to more than 40 percent of its footprint. *Cox Launches 50/5 Internet Speeds in Connecticut with DOCSIS 3.0*, PRNewswire (Aug. 12, 2010), <http://www.prnewswire.com/news-releases/cox-launches-505-internet-speeds-in-connecticut-with-docsis-30-100540104.html>.

²⁷ See *Q2 2011 Charter Communications Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080211a4153740.740 (Aug. 2, 2011) (statement by Charter Communications Inc. President & CEO Mike Lovett).

²⁸ *Id.* (statement by Charter Communications Inc. President & CEO Mike Lovett).

50 Mbps or more downstream will be available from cable companies to 89 percent of households served by cable by the end of 2012.²⁹

2. *Multiple Wireless Broadband Alternatives Are Likewise Widely Available, and There Is Exploding Investment from Existing Providers and New Entrants*

Wireless broadband also is widely available from a range of providers and technologies. As with wireline broadband, moreover, there is enormous new investment in wireless broadband that is extending the reach and expanding the speeds of these services.

The Commission's most recent analysis shows that 98.5 percent of the U.S. population has 3G wireless coverage from one or more providers, and 91.9 percent is covered by two or more providers.³⁰ Consistent with this rapid growth, the United States is the largest smartphone market in the world.³¹ As analysts have noted, data traffic is now migrating rapidly from wireline to wireless traffic – just as occurred with voice traffic in the previous decades.³²

Clearwire reported that, “[o]n average, [its] mobile 4G customers are using more than 7 GB of

²⁹ See Jessica Reif Cohen et al., Bank of America/Merrill Lynch, *Battle for the Bundle: Back in Black*, at 7 (Mar. 11, 2011).

³⁰ See *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, Fifteenth Report, WT Docket No. 10-133, FCC 11-103, at 7 & ¶ 46, Table 7 (rel. June 27, 2011) (“Fifteenth CMRS Report”).

³¹ See Canalys Press Release, *Google's Android Becomes the World's Leading Smart Phone Platform* (Jan. 31, 2011), <http://www.canalys.com/newsroom/google's-android-becomes-world's-leading-smart-phone-platform>.

³² See, e.g., John C. Hodulik et al., UBS, *The 4G Report: The Strong Get Stronger*, at 29 (Mar. 15, 2011) (“The main driver of wireless broadband substitution is the download speeds made available by 4G deployment.”); Jonathan Chaplin et al., Credit Suisse, *CS Telco – Breaking View*, at 1 (Mar. 16, 2011) (noting that tablet sales “could exacerbate wireless broadband substitution. . . . The majority of households will likely consume significant amounts of data and will need a wired broadband connection to make this possible; however, households that consume modest amounts of data may end up dropping their wired broadband connection as they switch from PCs to wireless network connected tablets.”).

data per month,”³³ which, according to Commission analysis, places them among the heaviest 25 percent of broadband consumers in the United States.³⁴

Satellite-based broadband, as the Commission’s Omnibus Broadband Initiative technical paper noted, also “can provide service to almost any subscriber regardless of location and at roughly the same cost, [and] could be an attractive part of the overall solution” for unserved areas.³⁵ ViaSat’s WildBlue satellite broadband service is “available in virtually every location across the contiguous United States,” “even in rural areas.”³⁶ Hughes Network Systems’ consumer broadband service “reaches all 50 states, Puerto Rico and parts of Canada,” and it has “focused [its] marketing and sales efforts on the underserved markets that would be less likely to receive terrestrial broadband service.”³⁷

At the same time, investment in new terrestrial wireless broadband networks is exploding. From 2001 through 2010, wireless carriers invested a combined average of \$22 billion per year.³⁸ Deloitte estimates that wireless carriers will invest an additional \$25 billion to \$53 billion in building out their 4G networks between 2012 and 2016 (which it further estimates

³³ Clearwire Press Release, *Clearwire Extends 4G Leadership in the United States* (Mar. 23, 2010) (statement by Clearwire CEO Bill Morrow).

³⁴ See FCC, *Broadband Performance*, OBI Technical Paper No. 4, at 6 & Exhibit 4 (Aug. 2010).

³⁵ *Broadband Availability Gap Paper* at 5.

³⁶ WildBlue, *Frequently Asked Questions*, http://www.wildblue.com/aboutWildblue/qaa.jsp#1_1; WildBlue, <http://www.wildblue.com>. WildBlue offers speeds up to 1.5 Mbps downstream and up to 256 Kbps upstream. See WildBlue, *WildBlue vs. Dial-Up*, http://www.wildblue.com/aboutWildblue/vs_dial_up.jsp.

³⁷ Hughes Network Systems, LLC, Form 10-K, at 7 (SEC filed Mar. 7, 2011), <http://www.sec.gov/Archives/edgar/data/1376567/000119312511057892/d10k.htm>.

³⁸ See Comments of CTIA – The Wireless Association, at 11, Fig. 2, *Acceleration of Broadband Deployment: Expanding the Reach and Reducing the Cost of Broadband Deployment by Improving Policies Regarding Public Rights of Way and Wireless Facility Siting*, WC Docket No. 11-59 (FCC filed July 18, 2011). This was spent “solely on network build-out,” and does not include investments at FCC auctions to acquire spectrum licenses. See *id.* at 11.

will lead to the creation of 371,000 to 771,000 jobs, and GDP growth of \$73 billion to \$151 billion).³⁹ AT&T has upgraded its 3G network with HSPA+, which enables 4G speeds when combined with Ethernet or fiber backhaul.⁴⁰ AT&T will launch 4G LTE in five markets this summer, and plans to offer the service to customers in at least 15 markets, covering 70 million Americans, by the end of 2011.⁴¹ AT&T expects to have approximately 80 percent of its LTE deployment completed by the end of 2013.⁴² AT&T has committed to deploying LTE to 97 percent of Americans within six years after closing the AT&T/T-Mobile USA merger.⁴³ This represents an additional 55 million Americans and more than 1 million square miles (from less than 20 percent of the U.S. land mass to approximately 55 percent), that will be covered by AT&T's LTE service as a result of the transaction.⁴⁴

Other wireless carriers are making similar investments. Verizon Wireless, which spent \$5.4 billion in wireless capital expenditures in the first six months of this year, now provides LTE service in 117 markets covering more than 160 million people, and is “well on track with

³⁹ See Deloitte, *The Impact of 4G Technology on Commercial Interactions, Economic Growth, and U.S. Competitiveness* (Aug. 2011), http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/TMT_us_tmt/us_tmt_impactof4g_081911.pdf.

