

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Inquiry Concerning the Deployment of	)	GN Docket No. 14-126
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	)	

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AT&T respectfully submits these comments in response to the Commission’s Notice of Inquiry in the above-captioned docket.<sup>1</sup>

**INTRODUCTION AND SUMMARY**

As required by Congress, the Commission has issued its annual *Notice* seeking comment on whether “advanced telecommunications capability” is “being deployed to all Americans on a reasonable and timely basis.”<sup>2</sup> In its last Section 706 report (two years ago), the Commission’s data showed that ninety-eight percent of Americans have access to advanced telecommunications capabilities, and since then the broadband industry has continued to invest tens of billions of dollars to expand and upgrade those capabilities even further. AT&T and the rest of the industry

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<sup>1</sup> Tenth Broadband Progress Notice of Inquiry, *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. 14-126, FCC 14-113 (released August 5, 2014) (“*Notice*”).

<sup>2</sup> 47 U.S.C. § 1302.

today are actively focused on building for the future, investing in faster and more capable network facilities, including fiber-to-the-home (“FTTH”) deployments that offer speeds far in excess of today’s broadband networks and which will ensure that Americans continue to have access to advanced capabilities for years to come.

Although the industry remains well ahead of the curve, the centerpiece of the Commission’s *Notice* is a proposal to change the definition of advanced capabilities – in particular, a proposal to increase the minimum “advanced” capabilities benchmark from 4 Mbps download speeds to 10 Mbps. Given the pace at which the industry is investing in advanced capabilities, there is no present need to redefine “advanced” capabilities, and, as discussed below, the proposed redefinition is not adequately supported. The Commission should undertake a more rigorous, fact-based and statutory analysis before determining what, if any, definitional revisions are warranted at this time. Even recognizing that the definition of broadband will evolve over time, the *Notice* presents no record basis for a conclusion at this time that a service of less than 10 Mbps is no longer “advanced.”

Section 706 contains a specific definition of “advanced telecommunications capability” for purposes of this annual report. The Commission is required to determine whether Americans have access to capabilities that “enable[]users to originate and receive high-quality voice, data, graphics, and video telecommunications.”<sup>3</sup> The *Notice* asks whether the Commission should establish a new definition based on a one-size-fits-all estimate of the connection speeds that “high use” (and often affluent) broadband households would desire if they were trying to access three or more relatively bandwidth-intensive applications all at the same time.<sup>4</sup> Section 706, however, is not myopically focused on the subset of consumers that are the *heaviest* users of

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<sup>3</sup> 47 U.S.C. § 1302(d)(1).

<sup>4</sup> *See Notice* ¶ 12 & Table 2.

advanced services; rather, it asks only whether Americans have access to capabilities that are sufficient to use the specific applications listed in the statute.

Moreover, the Commission's reasoning in estimating a need for 10 Mbps is flawed in multiple respects. The Commission theorizes that "advanced" should be defined as 10 Mbps downstream by assuming a "high use" household of three people who are simultaneously attempting to watch a "super HD movie," make an "HD video call," save files to the cloud, and perform background functions such as syncing alerts.<sup>5</sup> Assuming these four uses require 7.0, 1.5, 1.1, 0.4 Mbps respectively, the Commission simply adds these abstract bandwidth amounts together and concludes that the statutory definition should be 10 Mbps.<sup>6</sup> Broadband networks and applications today, however, are engineered in ways that efficiently allow concurrent uses, so that less overall bandwidth would typically be necessary. The Commission's assumption that the full bandwidth amounts would be continuously needed is incorrect, and it would be arbitrary to establish a new definition of advanced telecommunications capabilities based on simple addition of these abstract (and arbitrarily chosen) bandwidth estimates. In addition, the Commission's central assumption that consumers need 7 Mbps to access high quality video is unsupported and inconsistent with the public positions of major streaming video providers that tell their customers that less is required.

More generally, the Commission's hypothesis of four concurrent uses, including HD video and telephony, is arbitrary, and is devoid of any legal analysis that would support the suggestion that Congress would have intended that section 706 be read as a mandate to ensure the ubiquitous availability of such capabilities. For example, the *Notice* provides no information on the percentage of customers that choose a 10 Mbps or higher Internet access service when

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<sup>5</sup> See *Notice* ¶ 12 & Table 2.

