

BEFORE THE  
Federal Communications Commission  
WASHINGTON, D.C.

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. 12-228

**COMMENTS OF COMCAST CORPORATION**

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**COMMENTS OF COMCAST CORPORATION**

Comcast Corporation (“Comcast”) hereby responds to the above-captioned Notice of Inquiry (“*Notice*”) regarding whether broadband is being deployed in a reasonable and timely fashion.<sup>1</sup> Abundant data confirm that, on a nationwide basis, broadband *is* being deployed in a reasonable and timely fashion – indeed, at a pace far beyond this standard. However, in recent years, the Commission has adopted an analytical framework that applies a standard contrary to Congress’s clear directive, and, in the *Notice*, it proposes to drift even further from its statutory moorings. In its next *Broadband Progress Report*, the Commission should return to the language of the statute and fully acknowledge the extraordinarily rapid progress that has been and is continuing to be made in deploying broadband services across the United States.

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<sup>1</sup> *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*, Ninth Broadband Progress Notice of Inquiry, GN Docket No. 12-228, FCC 12-91 (Aug. 21, 2011) (“*Notice*”).

## I. INTRODUCTION AND SUMMARY

Residential broadband Internet service was only a dream when the Telecommunications Act of 1996 was enacted. Today, broadband Internet is widespread, vastly better than even the dreamers of 1996 imagined, and playing a central role in American civic society, culture, education, and the economy.

In the almost 17 years since Congress adopted Section 706, private companies have deployed broadband Internet service to nearly all corners of the United States. Encouraged by the light-touch regulatory policies adopted by Congress and implemented by the Commission, providers have invested extraordinary levels of private risk capital over this period, including over \$185 billion invested by the cable industry alone. As a result of these investments, as reported in the *Eighth Broadband Progress Report* (“*Eighth Report*”), approximately 94 percent of Americans have access to *fixed* broadband services meeting the Commission’s benchmark, and fully two-thirds of the remaining six percent that do not have such access *do* have access to *mobile* broadband services. Looking ahead, all indicators suggest that providers are actively working to deploy services to the small number of Americans that remain unserved.

Despite this evidence of virtually universal broadband deployment, by misconstruing the language of Section 706 the Commission has somehow failed to notice what is plain to see. Instead, the Commission has adopted an analytical framework that shifts focus from year-over-year progress to whether the mission has been 100 percent completed, and from whether broadband is being deployed to criteria such as “cost, quality, and adoption.” This shift in focus is contrary both to the plain language of the statute and the intent of Congress.

In the *Notice*, the Commission raises new proposals that would cause it to drift even further from its statutory moorings. Of particular note, the Commission raises the possibility of increasing the broadband speed benchmark, proposes to create new latency and capacity

standards for fixed broadband, and seeks comment on whether it should find that deployment only exists to the extent that *both fixed and mobile* broadband services are available to a given household or area. None of these proposals is consistent with the language or intent of Section 706, and each of them would cause the Commission to further understate the rapid pace of deployment.

Rather than taking this glass-half-empty approach, the Commission should recognize that its light-touch regulatory policies have been extraordinarily successful. These policies have encouraged providers to deploy broadband Internet services to nearly every American, despite the challenges inherent in doing so in a country with such a vast and varied terrain and low population density. If the Commission returns to an analysis based on the language of the statute, it will acknowledge this success and find that broadband *is* being deployed in a reasonable and timely fashion.

## **II. BROADBAND PROVIDERS HAVE DEPLOYED SERVICES TO NEARLY ALL AMERICANS AND ARE RAPIDLY DEPLOYING SERVICES TO THE SMALL NUMBER THAT REMAIN UNSERVED.**

When Congress adopted Section 706 of the Telecommunications Act of 1996, the Internet was in its infancy and was accessed primarily via dial-up connections that maxed out at speeds of 56 kbps. The conventional wisdom was that connection speeds would remain relatively stagnant for the foreseeable future,<sup>2</sup> and the extent to which the average American

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<sup>2</sup> See, e.g., Testimony of Stagg Newman, Vice President, Network Technology and Architecture, Applied Research, Bellcore, at FCC Bandwidth Forum (Jan. 23, 1997) (“ISDN I think has a real role, particularly over the next five to ten years. Because as you’ll see later, getting a broad band mass network out there quickly is a tremendous challenge. . . . And actually at ISDN speeds of 150 kilobits per second. That will be adequate for most of the services people envision over the next five years. Apparently that’s the view when we talk to people like Microsoft and others.”), available at <http://transition.fcc.gov/Reports/970123.txt>.

would demand “advanced telecommunications capability” was still unclear.<sup>3</sup> In the years that have followed, the explosive growth of the Internet and the deployment of broadband infrastructure to nearly all corners of the United States has been a tale of unmitigated success. Over this period, the cable industry alone has invested over \$185 billion to provide American consumers with ever-improving levels of connectivity.<sup>4</sup> And, even in the recent economic downturn, broadband providers continue to top the list of companies ranked by capital expenditures in the United States.<sup>5</sup> As a result of this sustained private sector investment, the percentage of Americans without access to broadband Internet service is growing smaller every year. As Commissioner McDowell has noted, “between 2003 and 2009, broadband deployment steadily increased from 15 percent to 95 percent of Americans.”<sup>6</sup>

All available indicators point to the same conclusion: this progress is showing no sign of letting up. In June 2010, 26.4 million Americans lived in areas that lacked access to fixed broadband services, as defined by the Commission.<sup>7</sup> Explaining the need to repurpose the high-

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<sup>3</sup> See NTIA, *A Nation Online: How Americans Are Expanding Their Use of the Internet* 3, Figure 1-1 (Feb. 2002) (indicating that, as of 1996, approximately 30 percent of American households had computers), available at <http://www.ntia.doc.gov/legacy/ntiahome/dn/anationonline2.pdf>.

<sup>4</sup> See NCTA, *Investment in Infrastructure*, <http://www.ncta.com/StatsGroup/Investments.aspx> (last visited Sept. 20, 2012).

<sup>5</sup> See Progressive Policy Institute, *Investment Heroes: Who’s Betting on America’s Future?* 3 (July 2012) (ranking AT&T, Verizon, and Comcast in the top ten companies ranked by U.S. Capital Expenditures), available at <http://www.progressivepolicy.org/2012/07/investment-heroes-who%E2%80%99s-betting-on-america%E2%80%99s-future/>.

<sup>6</sup> See *Eighth Report*, Statement of Commissioner Robert M. McDowell (citing *A National Broadband Plan for Our Future*, GN Docket No. 09-51 (2010) (“*National Broadband Plan*”).