⁴⁰ See AT&T, *4Q 2010 Investor Briefing*, at 5-6 (Jan. 27, 2011), http://www.att.com/Investor/Financial/Earning_Info/docs/4Q_10_IB_FINAL.pdf.

⁴¹ See AT&T News Release, *First LTE/HSPA+ Devices Arrive in AT&T Stores Aug. 21* (Aug. 16, 2011), <http://www.att.com/gen/press-room?pid=20671&cdvn=news&newsarticleid=32431&mapcode=consumer|mobile-devices>.

⁴² See AT&T To Acquire T-Mobile USA from Deutsche Telekom – Final, FD (Fair Disclosure) Wire, Transcript 032111a3913548.748 (Mar. 21, 2011) (statement by AT&T Inc. Chairman, CEO & President Randall Stephenson).

⁴³ See Joint Opposition of AT&T Inc., Deutsche Telekom AG, and T-Mobile USA, Inc. to Petitions To Deny and Reply to Comments at 75-76, *Applications of AT&T Inc. and Deutsche Telekom AG, for Consent To Assign or Transfer Control of Licenses and Authorizations*, WT Docket No. 11-65 (FCC filed June 10, 2011) (“Joint Opposition”).

⁴⁴ *Id.*

[its] plan to have coverage of 185 million POPs or better by the end of 2011.”⁴⁵ Verizon Wireless “will be substantially through with [its] build” by the end of 2012, with its entire current 3G footprint covered by 4G by mid-2013.⁴⁶ T-Mobile USA, which spent \$1.4 billion in wireless capital expenditures in the first six months of this year, operates an HSPA+ network that covers over 200 million people in over 190 markets.⁴⁷ Sprint has invested more than \$8.57 billion in its 4G WiMAX network, including a stake in Clearwire, whose network reaches more than 132 million Americans.⁴⁸ MetroPCS has introduced 4G LTE service in all of its markets, and “expect[s] to complete the majority of the upgrade by the end of this year.”⁴⁹ MetroPCS

⁴⁵ Verizon Communications, *Investor Quarterly 2Q 2011*, at 12, http://www22.verizon.com/investor/investor-consump/groups/financial/documents/investorrelation/2011_q2_qb.pdf; Verizon Wireless News Release, *Verizon Wireless’ 4G LTE Network Available to More Than Half the U.S. Population* (Aug. 17, 2011), <http://news.vzw.com/news/2011/08/pr2011-08-17d.html>; *Q2 2011 Verizon Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 072211a413763.763 (July 22, 2011) (statement by Verizon Communications, Inc. EVP & CFO Fran Shammo).

⁴⁶ See *Verizon Communications Inc. at Barclays Capital Global Communications, Media, and Technology Conference – Final*, FD (Fair Disclosure) Wire, Transcript 052411a4098804.704 (May 24, 2011) (statement by Verizon Communications Inc. EVP & CFO Fran Shammo).

⁴⁷ T-Mobile USA Press Release, *T-Mobile USA Reports Second Quarter of 2011 Results* (Aug. 4, 2011), <http://www.t-mobile.com/Cms/Files/Published/0000BDF20016F5DD010312E2BDE4AE9B/5657114502E70FF301319AE29D9B02EB/file/TMUS%20Q2%202011%20Press%20Release-FINAL.pdf>.

⁴⁸ See Letter from Maria L. Cattafesta, Sprint, to Marlene H. Dortch, FCC, WT Docket No. 05-265 (Feb. 7, 2011), Attachment at 2; Clearwire Press Release, *Clearwire Announces Intent To Add LTE to Its Network To Accelerate Wholesale Business* (Aug. 3, 2011). Sprint and Clearwire recently announced an amendment to their agreement, which provides Clearwire with a minimum of \$1 billion from Sprint to be paid during 2011 and 2012 for 4G wholesale services. See Clearwire Press Release, *Sprint and Clearwire Announce Key Enhancements to Their Long-Term Wholesale Revenue Agreements* (Apr. 19, 2011).

⁴⁹ *Q2 2011 MetroPCS Communications Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080211a4141270.770 (Aug. 2, 2011) (statements by MetroPCS Communications Chairman & CEO Roger Linquist & President & COO Tom Keys).

expects to incur approximately \$1 billion in capital expenditures in 2011.⁵⁰ Leap Wireless, which currently offers “Cricket Broadband,” a mobile broadband service with download bursts up to 1.4 Mbps, plans to conduct a commercial trial of LTE later this year.⁵¹

There are also several new wireless entrants deploying 4G networks that offer downstream speeds of 6 Mbps or more, and upstream speeds of 1.5 Mbps or more.⁵² For example, as of August 3, 2011, Clearwire’s domestic 4G WiMAX network reached approximately 132 million people, and Clearwire announced its plan to deploy an LTE network following technology trials that achieved download speeds exceeding 120 Mbps.⁵³ Clearwire is backed by investments from Sprint, Comcast, Time Warner Cable, Bright House Networks, Intel, and Google, and several of these cable investors have themselves begun offering Clearwire’s service to their subscribers.⁵⁴ Clearwire expects to end 2011 with approximately 10 million 4G customers.⁵⁵ LightSquared is currently conducting technical testing of its \$14 billion

⁵⁰ See MetroPCS Press Release, *MetroPCS Reports Second Quarter 2011 Results* (Aug. 2, 2011), <http://investor.metropcs.com/phoenix.zhtml?c=177745&p=irol-newsArticle&id=1591577>.