<sup>6</sup> *Id.*

they have the option to do so, or the percentage of customers that have such capabilities but do not use them. This omission is important because for a large portion of AT&T customers that purchase a 12 Mbps Internet access service, the 15-minute period representing their *peak* usage in a typical week is well below 10 Mbps. Thus, it would appear that many Americans, including many who actually choose a higher throughput service, do not have usage patterns that resemble the Commission’s hypothetical “high use household.” The statutory definition of advanced telecommunications capabilities, and the purpose of Section 706’s provisions encouraging deployment, make sense only if they are interpreted in ways that are calibrated to the full range of how Americans use these services.

Finally, the Commission’s suggestion that the advanced capabilities definition should perhaps be modified to add certain minimum requirements relating to latency and data usage would not only be unnecessary as to wireline services, but would arbitrarily ignore the different network characteristics of wireless and satellite services that make such a change inappropriate for such technologies. For all of these reasons, there is no need or lawful basis to change the definition of advanced capabilities at this time.

**I. THE INDUSTRY CONTINUES TO INVEST BILLIONS OF DOLLARS EACH YEAR TO DEPLOY ADVANCED TELECOMMUNICATIONS CAPABILITIES.**

In 2012, the last time the Commission made findings in a Section 706 inquiry, its data showed that 98 percent of American households had access to advanced telecommunications capabilities.<sup>7</sup> Specifically, it found that more than 94 percent of Americans had access to fixed

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<sup>7</sup> See Eighth Broadband Progress Report, *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*, 27 FCC Rcd. 10342 (2012) (“*Eighth Report*”), Table 15, Americans Without Access to Broadband Meeting the Speed Benchmark (Only 5.5 million Americans, 1.7 percent of the population, are without access to either fixed or mobile broadband).

broadband services that met the Commission’s speed benchmarks, and that 94 percent of Americans had access to mobile broadband.<sup>8</sup>

The private sector has invested more than \$1.2 trillion dollars since 1996 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.<sup>9</sup> During the past two years, that investment has continued apace, as both fixed<sup>10</sup> and mobile<sup>11</sup> broadband providers have invested many billions of dollars expanding their broadband networks. For its part, AT&T has undertaken a multi-billion dollar plan of investment called Project VIP to extend the reach of both its fixed wireline IP broadband network and its LTE mobile wireless network, which now reaches more than 300 million people.<sup>12</sup>

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<sup>8</sup> *Eighth Report*, Chart 1, Households with Access to the Fixed Broadband Speed Benchmark by Technology; Table 14, Americans Without Access to Mobile Services.

<sup>9</sup> See USTelecom, “Broadband Investment,” <http://www.ustelecom.org/broadband-industry/broadband-industry-stats/investment> (last visited Sept. 4, 2014).

<sup>10</sup> See, e.g., NCTA, “Setting the Record Straight on Broadband Investment,” available at <https://www.ncta.com/platform/public-policy/setting-the-record-straight-on-broadband-investment/> (May 13, 2014) (“Infrastructure investment is cyclical in nature but over the last seven years, capital investment levels [for cable companies] have ranged between \$13 billion and \$14.5 billion, and the levels for the last two years [2012 and 2013] were higher than the previous three years”).

<sup>11</sup> CTIA-The Wireless Association, “Wireless Quick Facts: Investment,” available at <http://www.ctia.org/your-wireless-life/how-wireless-works/wireless-quick-facts> (“U.S. carriers invested a one year record high of more than \$33 billion in capital expenditures in 2013, and more than \$260 billion over the last ten years”).

<sup>12</sup> See AT&T, 2013 Annual Report: Project VIP Highlights, available at [http://www.att.com/Investor/ATT\\_Annual/2013/project\\_velocity\\_ip.html](http://www.att.com/Investor/ATT_Annual/2013/project_velocity_ip.html) (last visited Sept. 4, 2014); AT&T Press Release, “AT&T 4G LTE Network Reaches More Than 300 Million People,” September 4, 2014, available at [http://about.att.com/story/att\\_4g\\_lte\\_network\\_expands\\_reach\\_to\\_more\\_than\\_300\\_million\\_ameri\\_cans.html](http://about.att.com/story/att_4g_lte_network_expands_reach_to_more_than_300_million_ameri_cans.html).