<sup>7</sup> See *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, Eighth Broadband Progress Report, FCC 12-90 ¶ 57, Table 6 (Aug. 14, 2012) (“*Eighth Report*”) (contrasting June 2010 deployment rates with June 2011 deployment rates). To put this statistic in context, it is important to note that millions of these Americans that the Commission deemed unserved *did* have access to services with speeds that were vastly in excess of what was available in 1996, but those speeds did not meet the 4 Mbps/1 Mbps benchmark (footnote continued...)

cost component of the Universal Service Fund (“USF”) to promote the deployment of broadband, the Commission stated that, “in many of these areas there is little reason to believe that Congress’s desire ‘to ensure that all people of the United States have access to broadband capability’ will be met any time soon if current policies are not reformed.”<sup>8</sup> But in the year that followed, and before a dime of high-cost USF had been repurposed for broadband, the private sector deployed fixed broadband services alone to over 7 million – more than one fourth – of these previously-unserved Americans.<sup>9</sup>

According to the *Eighth Report*, as of June 2011, more than 94 percent of the approximately 316 million Americans had access to fixed broadband services.<sup>10</sup> And, according to the SBI data, over two-thirds of the 19 million Americans that still lacked such access had access to mobile broadband services.<sup>11</sup> Although the Commission decided not to incorporate mobile broadband services into its consideration of whether broadband is being deployed in a reasonable and timely fashion, the reality is that, even as of a year ago, only 1.7 percent of Americans did not have access to either fixed or mobile broadband.<sup>12</sup>

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(...footnote continued)

that the Commission established in 2010. *See id.*; *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, Amended by the Broadband Data Improvement Act*, Sixth Broadband Deployment Report, 25 FCC Rcd. 9556 ¶¶ 9-15 (2010) (replacing the original 200 kbps/200 kbps speed benchmark with a 4 Mbps/1 Mbps speed benchmark).

<sup>8</sup> *Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing a Unified Inter-carrier Compensation Regime; Federal-State Joint Board on Universal Service; Lifeline and Link-Up*, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 4554 ¶ 5 (2011).

<sup>9</sup> *Eighth Report* ¶ 57, Table 6.

<sup>10</sup> *Id.*

<sup>11</sup> *Id.* Table 15.

<sup>12</sup> *Id.* To make matters even better, a significant number of these remaining Americans are likely served by at least one provider of satellite broadband services.

And even this sliver is continuing to shrink as Comcast and other broadband providers continue to expand their networks to previously unserved communities. In 2011, Comcast alone expanded its broadband network by 2,044 miles, allowing it to offer broadband Internet services to 199,876 homes that were previously not served by Comcast's network.<sup>13</sup> Comcast also made upgrades to its network that now allow it to provide broadband service to 33 additional rural communities, and it provided 211 courtesy broadband accounts to schools, libraries, and other community institutions in areas with low broadband penetration rates.<sup>14</sup> In July 2012, Comcast doubled, at no extra charge to subscribers, the downstream speeds of its Blast! and Extreme service tiers in Northeastern markets, from 25 to 50 Mbps and 50 to 105 Mbps, respectively, and announced its groundbreaking XFINITY Platinum Internet tier, offering subscribers in Northeastern markets speeds of up to 305 Mbps/65 Mbps.<sup>15</sup>

The marketplace for fixed and mobile broadband services is undeniably healthy and dynamic. In June 2012, Verizon announced FiOS Quantum, offering speeds of up to 300 Mbps/65 Mbps to customers in its FiOS footprint.<sup>16</sup> Time Warner Cable and Charter

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<sup>13</sup> See *Comcast Corporation & NBCUniversal Media LLC*, Annual Report of Compliance with Transaction Conditions, MB Docket No. 10-56, at 29 (Feb. 28, 2012) (“*Comcast/NBCU First Annual Compliance Report*”). This expansion far exceeds what was required by the conditions adopted in the *Comcast/NBCU Merger Order*. See *Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc., for Consent to Assign Licenses and Transfer Control of Licensees*, Memorandum Opinion & Order, 26 FCC Rcd. 4238, app. A § XVI (2011).

<sup>14</sup> *Comcast/NBCU First Annual Compliance Report* at 29.

<sup>15</sup> See Press Release, Comcast Corp., *Comcast Doubles Speeds of Two Xfinity Internet Speed Tiers at No Additional Cost to Customers* (July 24, 2012), available at <http://www.comcast.com/About/PressRelease/PressReleaseDetail.ashx?PRID=1205&SCRedirect=true>; Steve Donohue, *Comcast Launches 305 Mbps Xfinity Platinum Internet Tier, Doubles Speed of ‘Blast!’ and ‘Extreme’ Packages*, Fierce Cable, July 24, 2012, available at <http://www.fiercecable.com/story/comcast-launches-305-mbps-xfinity-platinum-internet-tier-doubles-speed-blas/2012-07-24>.

<sup>16</sup> See Press Release, Verizon, *Verizon Combines Insane Internet Speeds with Sensible Value in New FiOS Bundles* (June 18, 2012), available at <http://newscenter.verizon.com/press-releases/verizon/2012/verizon-combines-insane.html>.

Communications both significantly increased the speeds available to many of their subscribers at no additional cost,<sup>17</sup> and Charter appears poised to offer a 300 Mbps service of its own.<sup>18</sup>

Google, albeit with the help of unusual local accommodations, has made significant progress in launching Google Fiber in Kansas City,<sup>19</sup> and there is speculation that Google will expand this project into other major markets in the near future.<sup>20</sup> Google is not alone in its fiber deployment efforts – the nonprofit organization Gig.U has taken substantial steps toward deploying fiber networks in college towns,<sup>21</sup> and Time Warner Cable recently announced plans to deploy last-mile fiber to much of Manhattan.<sup>22</sup>

Mobile broadband providers, for their part, are rapidly expanding the coverage of their LTE networks to unserved areas. Verizon alone now offers LTE service to seventy-five percent of the country.<sup>23</sup> AT&T expects to double its LTE coverage in 2012, and both AT&T and Sprint

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<sup>17</sup> See Press Release, Time Warner Cable, *Time Warner Cable Boosts Internet Speeds in New York City, NJ, and the Hudson Valley* (Mar. 19, 2012), available at <http://www.timewarnercable.com/nynj/about/inthenewsdetails.ashx?PRID=3490&MarketID=50>; Press Release, Charter Communications, *Charter Bringing More Power to Internet Users with Increased Download and Upload Speeds* (Dec. 1, 2011), available at <http://www.prnewswire.com/news-releases/charter-bringing-more-power-to-internet-users-with-increased-download-and-upload-speeds-134847363.html>.

<sup>18</sup> See Sean Buckley, *Charter Working on 300 Mbps Speed Tier to Stay Apace with Comcast and Verizon*, Fierce Telecom, Aug. 21, 2012, available at <http://www.fiercetelecom.com/story/charter-working-300-mbps-speed-tier-stay-apace-comcast-and-verizon/2012-08-21>.

<sup>19</sup> See FCC News Release, *Statement of Commissioner Ajit Pai on his Visit to Kansas City's Google Fiber Project* (Sept. 5, 2012).