⁵¹ See Cricket, *Data Plans*, <http://www.mycricket.com/broadband/plans>; Leap Wireless International Inc. at Jefferies & Co. *Global Technology, Internet, Media & Telecom Conference – Final*, FD (Fair Disclosure) Wire, Transcript 051011a4032106.706 (May 10, 2011) (statement by Leap Wireless International, Inc. EVP & CFO Walter Berger).

⁵² See CLEAR, *Service Plans*, <http://www.clear.com/plans#plans> (up to 1.5 Mbps upstream); Clearwire Press Release, *Clearwire Introduces New CLEAR Spot 4G for More Ways To Connect to CLEAR 4G Service* (July 25, 2011) (“average mobile download speeds of 3 to 6 mbps with bursts up to 10 mbps”).

⁵³ See Clearwire Press Release, *Clearwire Announces Intent To Add LTE to Its Network To Accelerate Wholesale Business* (Aug. 3, 2011).

⁵⁴ See *id.*; Comcast, *XFINITY Internet 2go*, <http://www.comcast.com/MediaLibrary/1/1/About/PressRoom/Documents/XfinityInternet2goFS.pdf> (Comcast’s 4G product uses Clearwire’s 4G network); Time Warner Cable, *Time Warner Cable Mobile Network Coverage*, <http://timewarnercable.cellmaps.com/viewer.html> (Time Warner Cable currently offers Road Runner Mobile 4G services to customers in more than 65 cities).

⁵⁵ Clearwire Press Release, *Clearwire Announces Intent To Add LTE to Its Network To Accelerate Wholesale Business* (Aug. 3, 2011).

4G LTE network, and is expected to launch services in 2012, subject to the resolution of certain interference-related issues.⁵⁶ LightSquared has committed to covering 100 million people by the end of 2012, 145 million people by the end of 2013, and 260 million people by the end of 2015.⁵⁷ LightSquared has entered into agreements to provision 4G wholesale or roaming arrangements with other wireless providers, including Sprint Nextel, Cellular South, ClearTalk Wireless, SI Wireless, and Leap Wireless.⁵⁸

New satellite broadband services are also in the process of being deployed. Hughes Network Systems will launch the Jupiter satellite in the first half of 2012, which will enable downstream speeds of 3-25 Mbps.⁵⁹ Similarly, ViaSat, which owns WildBlue, is investing in the ViaSat-1 “media-enabled” satellite broadband system, which is scheduled to launch in September 2011, to offer 2-10 Mbps download speeds, with service scheduled for later this year.⁶⁰ ViaSat claims that “satellite broadband operators will have sufficient capacity in 2015,

⁵⁶ See LightSquared, <http://www.lightsquared.com/about-us/faqs/>; LightSquared Press Release, *LightSquared and Simplexity MVNO Services Sign Long-Term 4G-LTE Wholesale Agreement* (Aug. 30, 2011) (“The deployment and operation of LightSquared’s network represent more than \$14 billion of private investment over the next eight years.”).

⁵⁷ See *Pipeline’s Interview with Frank Boulben, CMO of LightSquared*, Pipeline (Aug. 11, 2011), http://www.pipelinepub.com/0811/OSS_BSS/LightSquared-QA-1.php.

⁵⁸ LightSquared, *Partners*, <http://www.lightsquared.com/partners/>.

⁵⁹ Hughes Network Systems, *Investor Presentation*, at 9 (Mar. 2011), http://www.hughes.com/HNS%20Library%20Brochures/03_2011_H45587_Investor%20Presentation_03-11-11.pdf; Hughes Network Systems, Form 10-Q, at 8 (SEC filed May 4, 2011), <http://www.sec.gov/Archives/edgar/data/1376567/000119312511126422/d10q.htm>.

⁶⁰ ViaSat, *High-Capacity Satellite System and ViaSat-1*, <http://www.viasat.com/broadband-satellite-networks/viasat-1>; ViaSat Press Release, *ViaSat Announces First Quarter Fiscal Year 2012 Results* (Aug. 5, 2011), <http://www.viasat.com/news/viasat-announces-first-quarter-fiscal-year-2012-results>; Comments of ViaSat, Inc., *Connect America Fund*, WC Docket No. 10-90 et al., at 5-6 (FCC filed Apr. 18, 2011).

using just the two next-generation satellites scheduled for launch in the next year, to provide 4/1 Mbps and better broadband service to about one million currently ‘unserved’ households.”⁶¹

The availability of Wi-Fi – which is already more prevalent in the United States than anywhere in the world – also is significant and increasing. There are now more than 96,000 Wi-Fi hotspots in the United States, spanning all 50 states, which represents more than 15 percent of all hotspots worldwide.⁶² Cable companies such as Comcast, Time Warner Cable, and Cablevision are offering their wireline broadband customers free access at Wi-Fi hotspots, which are “being added every day.”⁶³ Cablevision, for example, has committed to spending \$300 million to deploy its Wi-Fi network.⁶⁴ For its part, AT&T operates approximately 27,000 Wi-Fi hotspots nationwide, and, in the first half of 2011 alone, AT&T handled more than half a billion

⁶¹ Comments of ViaSat, Inc., *Connect America Fund*, WC Docket No. 10-90 et al., at 14 (FCC filed Apr. 18, 2011).

⁶² See JiWire, *Wi-Fi Finder*, <http://v4.jiwire.com/search-hotspot-locations.htm> (tracking 595,056 free and pay Wi-Fi locations worldwide, and 96,663 locations in the United States as of September 5, 2011).