This investment, moreover, is future-focused, as broadband providers are actively deploying robust, higher capacity networks designed to accommodate growth in bandwidth requirements for years to come. A number of providers are launching “fiber-to-the-home” (“FTTH”) deployments. AT&T has already begun deploying its new GigaPower FTTH service, which will soon provide download speeds of 1 Gbps.<sup>13</sup> The cable industry has announced a new technology specification, which they now call “Gigasphere” (instead of DOCSIS 3.1), which will support Gigabit speeds, and some cable companies are already beginning to deploy Gigabit broadband services.<sup>14</sup> And there are significant new entrants as well, including Google, which has announced plans to deploy a 1 Gbps service in Atlanta, Charlotte, Nashville, Phoenix, Portland, Raleigh-Durham, Salt Lake City, San Antonio, and San Jose.<sup>15</sup>

Providers are also increasingly deploying more innovative solutions to provide more and better choices in more remote parts of the country – for example, AT&T has announced that its merger with DirecTV will enable it to deploy an advanced fixed wireless local loop service to 13 million customer locations, many of which have very limited wireline broadband options today.

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<sup>13</sup> See, e.g., Gary Jacobson, “AT&T launches ultra-fast GigaPower Internet service in Dallas area today,” Dallas Morning News (Aug. 14, 2014), available at <http://www.dallasnews.com/business/technology/headlines/20140814-att-launches-ultra-fast-gigapower-internet-service-in-dallas-area-today.ece> (“In April, the company said it was exploring expansion to more than 100 other cities across the country. Since then it has committed to providing the service in more than a dozen cities, including Houston, San Antonio, Miami, Nashville and several cities in North Carolina”); see also Sean Buckley, “CenturyLink’s 16-city 1 Gig expansion will bring cloud bundles to more small businesses,” Fierce Wireless (Aug. 7, 2014), available at <http://www.fiercetelecom.com/story/centurylink-16-city-1-gig-expansion-will-bring-cloud-bundles-more-small-bus/2014-08-07>.

<sup>14</sup> NCTA, “Cable Wi-Fi Hotspots Grow, Speeds Explode, and Gigasphere is Born,” available at <https://www.ncta.com/platform/technology-devices/cable-wi-fi-hotspots-grow-speeds-explode-and-gigasphere-is-born/>.

<sup>15</sup> Google Fiber, “The future of fiber,” <https://fiber.google.com/newcities/> (last visited Sept. 4, 2014).

In short, the industry continues to strive to remain ahead of the curve in ensuring that Americans will continue to have advanced telecommunications capabilities well into the future. Given that industry continues to push ahead impressively on so many fronts, there is no pressing need for the Commission to modify the definition of “advanced telecommunications capability” for this report based on hypothetical profiles of broadband usage or similar notions.

## **II. THE COMMISSION’S PROPOSED MODIFICATIONS OF THE DEFINITION OF “ADVANCED TELECOMMUNICATIONS CAPABILITY” ARE INCONSISTENT WITH THE LAW, TECHNOLOGY, AND HOW CONSUMERS ACTUALLY USE THESE SERVICES.**

The Commission seeks comment on a number of possible modifications to the definition of “advanced telecommunications capability.”<sup>16</sup> The *Notice*’s key proposal is to increase the benchmark for download speeds to 10 Mbps, based on assumptions about how much bandwidth a “high use” household would want while using a number of relatively bandwidth-intensive services all at the same time.<sup>17</sup> As shown below, the Commission’s proposed modifications are premature and not adequately supported insofar as they are inconsistent with (1) Section 706; (2) technology and basic engineering principles; and (3) the facts concerning consumer bandwidth consumption today.

### **A. The Commission’s Proposed Modifications Are Inconsistent With Section 706.**

Section 706 defines advanced telecommunications capability as “high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.”<sup>18</sup> The statute does *not* define advanced capabilities with reference solely to the needs or desires of the most intense

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<sup>16</sup> *Notice* ¶¶ 5-32.

<sup>17</sup> *See Notice* ¶ 12.