<sup>20</sup> See Nicholas Carlson, *Google Wants to Be Your Cable TV Provider, Sources Tell Analyst*, Business Insider, Sept. 4, 2012, available at <http://www.businessinsider.com/google-wants-to-bring-free-high-speed-internet-to-a-city-near-you-says-analyst-2012-9>.

<sup>21</sup> See *Upgrading America: The One-Year Anniversary of Gig.U* (July 27, 2012), available at <http://www.gig-u.org/wp-content/uploads/2011/07/GigU-One-Year-Report-072712.pdf>.

<sup>22</sup> See Marguerite Reardon, *Time Warner Cable Invests \$25M to Build 1 Gbps Fiber Network*, CNET News, Aug. 28, 2012, [http://news.cnet.com/8301-1023\\_3-57501699-93/time-warner-cable-invests-\\$25m-to-build-1-gbps-fiber-network/](http://news.cnet.com/8301-1023_3-57501699-93/time-warner-cable-invests-$25m-to-build-1-gbps-fiber-network/).

<sup>23</sup> See Roger Cheng, *Verizon LTE Hits 34 New Markets, Blankets 75 Percent of U.S.*, CNET News, Aug. 15, 2012, [http://news.cnet.com/8301-1035\\_3-57493532-94/verizon-lte-hits-34-new-markets-blankets-75-percent-of-u.s./](http://news.cnet.com/8301-1035_3-57493532-94/verizon-lte-hits-34-new-markets-blankets-75-percent-of-u.s./).

plan to complete their LTE deployment by year-end 2013.<sup>24</sup> T-Mobile plans to join the LTE fray in 2013, aided in large part by its recent acquisition of AWS spectrum from Verizon.<sup>25</sup>

Meanwhile, satellite broadband providers are continuing to invest substantial resources in their networks, offering increasingly robust broadband Internet services to Americans in even the most remote parts of the country. ViaSat recently launched its new satellite, ViaSat-1, which was “designed to drive a quantum shift in the speed and quality of satellite broadband service[.]”<sup>26</sup> This development now allows ViaSat to offer subscribers speeds of up to 12 Mbps/3 Mbps,<sup>27</sup> and has prompted ViaSat to initiate a large-scale marketing blitz and bolster its operations to cope with growing demand.<sup>28</sup> Similarly, HughesNet recently began testing its EchoStar XVII satellite, which offers “well over 100 Gbps capacity” and will allow HughesNet to offer services with download speeds of up to 25 Mbps, well above the Commission’s benchmark for broadband Internet services.<sup>29</sup>

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<sup>24</sup> See Infographic, *AT&T: The Nation’s Largest 4G Network*, [http://www.att.com/Common/about\\_us/pdf/4g\\_evolution\\_infographic.pdf](http://www.att.com/Common/about_us/pdf/4g_evolution_infographic.pdf) (last visited Sept. 20, 2012); Press Release, Sprint, *Sprint Continues Nationwide 4G LTE Expansion, Adding Four More Cities to Broaden Its Coverage* (Aug. 29, 2012), available at [http://newsroom.sprint.com/article\\_display.cfm?article\\_id=2375](http://newsroom.sprint.com/article_display.cfm?article_id=2375).

<sup>25</sup> See Press Release, T-Mobile, *T-Mobile Signs Spectrum Agreement with Verizon Wireless* (June 25, 2012), available at <http://newsroom.t-mobile.com/articles/VerizonSpectrumAgreement>; *Applications of Cellco Partnership d/b/a Verizon Wireless and SpectrumCo LLC and Cox TMI, LLC For Consent To Assign AWS-1 Licenses; Applications of Verizon Wireless and Leap for Consent To Exchange Lower 700 MHz, AWS-1, and PCS Licenses; Applications of T-Mobile License LLC and Cellco Partnership d/b/a Verizon Wireless for Consent to Assign Licenses*, Memorandum Opinion & Order and Declaratory Ruling, FCC 12-95 (Aug. 23, 2012).

<sup>26</sup> Comments of ViaSat, WC Docket No. 10-90, at 5 (Apr. 18, 2011).

<sup>27</sup> See Exede Internet, *Plans, Pricing & Options*, <http://www.exede.com/internet-packages-pricing> (last visited Sept. 20, 2012).

<sup>28</sup> See Mark Seavy, *ViaSat to Launch Exede Broadband Service Advertising Campaign in Q4*, *Communications Daily*, Sept. 5, 2012, at 4-6.

<sup>29</sup> See Press Release, Hughes Network Systems, *EchoStar XVII Satellite with JUPITER High-Throughput Technology Successfully Positioned in Orbital Slot* (July 23, 2012), available at [http://www.hughes.com/HNS%20Library%20Press%20Release/07-23-12\\_EchoStar\\_XVII\\_Reaches\\_Final\\_Orbit.pdf](http://www.hughes.com/HNS%20Library%20Press%20Release/07-23-12_EchoStar_XVII_Reaches_Final_Orbit.pdf); see also Seavy, *supra* note 28, at 5.

Clearly, a wide range of private sector broadband providers are actively striving to improve the quality and reach of their offerings. These efforts are particularly impressive in light of the challenges inherent in deploying broadband services across the United States compared with other countries. For example, as the Commission has recognized, population density in the United States is about one-fourth that of Europe, one-tenth that of Japan, and one-fifteenth that of South Korea.<sup>30</sup> The United States' low population density means that broadband Internet providers, on average, must invest significantly more resources to deploy longer last mile facilities to reach American consumers.<sup>31</sup> Yet the United States still leads the world in cable modem coverage, total number of fixed broadband subscribers, and total number of mobile broadband subscribers.<sup>32</sup>

In addition to this private sector investment, Americans are beginning to see the impact of investments made through the Broadband Technology Opportunities Program ("BTOP") and Broadband Initiatives Program ("BIP").<sup>33</sup> And now, the Commission has begun to subsidize broadband deployment through the creation of the Connect America Fund and the Mobility Fund.<sup>34</sup> Undoubtedly, the efforts of the private sector, in tandem with these initiatives, will

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<sup>30</sup> *International Comparison Requirements Pursuant to the Broadband Data Improvement Act; International Broadband Data Report*, IB Docket No. 10-171, GN Docket No. 11-121, Third Report, DA 12-1334 ¶ 22 (Aug. 21, 2012) ("*Third International Broadband Data Report*").

<sup>31</sup> See Robert D. Atkinson, et al., *Explaining International Broadband Leadership* 10-12 (May 2008), available at <http://www.itif.org/files/ExplainingBBLeadership.pdf>.

<sup>32</sup> See *Third International Broadband Data Report* ¶¶ 2, 20.

<sup>33</sup> See *Eighth Report* ¶ 15 (indicating that BTOP projects have led 259,446 households to subscribe to broadband Internet services, and BIP projects will bring broadband service to an additional 2.8 million households, reaching 7 million people, 360,000 businesses, and 30,000 anchor institutions.)