⁶³ See, e.g., Time Warner Cable, *Time Warner Cable WiFi*, <http://www.timewarnercable.com/nynj/learn/hso/wifi/> (“Road Runner customers can now access WiFi in any of three regional WiFi service areas across Cablevision, Time Warner Cable and now Comcast footprints within the New York-New Jersey metro areas.”); Cablevision, *Optimum WiFi: FAQ*, <http://www.optimum.net/WiFi/FAQ>; Comcast, *Comcast Coverage Viewer: XFINITY*, <http://comcast.cellmaps.com/wifi.html>; Comcast, *XFINITY WiFi: FAQs: When Will XFINITY WiFi Be Available in My Area?*, <http://customer.comcast.com/Pages/FAQListViewer.aspx?topic=Internet&folder=59b4a218-7ea2-41db-a6e8-0a32323df8c8>.

⁶⁴ See *Q1 2011 Cablevision Systems Corp. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 050511a3955693.793 (May 5, 2011) (statement by Cablevision COO Tom Rutledge). Cablevision’s high-speed data customers used its Wi-Fi product “to access the mobile Internet over 50 million times last year, a 500% increase over 2009’s 8 million sessions.” Cablevision claims it has installed “the nation’s largest outdoor WiFi network” in addition to over 6,000 retail locations, restaurants, coffee shops, and the like. *Q4 2010 Cablevision Systems Corp. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 021611a3681141.741 (Feb. 16, 2011) (statement by Cablevision Systems COO Tom Rutledge).

Wi-Fi connections, up from 382.1 million connections in all of 2010.⁶⁵ AT&T has also begun deploying Wi-Fi “hotzones” in various cities to supplement its mobile broadband coverage in areas with high data use.⁶⁶ And AT&T has worked with a variety of retail establishments to enable *free*, publicly accessible Wi-Fi Internet access to guests of those establishments, including more than 11,500 McDonald’s restaurants, thousands of Starbucks coffee houses, more than 1,000 FedEx Office centers, and hundreds of Barnes & Noble bookstores.⁶⁷

3. *High Rates of Broadband Adoption Further Confirm That Broadband Deployment Has Been Reasonable and Timely*

Rapid growth in consumer adoption of broadband further confirms that broadband deployment has been reasonable and timely. Indeed, broadband has been adopted more rapidly than a host of other major technologies in recent decades, including everything from multichannel video service to home PCs to cellular phones.⁶⁸ It is estimated that approximately 80 percent of households with personal computers also have broadband.⁶⁹ And broadband

⁶⁵ See AT&T, *Media Kit: AT&T Wi-Fi: Overview & About AT&T Wi-Fi*, <http://www.att.com/gen/press-room?pid=17541>.

⁶⁶ See AT&T News Release, *AT&T Launches Wi-Fi Hotzone Along Austin’s Sixth Street* (May 6, 2011), <http://www.att.com/gen/press-room?pid=19803&cdvn=news&newsarticleid=31894&mapcode=mk-att-wi-fi> (AT&T has launched hotzones in Austin, New York City, San Francisco, Charlotte, and Chicago).

⁶⁷ See McDonald’s, *Free Wi-Fi @ McDonald’s*, http://www.mcdonalds.com/us/en/services/free_wifi.html; Starbucks, *Wi-Fi (United States)*, <http://www.starbucks.com/coffeehouse/wireless-internet>; FedEx News Release, *Free Wi-Fi Arrives at FedEx Office* (Oct. 6, 2010), <http://news.van.fedex.com/wi-fi>; Barnes & Noble, *Now at Barnes & Noble, Complimentary Wi-Fi*, <http://www.barnesandnoble.com/u/Wi-fi-at-Barnes-and-Noble/379001240/>.

⁶⁸ See, e.g., NTIA, U.S. Dep’t of Commerce, *Digital Nation: Expanding Internet Usage*, at 5-6 & n.2 (Feb. 2011) (“The rate of broadband adoption has outstripped such staples as VCRs, cell phones, cable, color televisions, personal computers, radios, electricity, and telephones.” Broadband diffusion in the U.S. “achieved 50 percent penetration within approximately eight years,” compared to “VCRs (12 years), cell phones (14), cable (15), color TVs (18), personal computers (19), radios (28), electricity (52), and telephones (71).”).

⁶⁹ See Jessica Reif Cohen et al., Bank of America/Merrill Lynch, *Battle for the Bundle: Best of Times . . . Worst of Times*, at 10, Chart 15 (Aug. 23, 2010).

subscribership is still growing at roughly 4-6 percent a year, which is consistent with what would be expected in a healthy industry of this maturity.⁷⁰

Meanwhile, growth in wireless broadband subscribership is still occurring on a strong upslope. The Commission's most recent data show more than 71 million mobile wireless subscribers with high-speed service subscriptions for full Internet access as of June 2010, an 85-percent increase over one year.⁷¹ Nielsen estimates that more than 83 million wireless users access the Internet through their mobile devices.⁷² Analysts expect tremendous growth over the next five years.⁷³

The overall health of the broadband marketplace also is evident from the explosion in edge devices, applications, and services.⁷⁴ Numerous wireline devices provide online access to videos, other video programs, online gaming, and more – including Apple TV, the ARCHOS TV+ Wi-Fi digital video recorder (DVR), the ASUS O!Play TV HD media player, the LG

⁷⁰ See, e.g., John C. Hodulik et al., UBS Investment Research, *Broadband Makes Up for Weakening Video*, at 3 (Aug. 15, 2011) (“Broadband subscribers grew 6.3% yoy in 2Q, in-line with the last four quarters.”); Timothy Horan et al., Oppenheimer Equity Research, *2Q11 Postview*, at 15 (Aug. 18, 2011) (estimating a 4.9 percent increase in broadband subscribers in 2010 and a 4.2 percent increase in 2011); Simon Flannery et al., Morgan Stanley, *Telco Broadband Subs May Fall from 2012E Onwards*, at 3 (Apr. 19, 2011) (“Broadband market is maturing. We expect total US household broadband subscriber growth will continue to slow in 2011 to 4% vs. the 5% in 2010”).

⁷¹ See *June 2010 Internet Access Report* at 1 & 15, Table 1.