<sup>18</sup> 47 U.S.C. § 1302(d)(1).

broadband users; rather, it includes those capabilities that enable a typical user to obtain a “high-quality” transmission.<sup>19</sup> Accordingly, both the Commission and the D.C. Circuit have treated the statutory definition as including only the minimum bandwidth necessary to enable “the most popular forms” of Internet uses and the services that consumers “regularly” use.<sup>20</sup>

The *Notice* proposal rests primarily on assumed bandwidth requirements for “high-definition” (“HD”) streaming video services.<sup>21</sup> The Commission’s assumptions appears to be based solely on Netflix’s recommended download speeds,<sup>22</sup> but the fact that Netflix recommends that consumers purchase a broadband *connection* with certain download speeds does not mean that Netflix is saying that such speeds are *necessary* to access a “high-quality” transmission of its video service. In fact, all of the major video streaming services cite lower bandwidth speeds.<sup>23</sup>

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<sup>19</sup> Indeed, the statute does not define advanced capabilities by reference to any speed threshold, and there is no need for the Commission to attempt to determine any such threshold.

<sup>20</sup> Report, *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*, 14 FCC Rcd. 2398, 2406 ¶ 20 (1999) (choosing original 200 Kbps threshold because it was “enough to provide the *most popular* forms of broadband—to change web pages as fast as one can flip through the pages of a book and to transmit full-motion video”) (emphasis added); *Verizon v. FCC*, 740 F.3d 623, 641 (D.C. Cir. 2014) (noting that Commission increased threshold to 4 Mbps to establish a “threshold more appropriate to current consumer behavior and expectations” and that was “enough” to permit what “consumers now regularly use”).

<sup>21</sup> See *Notice* ¶ 12 & Table 2 (suggesting that an “HD movie” would require 5 Mbps and a “super HD” movie would require 7 Mbps download speeds).

<sup>22</sup> See *id.* & n.27 (citing Netflix, “Internet Connection Speed Recommendations,” <https://help.netflix.com/en/node/306> (last visited Sept. 4, 2014)).

<sup>23</sup> Hulu, “Hulu.com system requirements,” <http://www.hulu.com/help/articles/166380> (last visited Sept. 4, 2014); Amazon, “System Requirements for Streaming on Your Computer,” <http://www.amazon.com/gp/help/customer/display.html?nodeId=201422810> (last visited Sept. 4, 2014); Vudu, “What bandwidth do I need to use the VUDU service?,” <http://support.vudu.com/?supportPage=answers/list> (last visited Sept. 4, 2014); Time Warner Cable, “What are the minimum system requirements to access HBO GO or Max GO on my device?,” <http://www.timewarnercable.com/en/residential-home/support/faqs/faqs-tv/hbogomaxgo/what-are-the-minimum-system-re.html> (last visited Sept. 4, 2014); see also

Consumer behavior strongly reinforces the conclusion that a 10 Mbps service exceeds what many Americans need today to enable basic, high-quality transmissions. AT&T data show that, in areas where its customers have access to a service that offers download speeds greater than 10 Mbps, many consumers choose to buy services with lower download speeds. Indeed, even in areas where only a 6 Mbps service is available, a substantial portion of consumers choose to purchase a lower-speed service. And as explained below, most consumers that purchase a higher-speed service rarely use that much bandwidth.

Particularly given that Section 706 now provides the Commission with an affirmative grant of authority to promote advanced capabilities, the Commission must be judicious and faithful to the statutory language in defining the term advanced capabilities. The statute defines advanced telecommunications capabilities as “the capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications.” That definition should be applied with reference to how consumers use broadband services today; it does not give license for a casual, back-of-the-envelope calculation of bandwidth requirements of the highest-volume households that are simultaneously using multiple bandwidth-intensive applications, particularly in the absence of evidence that many households actually use broadband services in that manner. Broadband deployment is extraordinarily expensive. Regulatory goals for such deployment must be based on real needs and real uses; otherwise those goals could displace other important priorities.

**B. The Commission’s Proposal Ignores Common Technology Capabilities and Engineering Practices.**

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Charter Communications, “HBO GO . MAX GO,” <http://www.myaccount.charter.com/customers/support.aspx?supportarticleid=2625> (last visited Sept. 4, 2014).

The rationale provided in the *Notice* for increasing the speed benchmark to 10 Mbps would be arbitrary for the additional reason that it is based on assumptions that are not consistent with the technology at issue.