<sup>34</sup> The first stage of CAF funding will assist fixed broadband providers in providing services to nearly 400,000 additional unserved Americans in 37 states. See FCC News Release, *FCC Kicks-Off 'Connect America Fund' with Major Announcement: Nearly 400,000 Unserved Americans in Rural Communities in 37 States Will Gain Access to High-Speed Internet Within Three Years* (July 25, 2012). The upcoming Mobility Fund Phase 1 (footnote continued...)

cause the dwindling number of Americans unserved by broadband to continue to decline. The Commission should recognize that deployment is occurring at a rate far beyond “reasonable and timely.”

### **III. THE COMMISSION SHOULD CONDUCT ITS INQUIRY CONSISTENT WITH CONGRESS’S STATUTORY DIRECTIVE.**

Section 706 directs the Commission to conduct an inquiry “concerning the availability of advanced telecommunications capability to all Americans” in which it shall “determine whether advanced telecommunications capability *is being deployed* to all Americans in a reasonable and timely fashion.”<sup>35</sup> Despite this clear directive, in recent years, the Commission has shifted emphasis away from the rapid pace of deployment by misconstruing the statute in two significant ways.

First, the Commission has focused on the extent to which broadband *has been deployed* rather than the extent to which it *is being deployed*. As Commissioner Pai points out, the use of the progressive present tense in Section 706 indicates that the Commission’s inquiry should assess *progress* in the deployment of broadband to all Americans rather than achievement of that goal.<sup>36</sup> In other words, Congress did not intend for these reports to merely present a snapshot of the state of broadband deployment at any given moment in time; rather, these reports should examine the *progress* of broadband deployment – including ongoing efforts – and analyze whether that *progress* is “reasonable and timely.”

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(...footnote continued)

Auction promises to assist mobile broadband providers in bringing “3G or better mobile voice and broadband services” to many more unserved Americans. *Mobility Fund Phase I Auction Scheduled for September 27, 2012 Notice and Filing Requirements and Other Procedures for Auction 901*, Public Notice, 27 FCC Rcd. 4725 ¶ 2 (2012).

<sup>35</sup> 47 U.S.C. § 1302(b) (emphasis added).

<sup>36</sup> See *Eighth Report*, Statement of Commissioner Ajit Pai.

In the *Seventh Report*, the Commission found that it was appropriate to consider “existing deployment and current actions that will meaningfully affect broadband deployment in the near future, even if those efforts have not yet resulted in broadband deployment or subscription that would be captured in data upon which the Commission relies in making its assessments.”<sup>37</sup> However, the *Eighth Report* gives ongoing deployment activity short shrift, and the Commission’s central conclusion therein appears to be based almost entirely on static deployment rates, measuring the current status of deployment against the ultimate goal of universal broadband, rather than the progress made in the time since the Commission’s previous report.<sup>38</sup> This glass-half-empty approach clearly is not the standard that Congress established in Section 706.

Second, the Commission has concluded that “‘deployment’ and ‘availability’ are broader than ‘physical deployment,’”<sup>39</sup> thereby expanding its inquiry into areas such as “cost, quality, and adoption.”<sup>40</sup> Section 706 expressly states that the Commission’s inquiry should be limited to the “availability” and “deployment” of “advanced telecommunications capability to all

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<sup>37</sup> *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 & Order on Reconsideration, 26 FCC Rcd. 8008 ¶ 47 (2011) (“*Seventh Report*”). In the *Eighth Report*, the Commission adopted the *Seventh Report*’s interpretation of this standard. See *Eighth Report* ¶ 135 n.347.

<sup>38</sup> See *Eighth Report* ¶ 135 (“Our analysis shows that the nation’s broadband deployment gap remains significant and is particularly pronounced for Americans living in rural areas and on Tribal lands. We find that as of June 30, 2011, approximately 19 million Americans did not have access to fixed broadband. . . . Moreover, as many as 80 percent of E-rate recipients say that their broadband connections do not fully meet their needs, and 78 percent of recipients say that they need additional bandwidth. These data combined with our findings concerning availability above provide further indication that broadband is not yet being reasonably and timely deployed to all Americans.”).

<sup>39</sup> See *Seventh Report* ¶¶ 18-20; *Eighth Report* ¶ 27.

<sup>40</sup> See *Seventh Report* ¶ 19; *Eighth Report* ¶ 27.

Americans.”<sup>41</sup> There is no indication that Congress intended “availability” or “deployment” to include the price and quality of broadband or whether consumers purchase broadband service.

Even if such factors were relevant to the Commission’s inquiry, the marketplace is delivering services across a broad range of price points and service characteristics, as evidenced by the discussion in the previous section. And, as a number of commenters have stressed before, broadband providers face persistent pressure from a range of current and potential competitors to continuously improve their services.<sup>42</sup> For its part, Comcast has steadily improved the quality and value of its broadband Internet service since it began offering this service in 1996. Over this period, the speed of connections offered under Comcast’s standard broadband Internet service tier has increased by approximately 900 percent, while the price that subscribers to this service pay per Mbps has declined by at least 87 percent.

Other examples of such improvements were evident in the *Second Measuring Broadband America Report*, in which the Commission found that providers have made “striking across-the-board-improvements on key metrics underlying user performance.”<sup>43</sup> The *Report* indicates that the average American consumer subscribed to a significantly faster speed tier in 2012 than 2011, largely as a result of broadband providers voluntarily upgrading their networks and, in many

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<sup>41</sup> Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153.

<sup>42</sup> See, e.g., Comments of Verizon, GN Docket No. 10-159, at 5-16 (Sept. 7, 2010) (explaining that competition has driven massive capital expenditures by both fixed and mobile providers); Comments of USTelecom, GN Docket No. 09-137, at 5-8 (Sept. 4, 2009) (explaining that the high degree of cross-platform competition in the United States has driven significant improvements in broadband technology).

<sup>43</sup> Office of Eng’g & Tech. & Consumer & Gov’t Affairs Bureau, *Measuring Broadband America: A Report on Consumer Wireline Broadband Performance in the U.S.* (July 2012) (“*Second Measuring Broadband America Report*”), <http://www.fcc.gov/measuring-broadband-america/2012/july>. For example, the *Report* found that American broadband providers deliver on average 96 percent of advertised speeds. See *id.* at 10. Actual speeds delivered by Comcast and multiple other providers routinely exceed advertised speeds, both in average 24-hour measurements and peak period measurements. See *id.* at 17, Chart 1.

cases, increasing customers' speeds for no extra charge.<sup>44</sup> These positive developments are but a few of many examples of the efforts that broadband providers consistently take to improve their services.

Furthermore, on the most fundamental level, broadband providers have competitive incentives that are consistent with the public interest in promoting adoption of broadband throughout their service areas. In addition, Comcast and other providers are fully engaged in improving adoption rates through efforts such as low-cost programs and digital literacy training with minimal assistance from the government.<sup>45</sup> For example, Comcast's Internet Essentials is a groundbreaking, important effort to increase broadband adoption throughout Comcast's footprint.<sup>46</sup> The Internet Essentials program addresses three key barriers to adoption identified in the National Broadband Plan – the cost of broadband access for low income homes; the lack of a computing device in the home; and the lack of digital literacy skills – and, in the process, is aimed at boosting the number of low-income homes using broadband within Comcast's service area. This program has been extremely successful and now serves nearly 400,000 low-income

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<sup>44</sup> *Id.* at 46, Figure 4.