⁷² See Nielsen, *State of the Media 2010: U.S. Audiences & Devices* (Jan. 2011), <http://blog.nielsen.com/nielsenwire/wp-content/uploads/2011/01/nielsen-media-fact-sheet-jan-11.pdf> (83.2 million mobile phone web users as of Oct. 2010).

⁷³ See, e.g., *US Has Only 25% Smartphone Penetration at Present But Will Grow to 75% in the Next Five Years, Says Senior Analyst at Oppenheimer and Co.*, The Wall St. Transcript (May 25, 2011), <http://www.twst.com/yagoo/timhoranoppenheimer4.html> (statement by Oppenheimer & Co. Managing Director and Senior Analyst Tim Horan: “Consumers are really becoming quite addicted to wireless data, and there is currently only about 25% penetration of smartphones in the U.S. We expect that in the next five years that’s going to grow to 75%.”).

⁷⁴ See Comments of AT&T Inc. at 3-4, 61-62, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, WT Docket No. 09-66 (FCC filed Sept. 30, 2009).

BD570 Network Blu-ray Disc Player, NetCast Entertainment Access, Moxi DVR, Slingbox, and Roku; and gaming devices such as Xbox 360, Nintendo Wii, and Sony PlayStation 3. Online gaming generated approximately \$2.8 billion in revenues in 2009, and is on target to reach \$5 billion by 2015, according to market research firm Pike & Fischer.⁷⁵ U.S. Internet video revenues were estimated at \$9.2 billion in 2010 and projected to grow to \$43.2 billion in 2015, at which point Internet video will comprise 19 percent of the U.S. video market.⁷⁶

The list of wireless devices that provide access to a full range of broadband content and/or a variety of specialized services is at least as impressive, including everything from smartphones such as the iPhone and Droid, tablet computers such as the iPad and Galaxy Tab, e-readers such as the Kindle and Nook, personal wireless hotspot devices such as the MiFi and iSpot, and GPS devices from Garmin, TomTom, and many others. Amazon recently announced that it is now selling more electronic books than print ones.⁷⁷ Numerous newspapers and magazines are now shifting their focus to digital distribution over print, citing the emergence of new tablet devices such as the iPad as one of the factors for this transition.⁷⁸ All of this

⁷⁵ See Pike & Fischer Press Release, *U.S. Online Game Subscribers to More Than Double in Five Years*, Pike & Fischer Projects (Jan. 28, 2010), <http://www.pf.com/marketResearchPDInd.asp?repId=748>.

⁷⁶ Timothy Horan et al., Oppenheimer Equity Research, *Internet Video Coming of Age*, at 3 & 11, Exhibit 3 (Dec. 19, 2010).

⁷⁷ See Amazon.com News Release, *Amazon.com Now Selling More Kindle Books Than Print Books* (May 19, 2011), <http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irol-newsArticle&ID=1565581&highlight> (statement by Amazon founder and CEO Jeff Bezos: “Customers are now choosing Kindle books more often than print books. We had high hopes that this would happen eventually, but we never imagined it would happen this quickly – we’ve been selling print books for 15 years and Kindle books for less than four years.”).

⁷⁸ See, e.g., Jeremy W. Peters, *For Magazines, a Bitter Pill in iPad*, N.Y. Times (Jan. 16, 2011), <http://www.nytimes.com/2011/01/17/business/media/17apple.html> (“Since Apple introduced the iPad . . . publishers have poured millions of dollars into apps in the hopes that the device could revolutionize the industry by changing the way magazines are read and sold to consumers.”); Eric Pfanner, *Financial Times Introduces Web App in Effort To Bypass Apple*, N.Y. Times (June

economic activity is made possible by the widespread availability of broadband, thus demonstrating that, overall, broadband is being deployed in a reasonable, timely fashion.

B. The Commission Should Correct the Seventh Broadband Deployment Report’s Definition of Broadband and Adopt a Consumer-Focused Definition That More Accurately Reflects Market Realities and the Statutory Language

The eighth inquiry seeks comment on the appropriate benchmark for “advanced telecommunications capability.”⁷⁹ As the Commission notes, the current benchmark is “services that enable actual download speeds of at least 4 Mbps and upload speeds of at least 1 Mbps (4 Mbps/1 Mbps) over the broadband provider’s network,” even though this benchmark fails to “match the available data.”⁸⁰ The Commission should revise its benchmark in order to make it consistent with the data that operators actually report to the Commission and NTIA, and also because it skews downward the availability of broadband at speeds that customers demand.

As AT&T has previously explained in response to the Commission’s seventh inquiry, Congress chose not to specify a particular speed in defining advanced telecommunications capability in Section 706, but instead defined broadband in terms of the services it enables consumers to access.⁸¹ This was a wise decision, because “enabl[ing] users to originate and

7, 2011), <http://www.nytimes.com/2011/06/08/technology/08ftapp.html> (“[M]obile customers, the large majority of them iPhone or iPad users, already account for 15 percent of The Financial Times’s digital subscriber growth.”); David Kaplan, *WSJ Launching Single-Issue Downloads for iPad*, Paid Content (Mar. 22, 2011), <http://paidcontent.org/article/419-wsj-launching-single-issue-downloads-for-ipad/> (“Looking to get more subscribers for its iPad app, *The Wall Street Journal* will start selling single-issue digital versions of its morning paper for \$1.99 in the within the existing free app.”).

⁷⁹ NOI ¶¶ 6-7.