The *Notice* seeks comment on a speed benchmark that would be based on an assessment of “common household broadband use.”<sup>24</sup> The Commission proposes an analysis in which it assumes that the typical household has three members and each member is attempting to use the broadband connection at the same time.<sup>25</sup> The Commission further assumes that the household members are simultaneously streaming a “super HD movie,” making an “HD video call,” saving files to and from the cloud, and conducting background activities such as “syncing emails, alerts, and weather.”<sup>26</sup> Assuming these four uses require 7.0, 1.5, 1.1, and 0.4 Mbps download speeds respectively, the Commission adds these speeds together (arriving at 10 Mbps) and proposes, on that basis, to define advanced telecommunications capability as *requiring* download speeds of at least 10 Mbps.<sup>27</sup>

This rationale is flawed both conceptually and in its specifics. It is flawed conceptually because the Commission’s method of reasoning is at odds with the reality of how broadband networks are engineered. Providers engineer broadband networks to handle simultaneous users efficiently through statistical multiplexing and other technologies such as buffering and caching. Different applications present different demands on the network: not all applications require continuous downloads of data, and not all applications have the same latency requirements.

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<sup>24</sup> *Notice* ¶ 8.

<sup>25</sup> *See Notice* ¶ 9 (U.S. Census data suggests that the average household has 2.58 members).

<sup>26</sup> *Notice* ¶ 12 & Table 2.

<sup>27</sup> *Id.*

Today's broadband networks have the ability to manage these varying demands in ways that maintain "high quality" for each service.

Accordingly, the Commission's mode of analysis – *i.e.*, identifying four different types of uses, estimating in the abstract the amount of bandwidth each would need, and simply adding the bandwidth amounts up to a total – is not correct. The bandwidth needs are not strictly additive in that sense. In reality, the total bandwidth used by a household at any given moment would depend heavily on the specific types of applications that the members of the households were using, which may vary widely.

But the specifics of the Commission's example are also flawed because its estimates of the bandwidth needs for these uses are overstated. The proposed 10 Mbps benchmark depends almost entirely on the Commission's assumption that one of the members of the household is watching a "super HD movie" requiring continuous 7 Mbps download speeds. The Commission never explains what it means by a "super HD" movie (as opposed to a mere "HD" movie), nor does it explain where it got the 7 Mbps figure.<sup>28</sup> Even assuming the Commission is relying on Netflix's connection speed recommendations, Netflix's recommendation of which *connection speed* to purchase is likely intended to anticipate the possibility that other household members may use the connection at the same time. That is why, as explained above, streaming video sites consistently identify lower download speeds as the *minimum required* to access steaming video services.

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<sup>28</sup> For streaming standard definition video, the Commission cites Netflix's Internet Connection Speed Recommendations webpage, *see Notice* ¶ 12 n.27, and the Commission is presumably relying on Netflix's recommendations for its estimates of "HD" and "super HD" streaming as well, although it provides no citation. However, the cited Netflix webpage today identifies only "HD" video, for which it recommends a 5 Mbps connection, and "Ultra HD," a next-generation video format that has not been widely adopted as of today and for which it recommends a 25 Mbps connection. Netflix, "Internet Connection Speed Recommendations," <https://help.netflix.com/en/node/306> (last visited Sept. 4, 2014).

The specific applications the Commission has listed in Table 2 are designed in ways that accommodate other concurrent uses. For example, the amount of bandwidth that is required for streaming video at any given moment can vary greatly and depends on a number of factors, including the encoding and compression technologies used, the real-time streaming management technology, and the type of video content,<sup>29</sup> among other factors. In addition, companies like Netflix uses adaptive streaming to dynamically adjust picture quality based on the available bandwidth; thus, if other users in the household are consuming resources that would be needed for HD streaming, the stream can automatically adjust to standard definition for that period.

Similarly, cloud storage activities can be managed in ways that reduce simultaneous demands on the broadband network; indeed, many users can and do use software features to schedule those activities during off-peak periods (*e.g.*, after midnight). “Background” uses, such as updating alerts, do not require continuous downloads and can also be managed so as not to interfere with other concurrent uses of the network. And the Commission’s reliance on Udacity to provide an estimate of the bandwidth for interactive education is another example in which the Commission is confusing a recommendation for a connection speed with an estimate of the minimum bandwidth actually required to access the service.<sup>30</sup>

There is also no basis for grounding the definition on household that is average-sized and “high use.” The inquiry under section 706 is intended to assess the rate of deployment to “all

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<sup>29</sup> The amount of movement from frame to frame can dramatically affect the amount of bandwidth that may be required at any given moment. For example, in a scene where a car moves across a stationary background, only the car’s movements need to be encoded, and the video can be highly compressed, reducing the required bandwidth.