<sup>45</sup> For example, of approximately \$4 billion of BTOP funds awarded by NTIA, only \$251 million were devoted to broadband adoption programs. See NTIA, *Broadband Technology Opportunities Program (BTOP) Quarterly Program Status Report* (June 2012), available at [http://www.ntia.doc.gov/files/ntia/publications/btop\\_13th\\_quarterly\\_report.pdf](http://www.ntia.doc.gov/files/ntia/publications/btop_13th_quarterly_report.pdf).

<sup>46</sup> Comcast has taken a number of recent steps to expand and improve this program. For example, Comcast expanded eligibility from households with at least one child in the free lunch program to households with at least one child in the reduced-price lunch program, and Comcast doubled the downstream speed of the \$9.95 broadband service available to eligible households. See Stephanie Mlot, *Comcast's Low-Income Internet Program Reaches 100,000 Families*, PC Magazine, Aug. 16, 2012, available at <http://www.pcmag.com/article2/0,2817,2408572,00.asp>. In addition, Comcast improved the digital literacy component of the program by launching an enhanced online Learning Center. See Susan Jin Davis, *Internet Essentials Launches Enhanced Online Learning Center*, Comcast Voices (July 19, 2012), <http://blog.comcast.com/2012/07/internet-essentials-launches-enhanced-online-learning-center.html>.

Americans.<sup>47</sup> Comcast looks forward to growing Internet Essentials and offering even more Americans a chance to share in the benefits of the digital age.<sup>48</sup>

In short, to meet its statutory obligation, in its next *Broadband Progress Report* the Commission should confine its inquiry to whether broadband is being deployed in a reasonable and timely fashion. Evaluating the rate at which deployment is occurring, rather than simply asking whether universal deployment has been achieved, is consistent with the plain language of Section 706. And the Commission need not assess factors such as “cost, quality, and adoption,” as consideration of those factors requires that the Commission go beyond its statutory mandate and, in any event, the marketplace continually drives private sector broadband providers to continuously upgrade their services, and to make them available to the widest range of consumers possible.

#### **IV. THE COMMISSION SHOULD REFRAIN FROM ADOPTING PROPOSALS THAT WOULD CAUSE IT TO DRIFT FURTHER FROM ITS STATUTORY MOORINGS.**

In the *Notice*, the Commission proposes a number of modifications to its analytical framework for determining whether broadband is being deployed in a reasonable and timely fashion. Of particular note, the Commission raises the possibility of increasing the broadband speed benchmark, proposes to create new latency and capacity standards for broadband, and seeks comment on whether it should find that deployment only exists to the extent that *both fixed*

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<sup>47</sup> See Mlot, *supra* note 46.

<sup>48</sup> Comcast and other providers are also engaged in a number of other efforts to leverage the power of technology to make a difference in people’s lives. For example, Comcast is the largest supporter of the One Economy Corporation’s Digital Connectors program, which provides technology and leadership training to at-risk youth. See One Economy Corporation, *What We Do, Community Technology & Education*, <http://www.one-economy.com/community-based-technology-education/> (last visited Sept. 20, 2012). And, as discussed further below, Comcast and others are increasingly experimenting with various pricing models in order to ensure that their offerings appeal to even those Americans with low levels of demand for broadband. See *infra* § IV.C.

*and mobile* broadband services are available to a given household or area.<sup>49</sup> It is unclear why the Commission would seek to do this. None of these proposals is consistent with the directive of Section 706; rather, each of them would move the finish line, further understating the degree to which broadband Internet services are actually being deployed across the United States and creating the false impression that America’s broadband deployment has shifted into reverse. Therefore, the Commission should refrain from adopting these proposals.

**A. The Commission Should Not Raise the Broadband Speed Benchmark.**

In the National Broadband Plan, 4 Mbps/1 Mbps was chosen as the speed benchmark for the Plan’s “aggressive” deployment goal.<sup>50</sup> It stated that, because speed requirements could grow faster than they historically have, or alternatively, compression technology or shifts in customer usage patterns could slow the growth of bandwidth needs, the Commission should review this speed benchmark every four years.<sup>51</sup> Now, just *two* years after the completion of the Plan, the Commission is considering increasing the speed benchmark and concluding that 4 Mbps/1 Mbps no longer qualifies as “broadband.”<sup>52</sup> Doing so at this point would be premature and irrational and potentially counterproductive. The Commission should maintain the approach adopted in the National Broadband Plan and retain the current speed benchmark for at least two more years as it had originally planned.

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<sup>49</sup> We address the Commission’s treatment of mobile broadband services in Section V, *infra*.

<sup>50</sup> *See National Broadband Plan* at 135.

<sup>51</sup> *See id.*

<sup>52</sup> The Commission raised questions about the speed benchmark in last year’s NOI as well, but not to the extent or with the same level of detail that it does this year. *See generally 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 Deployment Notice of Inquiry, 25 FCC Rcd. 11355 (2010).

Moreover, the Commission should be cautious about continuously increasing the benchmark to match the needs of bandwidth-intensive applications and services that do not necessarily reflect the typical consumer's use of broadband Internet service. Such an approach would likely lead the Commission to establish an unrealistic speed benchmark for what constitutes "broadband."<sup>53</sup> If the Commission seeks to base its analysis on the uses that matter most to broadband Internet subscribers, it should base its benchmark on the applications and services that have achieved widespread use in the marketplace. The current benchmark achieves the correct balance. Although that benchmark may evolve over time, it must always stay moored to reality; it makes little sense to measure real-world deployment based on still-speculative, aspirational goals.

**B. The Commission Should Not Adopt Latency and Capacity Standards for Broadband.**

In the *Notice*, the Commission proposes to create latency and capacity standards as part of the benchmark for fixed broadband services.<sup>54</sup> The Commission has not imposed such

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<sup>53</sup> For example, by this rationale, the Commission could decide to base its speed benchmark on the 4K or 8K video standards, which would require very high speed connections to stream, long before these standards achieved widespread use online. See *Second Measuring Broadband America Report* at 13 ("For the future, video content delivery companies are researching ultra high definition video services (e.g. 4K technology which has a resolution of 12 Megapixels per frame versus present day 1080p High Definition television with a 2 Megapixel resolution), which would require higher transmission speeds."); Jeff Baumgartner, *Comcast/NBCU Ultra-HD Demo*, Light Reading (Aug. 9, 2012) ("Super Hi-Vision sure gobbles up the bandwidth. The special camera pours out video at 48Gbit/s. The compressed transport stream (using H.264 compression for this demo) that was eventually fed to the 85-inch NHK/Sharp prototype 8K display still weighed in at 360Mbit/s."), [http://www.lightreading.com/document.asp?doc\\_id=223661&](http://www.lightreading.com/document.asp?doc_id=223661&).