⁸⁰ *Id.*

⁸¹ See Comments of AT&T Inc. at 22, *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant to Section 706 of the*

receive high-quality voice, data, graphics, and video telecommunications” is not solely speed-dependent.⁸² Rather, it is a function of speed and other factors, including the types of applications that a user runs, the customer premises equipment chosen for the communication, the protocols used to transmit data, and the use of any compression technologies to reduce the size of the data files to be transmitted, among other things. Thus, for example, where it once would have required 6 Mbps to transmit reasonable-quality standard definition or DVD video images, compression technologies have reduced that to 2 Mbps or less.⁸³

Consistent with the statute, the Commission’s definition of broadband should focus on the speeds necessary to enable consumers to access the services they desire – including voice, data, and video – rather than adhere to any arbitrary threshold. Although consumer demand for bandwidth to support a growing array of applications and content is generally increasing over time, current broadband offerings appear capable of addressing those needs. If anything, the Commission should ratchet its definition downward, to reflect the fact that consumers are able to access the services they currently demand with less bandwidth – particularly in the upstream direction – than the Commission’s definition requires.

Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, GN Docket No. 10-159 (FCC filed Sept. 7, 2010).

⁸² 47 U.S.C. § 1302(d)(1).

⁸³ See, e.g., Haivision Network Video, *White Paper: H.264 Video Compression*, at 4 (Aug. 2010), <https://www.haivision.com/download-center/Whitepapers/video-compression/download> (“What has been considered acceptable video quality for MPEG-2 at 6 Mbps can now be experienced using H.264 at about 2 Mbps for ‘Action Video.’”). AT&T has previously addressed advances in compression technology and their relevance to the Commission’s analysis under Section 706, and we respectfully refer the Commission to our prior filing on this subject. See Reply Comments of AT&T Inc., *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 07-45 (FCC filed Sept. 24, 2008).

In particular, although demand for upstream bandwidth is growing, the Commission’s 1 Mbps threshold exceeds what is adequate for the most popular current applications. In the case of video conferencing, for example, Skype recommends upstream speeds of only 60 Kbps for audio calls, 256 Kbps for medium-quality video calls, and 512 Kbps for higher-quality video calls.⁸⁴ Vonage requires only a “minimum upload speed of 90 kilobytes per second.”⁸⁵ Google Talk requires “a minimum 56k dial-up connection, but [it] recommend[s] a broadband connection for the best experience.”⁸⁶ And popular online, interactive games such as Civilization V or Call of Duty: Black Ops are provided through Steam, an online gaming platform, which merely specifies an undifferentiated “broadband” connection as sufficient.⁸⁷

None of these popular Internet services – or any of the other most commonly used Internet sites or applications, from Google to Facebook to Hulu to eBay, etc. – requires 1 Mbps upstream.⁸⁸ Rather, each of these services functions well at 768 Kbps upstream, or less. Although the difference between 768 Kbps and 1 Mbps is not significant in terms of ensuring consumers access to the services they demand, the Commission’s decision to exclude 768 Kbps upstream services from its definition of broadband is significant in that it distorts the true picture

⁸⁴ See Skype, *User Guides: How To Get the Best Sound Quality on Skype Calls*, <http://www.skype.com/intl/en/support/user-guides/skype-for-linux/call-quality/poor-quality-video/connection/>.

⁸⁵ Vonage, *Support Home: Check Your Internet Speed*, https://support.vonage.com/app/answers/detail/a_id/1060/~/-check-your-internet-speed.

⁸⁶ Google, *Google Talk System Requirements*, <http://www.google.com/support/talk/bin/answer.py?hl=en&answer=23906>.

⁸⁷ Valve Corporation, *About Steam*, <http://store.steampowered.com/about/>. Indeed, low latency is generally more critical for online gaming than large bandwidth.

⁸⁸ See, e.g., Hulu, *Help Main: Getting Started: System Requirements*, <http://www.hulu.com/support/article/166380> (“To watch videos on Hulu.com, you will need . . . a broadband internet connection. Our videos stream at 480Kbps to 1000Kbps, and we recommend a downstream bandwidth of over 1000Kbps (or 1.0Mb/s) for a smooth playback experience.”).

of broadband deployment in the United States. Many DSL-based Internet access services are offered at 768 Kbps upstream due to standard DSL provisioning practices of configuring speeds in 128 Kbps increments (256 Kbps, 384 Kbps, 768 Kbps, etc.). The Commission’s definition of broadband should therefore include these offerings in the analysis of where broadband is available, and the appropriate benchmark to define “advanced telecommunications capability” should be changed from 4 Mbps downstream and 1 Mbps upstream, to 3 Mbps downstream and 768 Kbps upstream, to reflect the fact that consumers are able to access the services they currently demand with less bandwidth, to synchronize the analysis with the way broadband providers provision broadband service today, and to correspond to the speed tier measured by the State Broadband Data and Development (SBDD) Data on which the Commission’s analysis relies.⁸⁹

C. The Commission Should Conclude That Broadband Is Generally Being Deployed on a Reasonable and Timely Basis, While Acknowledging That There Are Still Limited Areas That Have Been Unable To Attract Certain Broadband Technologies and Investment

In the Seventh Report, the Commission concluded that, because broadband meeting the Commission’s definition had not been deployed to approximately 12 to 26 million Americans,⁹⁰ broadband was not being deployed to “all Americans” on a reasonable and timely basis. The Commission justified this finding on a literal interpretation of “all Americans” – one that requires every single U.S. household to have access to broadband, a standard that may never be met. In addition, the Commission made no attempt to differentiate its conclusions between the

⁸⁹ See NOI ¶ 7 n.25; Seventh Section 706 Report ¶ 25 (While the Commission assesses broadband deployment “using a speed tier that approximates the 4 Mbps/1 Mbps broadband speed threshold,” this is not one of the pre-determined speed tiers for which SBDD Data are collected. The report therefore “base[s] [its] statutory assessment of deployment on the 3 Mbps/768 kbps tier”).

⁹⁰ Seventh Section 706 Report ¶¶ 23, 35.

vast majority of the country where broadband meeting the Commission's definition is available, and those geographic areas that have been unable to attract certain broadband technologies and investment due to natural economic barriers such as sparse, rural populations that are costly to serve. In addition, the Commission failed to consider the possibility that, as a result of such obstacles, the absence of certain broadband technologies and investment in such areas is fully consistent with what Congress would have expected, and should not therefore be taken as a sign of a failure in broadband deployment more generally.