<sup>30</sup> The Commission lists interactive education as requiring 2.0 Mbps, but in fact, Udacity’s website (which the *Notice* cites at ¶ 12 n.31) specifically says that 1 Mbps is the minimum speed required. *See* Udacity, “Technology Requirements,” <https://www.udacity.com/tech-requirements> (last visited Sept. 4, 2014). The Udacity service provides pre-recorded lectures which plainly provide flexibility in when a customer may watch them and which can take advantage of buffering when the Internet connection is busy.

Americans,” not to the average American, and therefore focusing on the average-sized household necessarily sets the definition at utilization levels that are above what many households would need, since there are millions of households of less than three persons. And, as explained above, there is no sound rationale for using the “high use” household scenario as the basis for the definition, because Section 706 is focused on what all Americans need to access the applications identified by Congress, not on the highest-use households.

**C. The Commission’s Proposal Is Inconsistent With How Consumers Actually Use Broadband Services.**

Finally, the Commission’s proposal does not account for the many differences in how consumers actually use these services and in the technologies they use to access these services.

First, consumers have a very broad range of needs and usage patterns when it comes to broadband services. Some users have very high-usage needs and choose to purchase services with a large amount of bandwidth (including 10 Mbps or even significantly higher). Many users today, however, have more modest needs and choose to buy services with lower download speeds. And many consumers who purchase higher download speeds do not actually use the capabilities of their service, which would suggest that they chose to buy higher download speeds merely to ensure that they have it available, not because they need such high speeds for their regular uses on a consistent basis.

Data concerning actual customer usage patterns confirm that the Commission’s assumptions are not valid. The Commission’s analysis looks at the time period 7 p.m. to 11 p.m. and bases its proposed 10 Mbps benchmark on the assumption that the highest use households would need 10 Mbps to perform a number of concurrent, bandwidth-intensive tasks.<sup>31</sup> AT&T data, however, show that, for the majority of customers that purchase AT&T’s broadband service

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<sup>31</sup> Notice ¶ 12.

that offers download speeds of 12 Mbps, the fifteen-minute window representing their peak usage over a full week is below 10 Mbps and in many cases well below 10 Mbps. Again, the Section 706 definition must be interpreted in light of the *range* of uses that all Americans would need to access high-quality services, not what the most affluent or most usage-intensive Americans may be choosing to buy for their own purposes.

Similarly, the Commission's suggestion that it should perhaps modify the definition of advanced capabilities to add certain minimum requirements relating to latency and data usage ignores significant differences in the technologies providers use to provide such capabilities.<sup>32</sup> As AT&T has previously explained, the Commission can presume that any wireline broadband service that provides 4 Mbps download speeds and 1 Mbps upload speeds will meet a latency standard sufficient for any real-time applications, including VoIP. In the Commission's most recent Measuring Broadband America report, it noted that "across all terrestrial technologies during peak periods, latency [of participating terrestrial providers] averaged around 29.6 ms compared to the July 2012 Report figure of 31 ms."<sup>33</sup> Such real-world measurements on networks meeting the existing definition far exceed the current industry-wide standard for VoIP, which is 100 ms one-way (*i.e.*, from the source to a destination), or 200 ms for a round-trip (*i.e.*, from the source to the destination and back to the original source).<sup>34</sup> Accordingly, there is no

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<sup>32</sup> Notice ¶¶ 25-30.

<sup>33</sup> Federal Communications Commission, *2013 Measuring Broadband America, February Report: A Report on Consumer Wireline Broadband Performance in the U.S.*, at 11 (Feb. 2013), available at <http://transition.fcc.gov/cgb/measuringbroadbandreport/2013/Measuring-Broadband-America-feb-2013.pdf>. This report also noted that the highest average round-trip latency for an individual terrestrial service tier was 67.7 ms (*id.*), far beneath industry standards.