<sup>54</sup> See *Notice* ¶¶ 14-21. The Commission notes that, in the *USF/ICC Reform Order*, "the Commission went beyond speed and considered latency and capacity as additional core characteristics that affect what consumers can do with their broadband service." *Id.* ¶ 4. Specifically, in the *USF/ICC Reform Order*, the Commission required carriers seeking high-cost universal service support to offer services "reasonably comparable to the typical speeds, latency, and usage limits (if any) of comparable broadband services in urban areas." *Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and Reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing an Unified Intercarrier Compensation Regime; Federal-State Joint Board on Universal Service; Lifeline and Link-Up; Universal Service Reform— Mobility Fund*, Report and (footnote continued...)

standards in any of its eight previous reports to date, and for good reason – the term “broadband” is not commonly understood to require a certain level of latency or a certain monthly allotment of data capacity.<sup>55</sup> And Section 706 requires that broadband services be “high-speed”; it makes no reference to either latency or capacity.<sup>56</sup>

The Commission’s proposal to incorporate latency into the benchmark would make sense only if there were evidence of some problem with latency over fixed broadband Internet connections. But the Commission’s *Second Measuring Broadband America Report* showed that broadband Internet providers were improving latency across their networks,<sup>57</sup> and concluded that latency-sensitive applications were “adequately supported by all of the service tiers discussed in

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(...footnote continued)

Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 17663 ¶ 91 (2011) (“*USF/ICC Reform Order*”). With respect to latency, the Commission required services to offer “sufficiently low latency to enable use of real-time applications, such as VoIP,” noting that “broadband measurement test results showed that most terrestrial wireline technologies could reliably provide latency of less than 100 milliseconds.” *Id.* ¶ 96. With respect to capacity, the Commission explained that “[a] 250 GB monthly data limit for CAF-funded fixed broadband offerings would likely be adequate at this time,” but “a usage limit significantly below . . . current offerings (e.g., a 10 GB monthly data limit) would not be [adequate].” *Id.* ¶¶ 98-99. In keeping with the policy adopted in that Order, in the *Notice*, the Commission asks whether it should “adopt a 100 millisecond latency threshold for our fixed-terrestrial broadband benchmark pursuant to Section 706” and seeks comment on “whether and how the Commission should consider capacity restrictions when benchmarking ‘advanced telecommunications capacity’ for fixed services.” *Notice* ¶¶ 16, 19.

<sup>55</sup> See Dale Hatfield, *The Challenge of Increasing Broadband Capacity*, 63 FED. COMM. L.J., 46-47 (2010-2011) (“Transmission rates in the tens of kbps range are typically categorized as narrowband; rates in the hundreds of kbps range are typically categorized as wideband; and rates in the Mbps range are typically classified as broadband. So, to summarize in today’s terms, in a digital network, the term broadband is associated with a transmission rate of several Mbps or more.”). With regard to Section 706’s definitional standard that broadband services “enable users to originate and receive high-quality voice, data, graphics, and video telecommunications,” Commissioner Pai draws a helpful analogy to the Commission’s definition of Interconnected VoIP service. See *Eighth Report*, Statement of Commissioner Ajit Pai (“The Communications Act and our rules define interconnected voice over Internet Protocol (VoIP) service as one that ‘[e]nables real-time, two-way voice communications.’ Yet I tend to doubt that we would let VoIP providers escape their E911 obligations or universal service contribution obligations if they imposed usage limits on their customers (and then claimed that they were not really offering interconnected VoIP service).”) (internal citation omitted).

<sup>56</sup> See 47 U.S.C. § 1302(d)(1).

<sup>57</sup> *Second Measuring Broadband America Report* at 11-12.

[the] Report.”<sup>58</sup> Accordingly, there is no reason for the Commission to include latency in the benchmark.

The Commission’s proposal to add a capacity component to the benchmark is particularly misguided. As with latency, adding a capacity component to the benchmark would not aid the Commission’s analysis. There is no evidence that any fixed broadband provider has ever proposed a service subject to a usage limit so low and so rigid that broadband Internet service is not meaningfully available to those with access to such service. Rather, as edge providers have explained, usage limits imposed to date have had little if any effect on edge providers or their customers.<sup>59</sup>

Moreover, to the extent the marketplace is demonstrating any changes in the way broadband Internet providers are implementing usage policies, those changes generally lean towards giving users *more* capacity. To be sure, broadband Internet providers are currently experimenting with a number of pricing models, but these models in no way reduce the deployment or availability of broadband: there is no evidence whatsoever that *any* of these models have the effect – or even come close to having the effect – of somehow precluding or interfering with the “deployment” or “availability” of broadband Internet service. Pricing models take a number of forms, such as unlimited services, services subject to usage caps, and services that offer subscribers the ability to purchase additional capacity beyond an initial threshold.

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<sup>58</sup> *Id.* at 13.

<sup>59</sup> *See, e.g.*, Netflix Inc., Quarterly Report (Form 8-K), at 8 (Apr. 25, 2011) (“Comcast has had 250 gigabytes caps for years without overage charges and that hasn't been a problem for Comcast customers or for [Netflix.]”), available at <http://files.shareholder.com/downloads/NFLX/1872575600x0xS1193125-11-107751/1065280/filing.pdf>.

For example, Verizon's FiOS Internet service offers subscribers unlimited capacity.<sup>60</sup> AT&T's DSL service is subject to a 150 GB usage limit, while its higher-speed U-Verse service is subject to a 250 GB usage limit.<sup>61</sup> And, while AT&T states that 98 percent of its subscribers do not exceed these thresholds, the few subscribers that do exceed those thresholds can purchase additional capacity in increments of 50 GB for \$10 each.<sup>62</sup> Time Warner Cable has implemented a unique program in Texas markets that allows subscribers to reduce their monthly bills by voluntarily opting-in to a usage limit.<sup>63</sup> For its part, Comcast had imposed a usage cap of 250 GB in 2008, but, in light of the evolution of the marketplace and technology, Comcast announced earlier this year that it would *replace* the existing cap with more flexible data usage management approaches.<sup>64</sup> Comcast is currently trialing different approaches to determine the approaches that best maximize the benefits of Comcast's network for all of Comcast's subscribers.<sup>65</sup>

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<sup>60</sup> See Verizon, *FiOS Internet*, <http://www22.verizon.com/home/fios-fastest-internet/> (last visited Sept. 20, 2012).

<sup>61</sup> See AT&T, *Facts About Your Data Plan*, <http://www.att.com/esupport/internet/usage.jsp#fbid=S6aQMhbsvqY> (last visited Sept. 20, 2012).