This eighth inquiry presents the Commission with an opportunity to reconsider the flawed approach taken in the Seventh Report and to adopt a more pragmatic approach that better comports with congressional intent. First, the Commission should find that broadband is generally being deployed on a reasonable and timely basis, and that service is available and investment occurring to the vast majority – 95 percent or more – of American households. In these areas, market forces not only support broadband, but have proven themselves more than capable of delivering broadband speeds that consumers demand without government intervention.

Second, the Commission should find that there are certain areas – typically remote or rural areas – where at least certain types of terrestrial broadband are neither available nor likely to be deployed as a result purely of market forces. The Commission should then determine whether broadband deployment *in these areas* is unreasonable or untimely, taking into account the difficult economics of serving these areas. As with the deployment of any major infrastructure – whether roads or power lines or telephone or cable lines – the last 5 percent often

can take longer than the first 95 percent.⁹¹ In the event the Commission concludes that deployment is not reasonable and timely in these unserved areas, the Commission should act to accelerate deployment by, among other things, reallocating spectrum and providing universal service support, as discussed below in Part II.

Third, the Commission should not confuse or conflate issues regarding the deployment of broadband services with the “cost, quality and adoption” rates of such services.⁹² Congress instructed the Commission to determine whether broadband is “being deployed.” Thus, in assessing deployment, the Commission should necessarily focus in the first instance on the supply side of the broadband equation: whether broadband services are physically available or whether such services will be available in the reasonably foreseeable future. By contrast, matters related to the “cost, quality, and adoption” rates for broadband services are primarily demand-side issues.

⁹¹ See, e.g., Intelligent Transportation Systems, U.S. Dep’t of Transportation, *Deploying and Operating Integrated Intelligent Transportation Systems*, at 27 (Dec. 2001), http://ntl.bts.gov/lib/jpodocs/repts_te/13599/13599.pdf (statement by NY/NJ/CT program manager Rob Bamford: “In [Intelligent Transportation Systems] deployment, the first 95 percent is relatively easy; the last 5 percent is where the frustration lies.”); Imran Ghori, *Celebration Anticipates 210 Freeway’s Completion*, Press-Enterprise (June 15, 2007), http://www.pe.com/localnews/inland/stories/PE_News_Local_B_freeway16.ac2848.html (“Stephen Yench, segment manager overseeing the project for [the San Bernardino Associated Governments], estimated [a stretch of Interstate 210] is 95 percent complete but said several details remain to be finished. ‘They always say the last 5 percent is the toughest and takes the longest,’ he said.”); Gregory T. Haugan, *Project Management Fundamentals: Key Concepts and Methodology* 115 (Management Concepts 2006) (“Experienced project managers tell many stories about how activities become reported as 90 percent complete, but that the last 10 percent takes more time than the first 90 percent.”); see also U.S. Gov’t Accountability Office, *Highway Infrastructure: Perceptions of Stakeholders on Approaches To Reduce Highway Project Completion Time*, GAO-03-398, at 1 (Apr. 2003) (“Many of the organizations with a role in highway project completion have recognized that completing major highway construction projects takes too long – in some cases about 20 years.”).

⁹² NOI ¶¶ 22-24.

While the Commission’s broadband policies should account for both supply and demand issues, which are closely related, it is important for the Commission to maintain an analytical framework that recognizes the distinctions between the two sides of the broadband equation so that it can develop appropriately tailored policy responses. For example, the proper policy response to a supply side issue may involve, among other things, the Commission facilitating access to rights of way, making more spectrum available, and/or providing high-cost universal service support for broadband in order to encourage the deployment of broadband infrastructure. On the other hand, the proper policy response to a demand side issue may involve a different set of tools, such as digital literacy campaigns or low-cost computer programs. Accordingly, contrary to the suggestions in the eighth inquiry, the Commission should be careful not to indiscriminately lump all of these issues together as a purported “assessment of broadband availability.”⁹³

D. The Commission Should Take Steps To Improve Its Analysis of Broadband Availability, Deployment, and Speeds

1. Mobile Broadband Data

The eighth inquiry seeks comment on whether the Commission should include mobile wireless broadband deployment in its analysis of SBDD Data.⁹⁴ The omission of mobile broadband services significantly underestimates the availability of broadband services today. Large and increasing numbers of consumers are using broadband-enabled wireless devices as their principal way of accessing online content, and that trend is only accelerating with the proliferation of wireless smart devices and 4G networks.

⁹³ NOI ¶ 23.

⁹⁴ NOI ¶ 10.

As described above, the Commission's most recent analysis shows that 98.5 percent of the U.S. population has 3G wireless coverage from one or more providers, that 91.9 percent is covered by two or more providers, that 4G services are currently offered to more than 200 million people, and that wireless providers are investing tens of billions of dollars to complete 4G upgrades of their networks. Wireless broadband is not only widely available, but widely used. UBS estimates wireless data traffic in 2010 tripled relative to 2009, and that it will double in 2011.⁹⁵ AT&T's own mobile broadband volumes surged a staggering 8,000 percent from 2007 to 2010, and AT&T expects that growth to continue, with mobile data traffic on its network projected to increase by a factor of eight to ten by 2015.⁹⁶ Cisco forecasts monthly mobile traffic in the U.S. will grow from 44.6 petabytes in 2010 to more than 108 petabytes in 2011 and approximately 915 petabytes in 2012.⁹⁷ Moreover, the Pew Internet Project recently found that "25 percent of smartphone owners say they mostly go online using their phone, rather than with a computer."⁹⁸

Given the significant advances in wireless broadband technology, and the rapid and ongoing deployment of wireless broadband, no analysis of broadband availability could be

⁹⁵ John C. Hodulik et al., UBS, *The 4G Report: The Strong Get Stronger*, at 11, Chart 4 (Mar. 15, 2011).

⁹⁶ Joint Opposition at 20.