<sup>34</sup> See Int'l Telecomm. Union, Y-1541, Series Y: Global Information Networks Infrastructure, Internet Protocol Aspects and Next-Generation Networks; Internet protocol aspects – Quality of service and network performance (Dec. 2011). Figure 1 of that document shows a 100 ms one-way allowance that applies to the IP network between User-Network Interfaces (UNI to UNI).

need to add to the complexity or burden of these Section 706 proceedings by seeking to measure latency performance or data usage allotments as an element of advanced telecommunications capabilities.

In all events, latency or minimum data usage allotments that might be appropriate for fixed wireline networks will in some cases be inappropriate for wireless or satellite services, and adopting a single minimum latency or data usage benchmark across all technologies would arbitrarily ignore the very real differences between the different technologies providers use to provide advanced capabilities. For example, the Commission's suggestion that the definition of advanced capabilities could turn in part on whether the provider ensured a certain data usage allowance, such as 100 GB per month,<sup>35</sup> appears to be focused on wireline networks and arbitrarily ignores the fact that wireless and satellite networks can have very different characteristics. Equally important, data usage allowances are much more dependent on the particular pricing models that providers happen to be using, and thus are more likely to change as competition spurs new, more innovative pricing models. The Commission should be careful to avoid using criteria for assessing advanced capabilities deployment that are likely to evolve in a dynamic and competitive marketplace.

#### **IV. THE COMMISSION CAN TAKE FURTHER STEPS TO REMOVE REGULATORY BARRIERS TO THE DEPLOYMENT OF BROADBAND NETWORKS.**

Regardless of what conclusions the Commission may reach in this proceeding, the Commission can still take a number of significant steps to eliminate costly legacy regulations and policies that undermine the business case for further broadband deployment.

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<sup>35</sup> Notice ¶¶ 27-29.

First, the Commission should set a date certain for the PSTN sunset, after which no carrier or customer should have rights to demand services or interconnection in TDM format. Simultaneously, the Commission must eliminate and/or reform legacy regulations that reduce the incentive for incumbents to invest in next-generation facilities. For example, certain legacy regulations, such as network disclosure requirements and section 251 and 271 wholesale obligations, may require carriers to maintain legacy TDM-based networks even after their IP networks are in place. While the Commission has recognized that “requiring an incumbent to maintain two networks” is costly, “possibly inefficient and reduces the incentive for incumbents to deploy” next generation facilities, it is certain that further investment in all-IP networks will stall out if carriers must incur the substantial costs of maintaining the TDM-network in addition to the IP network.

In addition, the Commission should make clear that section 214 requirements and COLR obligations do not apply when carriers replace TDM services with IP services. These requirements add regulatory uncertainty and needlessly delay achieving the Commission’s goal of transitioning to all-IP networks. Carriers should be permitted to make the TDM-to-IP transition upon providing notice to the FCC and its affected customers. Finally, the Commission should sunset a price cap carrier’s eligible telecommunications carrier (“ETC”) designation in all geographic areas where the carrier does not receive high-cost support. AT&T has detailed in other filings that the Commission’s current ETC requirements impose an unfunded mandate on price cap carriers to maintain obsolete TDM-based infrastructure in order to satisfy unnecessary ETC service obligations.<sup>36</sup> As demonstrated by the Commission’s own data, this diversion of

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<sup>36</sup> See, e.g., Comments of AT&T, WC Docket No. 10-90 et al. (filed August 8, 2014).

capital has impeded these carriers' ability to deploy broadband in high-cost areas.<sup>37</sup> The Commission would be acting within its Section 706 authority by sunsetting a price cap carrier's ETC designation and obligations in areas where it does not receive high-cost support, thereby removing a significant regulatory barrier to infrastructure investment.

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<sup>37</sup> See Report and Order and Further Notice of Proposed Rulemaking, *In the Matter of Connect America Fund et al.*, WC Docket No. 10-90 *et al.*, 26 FCC Rcd 17663, ¶ 127 (2011) (finding that over 80 percent of the locations unserved by broadband in 2011 were in price cap carrier areas).

## CONCLUSION

For the foregoing reasons, the *Notice* does not provide an adequate basis for modifying the Section 706 definition of “advanced telecommunications capability” at this time.

Respectfully Submitted,

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