<sup>62</sup> *Id.*

<sup>63</sup> See Jeff Simmerman, *Launching an Optional Usage-Based Broadband Pricing Plan in Southern Texas*, Time Warner Cable Untangled (Feb. 27, 2012), <http://www.twcableuntangled.com/2012/02/launching-an-optional-usage-based-pricing-plan-in-southern-texas-2/>.

<sup>64</sup> Cathy Avgiris, *Comcast to Replace Usage Cap with Improved Data Usage Management Approaches*, Comcast Voices (May 17, 2012), <http://blog.comcast.com/2012/05/comcast-to-replace-usage-cap-with-improved-data-usage-management-approaches.html>. In other words, Comcast did not merely raise the previous cap; rather, Comcast has suspended the cap and will replace it with a new approach based on the results of field trials of different models.

<sup>65</sup> These trials are currently being conducted in Nashville, TN, and will soon commence in Tucson, AZ. See Comcast, XFINITY Help and Support, *What are the different plans you will be launching?* (Sept. 5, 2012), <http://customer.comcast.com/help-and-support/internet/data-usage-what-are-the-different-plans-launching> (last visited Sept. 9, 2012). In Nashville, all subscribers are given an initial 300 GB usage allotment per month. In Tucson, subscribers to Comcast's higher service tiers will be given higher initial usage allotments that range up to 600 GB per month. Very few subscribers will exceed these allotments in either market, as Comcast broadband  
(footnote continued...)

Rather than reducing the availability of broadband, this broad range of experimentation in the marketplace has the potential to *increase* availability. Broadband Internet providers are more likely to deploy their networks to previously unserved communities if they can price their services in a way that allows them to recover the investment associated with such deployment. And, while services with purely unlimited capacity force the lighter users of the network to subsidize the heavier users,<sup>66</sup> usage-based pricing potentially allows providers to offer lower priced services to lighter users, facilitating adoption among those who may not otherwise subscribe to broadband. Thus, as FTC Chairman Jon Leibovitz has observed, usage-based billing offers one way of potentially closing the digital divide.<sup>67</sup>

Were the Commission to conclude that services with certain capacity limits do not qualify as “broadband” services, it would be blinding itself to the fact that tens of millions of Americans have chosen these options as their broadband services, and that many of the remaining Americans that do not currently have access to broadband or have not adopted broadband are the ones that stand to benefit the most from pricing model experimentation.

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(...footnote continued)

Internet subscribers’ median monthly use is only 10-12 GB per month. However, the few subscribers that do require more capacity can purchase it in 50 GB increments for \$10 each. *See id.*

<sup>66</sup> *See Preserving the Open Internet; Broadband Industry Practices*, Report and Order, 25 FCC Rcd. 17905 ¶ 72 (2010) (explaining that prohibiting usage-based pricing models “would force lighter end users of the network to subsidize heavier end users” and “would foreclose practices that may appropriately align incentives to encourage efficient use of networks”)

<sup>67</sup> *See* Tony Romm, *Leibowitz Says Metering Could Help Broadband Growth*, Politico’s Morning Tech (June 16, 2011), <http://dyn.politico.com/members/forums/thread.cfm?catid=24&subcatid=78&threadid=5569178> (“I don’t quite understand why something like metering hasn’t really taken off yet. There’s not a product in the world where you don’t pay for what you consume. That’s true for essential facilities and utilities like electricity. You don’t pay \$50 and turn on every light for as long as you want. It seems to me (that one way of closing the broadband gap) is letting people pay for what you use.”).

**C. The Commission’s Proposals Fail to Acknowledge That Other Factors in the Broadband Ecosystem Directly Impact a Consumer’s Use of Broadband.**

As it moves forward in this proceeding, the Commission should acknowledge that a variety of factors in the broadband ecosystem, aside from speed, latency, and capacity, determine what a consumer is able to do with a given broadband connection. In particular, decisions made by the edge providers that create and format the applications, services, and content that subscribers access over their broadband connections directly affect the speeds and latency a consumer needs, the amount of capacity a consumer uses, and other demands on those connections. For example, application providers sometimes design their applications to transmit significant amounts of background data, driving up speed and capacity demands with only marginal benefit to the user.<sup>68</sup> Simply continuing to increase speed and capacity benchmarks for broadband Internet services will never address this issue, as edge providers will have little to no incentive to design their applications and services more efficiently. Instead, the Commission should recognize that market forces are properly encouraging all members of the Internet ecosystem to maximize the capabilities of current networks and ensure a positive experience for consumers.

Two recent decisions by Netflix illustrate how edge providers can act to make their applications and services more bandwidth efficient. First, Netflix gave its subscribers in Canada three settings for video quality: “Good,” “Better,” and “Best.”<sup>69</sup> Netflix reports that the setting

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<sup>68</sup> See Peter Sevcik, *Empowering Internet Users to Manage Bandwidth Consumption*, NetForecast (June 2012), available at [https://www.techpolicyinstitute.org/files/nfr5109\\_empowering\\_internet\\_users\\_to\\_manage\\_broadband\\_consumption.pdf](https://www.techpolicyinstitute.org/files/nfr5109_empowering_internet_users_to_manage_broadband_consumption.pdf).

<sup>69</sup> See *Netflix Lowers Data Usage by 2/3 for Members in Canada*, Netflix U.S. & Canada Blog (Mar. 28, 2011), <http://blog.netflix.com/2011/03/netflix-lowers-data-usage-by-23-for.html>.

that a customer selects has “minimal impact to video quality.”<sup>70</sup> Because the video files associated with these settings are encoded at bitrates that range from 625 kbps to 4.8 Mbps,<sup>71</sup> the connection speed required to stream a video file under each setting differs immensely. In addition, the consumer’s choice of quality setting has a substantial effect on the customer’s data usage. Netflix states that streaming 30 hours of content would consume approximately 9 GB of data on the “Good” setting, 20 GB of data on the “Better” setting, and 67 GB of data on the “Best” setting—all with “minimal impact to video quality.”<sup>72</sup>

Second, Netflix recently partnered with video encoding startup eyeIO to dramatically reduce the amount of speed and capacity required *for a given level of video quality*.<sup>73</sup> According to eyeIO, its encoding technology can deliver similar quality to other encoders while cutting bandwidth demands in half.<sup>74</sup> For example, Netflix’s 720p HD video files are currently encoded at 3.8 Mbps, but with eyeIO’s encoding technology, they can be encoded at 1.8 Mbps and still deliver 720p HD quality.<sup>75</sup> According to its CEO, “eyeIO provides a straightforward solution for accommodating the rapidly growing demand for video delivery around the world by alleviating the overwhelming bandwidth currently required to stream video.”<sup>76</sup> Netflix calls eyeIO “an

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<sup>70</sup> *Id.*

<sup>71</sup> The “Good” files are encoded at a video/audio bitrate of 625 kbps/64 kbps; the “Better” files are encoded at a video/audio bitrate of 1300 kbps/192 kbps; and the “Best” (1080 HD) files are encoded at a video/audio bitrate of 4800 kbps/384 kbps. *Id.*

<sup>72</sup> *Id.*

<sup>73</sup> See Janko Roettgers, *eyeIO: Netflix’s Secret Weapon Against Bandwidth Caps?*, GigaOM (Feb. 1, 2012), <http://gigaom.com/video/eyeio-video-encoding-netflix/>.