⁹⁷ See Cisco, *Cisco Visual Networking Index* (Feb. 2011), http://ciscovni.com/vni_forecast/advanced.html; see also Jason Armstrong et al., Goldman Sachs, *New Layers of Demand in Wireless Traffic Forecasts: Buy Towers*, at 1-2 (Mar. 30, 2011) ("We now believe wireless traffic grows at a 48% 10-year CAGR. . . . LTE technology upgrades should provide a significant augmentation, but even after accounting for this upgrade we still see nearly a 30% CAGR in wireless network traffic." "We note that our previous bottom-up estimate was for a 37% 10-year growth CAGR and has already proven too conservative given the pace of smartphone adoption as well as average usage profiles.").

⁹⁸ See Aaron Smith, Pew Internet & American Life Project, *35% of American Adults Own a Smartphone*, at 2-3 (July 11, 2011), http://www.pewinternet.org/~media/Files/Reports/2011/PIP_Smartphones.pdf.

complete without factoring in the wireless broadband services that are available and in use today. It terms of how the Commission should go about measuring wireless broadband deployment, it should rely in the first instance on the NTIA's SBDD Data as well as American Roamer mapping data, which is also used by wireless providers to create wireless coverage maps. American Roamer data are recognized by the industry as authoritative, and the Commission itself has used these data in its wireless competition reports.⁹⁹

2. Form 477 De Minimis Threshold

The eighth inquiry seeks comment on the use of the 1 percent *de minimis* threshold for county and census-tract level data to present estimates of broadband deployment.¹⁰⁰ The Commission should continue to apply this 1 percent threshold. In general, when broadband networks are deployed, they are deployed across a wide geographic area that typically spans one or more counties or census-level tracts. As a result, where even a small percentage of households in an area subscribe to broadband service, it is a useful indicator that broadband is available more broadly throughout that area.

3. Tribal Lands

The eighth inquiry seeks comment on the deployment of broadband to Native Nations, and seeks input on the steps to be taken to assess the state of broadband on Tribal lands.¹⁰¹ As

⁹⁹ See, e.g., Comments of CTIA-The Wireless Association at i, *Modernizing the FCC Form 477 Data Program*, WC Docket No. 11-10 et al. (FCC filed Mar. 30, 2011) (“[C]overage information for mobile voice and data networks is already available from American Roamer, and this data is the best available. It is a compilation of information that carriers provide to their customers, and they are under considerable pressure to ensure it is accurate.”); Fifteenth CMRS Report ¶ 1 n.2 (“The Report includes network coverage data from American Roamer”); *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, Fourteenth Report, 25 FCC Rcd 11407, ¶ 4 n.2 (2010) (“Where possible, the Report uses the most current data available, including network coverage data from American Roamer”).

¹⁰⁰ NOI ¶ 12.

¹⁰¹ NOI ¶¶ 16, 18.

AT&T has explained elsewhere, there are several steps the Commission could take.¹⁰² The first step is to publish a more complete and refined analysis of the data that the Commission already has at its disposal. Specifically, the Commission has access to (1) availability data from the NTIA's broadband mapping program, (2) subscribership data from the Commission's Form 477 data collection program, (3) population and other demographic data from the Census Bureau, and (4) other data collected in the *National Broadband Plan* proceedings. While such data may not be 100 percent accurate or complete in every area, they should at least provide a general sense of the *relative* differences in availability and subscribership between different Tribal lands, and between a given Tribal land and national averages. Moreover, when combined with Census Bureau demographic data, such comparisons should also yield important insights about the key characteristics of Tribal lands that fall below the national average, and those that are at or above the national average. Those insights, in turn, can lead to appropriately tailored responses to address availability and/or subscribership gaps on Tribal lands.

II. ACTIONS TO ACCELERATE BROADBAND DEPLOYMENT

The eighth inquiry also asks what actions the Commission could take to accelerate broadband deployment.¹⁰³ As AT&T has previously explained, the four most important steps the Commission can take to further accelerate broadband deployment are to: (1) eliminate all legacy support over the course of five years and transition that support to a Connect America Fund for fixed broadband service and an Advanced Mobility Fund for mobile wireless broadband service,¹⁰⁴ (2) set a date certain for the PSTN sunset as it did for the analog TV sunset, and set

¹⁰² See Comments of AT&T Inc., *Improving Communications Services for Native Nations*, CG Docket No. 11-41 (FCC filed June 20, 2011).

¹⁰³ NOI ¶ 30.

¹⁰⁴ See Comments of AT&T at 54-128, *Connect America Fund*, WC Docket No. 10-90 et al. (FCC filed Apr. 18, 2011) (“*AT&T Connect America Fund Comments*”).

forth an approach for orderly transition to IP networks consistent with the Technology Advisory Council's recommendations,¹⁰⁵ (3) approve the AT&T/T-Mobile USA transaction, which will enable AT&T to implement its commitment to deploy 4G LTE broadband services to 97 percent of all Americans within six years after closing, without public funding,¹⁰⁶ and (4) consistent with the recommendations of the *National Broadband Plan*, make additional spectrum available to address the growing demand for mobile broadband services.¹⁰⁷

These targeted steps will help to address the lack of certain broadband technologies in certain areas, while not risking to upset the market forces that have successfully delivered broadband elsewhere in the country. We respectfully refer the Commission to AT&T's prior comments addressing these matters, in which we have set forth the specific steps the Commission should take with respect to such reform.

¹⁰⁵ See *AT&T Connect America Fund Comments* at 26-37; Technology Advisory Council, FCC, *Status of Recommendations* (June 29, 2011), <http://transition.fcc.gov/oet/tac/TACJune2011mtgfullpresentation.pdf>.

¹⁰⁶ See Joint Opposition at 75-76.

¹⁰⁷ See *National Broadband Plan* at xii.

CONCLUSION

The Commission should find that broadband is generally being deployed on a reasonable and timely basis.

Respectfully submitted,



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