<sup>74</sup> *See id.*

<sup>75</sup> *See id.*

<sup>76</sup> Press Release, eyeIO, *eyeIO Unveils Breakthrough Video Encoding Technology, Netflix First to Deploy* (Feb. 1, 2012), available at <http://eyeio.com/pr.html>.

important part of the technology we use to improve video quality and overcome bandwidth challenges presented by Internet infrastructure.”<sup>77</sup>

Moving forward, the Commission should recognize the role that all members of the Internet ecosystem play in maximizing the capabilities of current networks. A single-minded focus on continuously increasing the benchmark for broadband Internet services would distort positive market forces by removing incentives for edge providers to design their applications and services more efficiently, while forcing broadband Internet providers to continuously bear the brunt of that inefficiency.<sup>78</sup>

**V. THE COMMISSION SHOULD FIND THAT BROADBAND HAS BEEN DEPLOYED TO A HOUSEHOLD OR AREA IF EITHER FIXED OR MOBILE BROADBAND HAS BEEN DEPLOYED.**

For years, a variety of commenters have called for the Commission to consider the rapid deployment of mobile broadband services in its determination of whether broadband is being

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<sup>77</sup> *Id.* Similar recent developments allow audio files to be encoded and transmitted more efficiently as well. For example, Skype recently developed a new audio codec called “Opus,” which offers “higher quality than a broad collection of existing codecs for both voice and music” while “using up fewer megabytes.” See Skype, *Skype and a New Audio Codec*, The Big Blog (Sept. 12, 2012), [http://blogs.skype.com/en/2012/09/skype\\_and\\_a\\_new\\_audio\\_codec.html](http://blogs.skype.com/en/2012/09/skype_and_a_new_audio_codec.html).

<sup>78</sup> Similarly, decisions by edge providers play a significant role in determining what a consumer is able to do with a given level of latency. For example, Vonage has explained that it has “designed its service to deliver high-quality and reliable communications even when faced with high levels of . . . latency[.]” See Comments of Vonage Holdings Corp., PS Docket No. 11-82, at 3 (Aug. 8, 2011). And technologies that improve services’ tolerance for latency will likely improve over time. The Commission recently decided to abandon its proposed outage reporting thresholds that were based on performance metrics for interconnected VoIP services in part to “avoid the need to revise packet loss, latency, and jitter standards as providers continue to improve performance.” *Proposed Extension of Part 4 of the Commission’s Rules Regarding Outage Reporting to Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers*, Report and Order, 27 FCC Rcd. 2650 ¶ 81 (2012) (citing Vonage Comments); see also Comments of Comcast Corporation, PS Docket No. 11-82, at 4 (Aug. 8, 2011) (“[A]dopting fixed quality-of-service thresholds would bind the rules to today’s technological standards, exposing them to the risk of being outdated if superior compression capabilities were to emerge, and potentially even hindering the development of such technologies.”).

deployed in a reasonable and timely fashion.<sup>79</sup> It has become increasingly untenable for the Commission to exclude mobile broadband services from its consideration as the quality and reach of these services has improved immensely. At long last, the Commission appears poised to consider mobile broadband in next year’s analysis, but, astonishingly, it seeks comment on an approach that would cause it to find that the goals of Section 706 are *even further from being met* than was the case prior to consideration of mobile.

In the *Notice*, the Commission states that “it may be appropriate to hold that access to *both fixed and mobile broadband* is necessary for broadband to be available under section 706 – that is, that reasonable and timely deployment would exist only to the extent that both fixed and mobile capabilities are becoming available.”<sup>80</sup> Such an interpretation directly conflicts with the plain language of the statute. Section 706 defines advanced telecommunications capability “without regard to any transmission media or technology.”<sup>81</sup> In other words, if a consumer is served by a broadband service, whether that service is fixed or mobile is irrelevant. The

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<sup>79</sup> E.g., Comments of TIA, GN Docket No. 11-121, at 2-3 (Sept. 6, 2011) (“The Commission simply cannot develop an accurate report on the state of the deployment of ‘advanced telecommunications capability’ unless it includes wireless mobile broadband in its analysis.”); Comments of Free State Foundation, GN Docket No. 11-121, at 12 (Sept. 6, 2011) (“This disregard of wireless broadband similarly suggests the Commission may be looking for pretexts to impose new regulations in the name of accelerating broadband deployment.”); Reply Comments of MetroPCS, GN Docket No. 10-159, at 5 (Oct. 5, 2010) (“The *Sixth Report’s* findings were a drastic departure from previous Section 706 reports because the Commission decided to make its determination not by the congressionally mandated standard of the rate of deployment, but rather by its own standard of whether every American is currently being served – and even further, served at a particular speed. But consumers do already have access to numerous forms of broadband connectivity, and the market for those services is very competitive, especially among wireless carriers, whose services cover nearly all Americans. Wireless carriers have spent billions of dollars in recent years, deploying robust broadband technologies. And, as for the deployment of broadband services, wireless carriers are once again spending billions more to deploy new and upgrade their existing networks for the next-generation of services, such as 4G LTE and WiMax broadband, which will not only expand coverage to more Americans, but which will also provide greater speeds and more advanced broadband services.”); Comments of CTIA, GN Docket No. 10-159, at 12 (Sept. 7, 2010) (“Considering broadband in a manner that largely excludes the unique attributes of mobility imposes a single, provincial view of what broadband communications ought to look like.”).

<sup>80</sup> *Notice* ¶ 5 (emphasis added).

<sup>81</sup> 47 U.S.C. § 1302(d)(1).

Commission’s clear directive is to determine the extent to which broadband – “*using any technology*” – is being deployed in a reasonable and timely manner.<sup>82</sup> Therefore, the Commission should find that broadband has been deployed to a household or area if *either* fixed *or* mobile broadband that meets the current 4 Mbps/1 Mbps has been deployed.

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<sup>82</sup> *Id.* (emphasis added). The Commission also asks whether it should include satellite broadband services in its consideration. *Notice* ¶ 43. As explained above, satellite providers have made strides in improving the quality of their services. A household or area should be considered served to the extent that it is served by satellite services that meet the Commission’s current broadband benchmark (rather than its proposed modified benchmark, which incorporates latency and capacity standards).

## VI. CONCLUSION

Since the passage of the Telecommunications Act of 1996, broadband providers have deployed broadband Internet services to nearly every corner of the United States and are rapidly deploying services to the small number of Americans that remain unserved. The Commission's inquiry should fully acknowledge this progress and should be based on a framework that adheres to the language of Section 706. Such an inquiry would find that broadband clearly *is* being deployed in a reasonable and timely fashion.

Respectfully submitted,

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