Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of:

Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act	)	WT Docket No. 15-191
Lifeline and Link Up Reform and Modernization	)	WC Docket No. 11-42
Telecommunications Carriers Eligible for Universal Service Support	)	WC Docket No. 09-197
Connect America Fund	)	WC Docket No. 10-90

REPLY COMMENTS OF THE
TELECOMMUNICATIONS INDUSTRY ASSOCIATION

I. INTRODUCTION

The Telecommunications Industry Association (TIA)[1] hereby submits reply comments to the Commission's Public Notice in the above-referenced proceedings.[2] TIA has been a

[1] TIA is the leading trade association for the information and communications technology (ICT) industry, with member companies that manufacture or supply the products and services used in global communications across all technology platforms. TIA represents its members on the full range of public policy issues affecting the

strong proponent of ubiquitous broadband deployment, as an advocate for policies encouraging more adoption. The Telecommunications Industry Association appreciates the opportunity to comment on ways to promote public and private investment in broadband, and to increase adoption within underserved communities.

Experience indicates that the overwhelming majority of such deployment has come from private sector investment and TIA has long advocated for policies that remove regulatory barriers to private sector investment in new broadband facilities. TIA has participated in previous 706 proceedings, and will not repeat all of prior comments.[3] However, after reviewing the comments filed in this year's initial round, TIA seeks to address the technical and marketplace consideration associated with adoption rates and broadband speeds.

At the outset, TIA suggests that the policy challenges associated with broadband in 2015 are different from those posed in 2010 at the time of the National Broadband Plan. First, significant industry investment has taken place since 2010. As a direct result of this, the average connection speed for the U.S. as a whole in the second quarter of 2010 was 4.6 Mbps.

ICT industry and forges consensus on industry standards. For over 80 years, TIA has enhanced the business environment for broadband, mobile wireless, information technology, networks, cable, satellite, and unified communications. TIA is accredited by the American National Standards Institute (ANSI).

[2] 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. 15-191, FCC 15-101, released August 7, 2015; In the Matter of Lifeline and Link Up Reform and Modernization et al., WC Dkt Nos.11-42, 09-0197, and 10-90, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, Second Report and Order, and Memorandum Opinion and Order (NPRM), FCC 15-71, (rel. June 22, 2015). (Hereafter collectively as "PNs").

[3] See, Comments of TIA, 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 14-126, (filed September 4, 2014)

Fast forward to 2015 – the U.S. has an average connection speed at 11.9 Mbps.[4] As the notice observes, the definition of what actually constitutes broadband is becoming more complex. The Federal Communications Commission effectively moved the "goalposts" for broadband earlier this year by adopting a new 25 Mbps definition.[5] However, a practical matter, the standard required for many applications associated with broadband remains much lower.

Secondly, not only is broadband more available than was previously the case, but users also have more competitive broadband alternatives to choose from:

- 95% of housing units have one wired BB provider available;
- 99% have at least one wireless BB provider;
- 88% have at least two wired BB options to choose from.[6]

Perhaps the most significant change regarding broadband in the past half-decade has been the dramatic increase in America's use of mobile broadband connectivity. This is most visible with the rapid growth of smartphone adoption. These devices are essentially handheld computers integrated with a mobile telephone, allowing consumers to use them in much the same manner as their home computers. With smartphones replacing feature phones, the growth in the smartphone universe is straining available wireless spectrum.

In 2012, for the first time, wireless subscribers spent more on data than they did on voice. Spending on data rose by a third in 2012, and during the next four years, it will increase by 94

[4] See, Akamai , The State of the Internet; Q1 2015 Report https://www.akamai.com/us/en/multimedia/documents/content/Q1-2015-SOTI-report.pdf http://www.akamai.com/dl/content/q4-2014-soti-a4.pdf (last accessed September 16, 2015)

[5] See, Federal Communications Commission, *2015 BROADBAND PROGRESS REPORT* AND NOTICE OF INQUIRY (Rel. February 4, 2015)

[6] *See,* NTIA, National Broadband Map, Year-End 2013.

percent. TIA projects that the overall wireless market, including voice and data services, wireless handsets, wireless infrastructure equipment, and services in support of the wireless infrastructure, will expand at a 7.6 percent compound annual rate, reaching an estimated $364.5 billion in 2016 from $272.3 billion in 2012. Innovation and growth have also gone well beyond the smartphones. Demand for bandwidth consuming devices such as netbooks and tablets are skyrocketing.[7]

TIA regards broadband deployment as but one component of an overall "ecosystem" – combining connectivity with applications. Through economic and regulatory incentives for network deployments and upgrades, the U.S. Government can create investment in next-generation broadband infrastructure.

Continued investment in next-generation broadband networks promises major advances in education, healthcare, teleworking, e-commerce, public safety, and security. These capabilities are equipping users with the tools that are necessary to compete in the 21st century, making them far more productive, increasing their standards of living, and enhancing economic and physical security.

[7] This data, as well as all other projections and statistics provided in this document which are not cited to otherwise, are derived from the TIA 2015 ICT Market Review & Forecast, a proprietary annual publication from TIA containing distilled data and analysis on information and communications technology industry trends and market forecasts through the end of 2018. This document is available for purchase at http://www.tiaonline.org/resources/market-forecast.

II. APPILCATIONS DETERMINE REQUIRED SPEEDS

As a matter of marketplace reality, "One Speed No Longer Fits All." Instead, TIA anticipates that potential users are likely to be prepared to contract for a variety of broadband speeds and capacity, tied specifically to the particular applications they value. For example, mobile broadband users clearly opt to trade the convenience of not being tethered to a fixed connection over speed. Email, and even video streaming, may not be sufficient to encourage consumers to adopt the FCC's new preferred broadband standard.

Indeed, TIA anticipates increasingly that the distinction between "Mobile" and "Fixed" will become less clear as more traffic moves to "Heterogeneous Networks." [8] These HetNets will blur the distinction between Mobile and Fixed, further obscuring broadband performance metrics. Quite unlike the experience of universal phone service in which users either had voice service or they did not, universal broadband and universal broadband speeds involve less clear-cut metrics.

As discussed above, TIA anticipates that applications will drive user demand for higher broadband speeds. As a corollary to this, then the value users attach to specific broadband "rates" will be linked to specific application and services. To address this, it should be possible to link necessary connectivity requirements to the user's service.

[8] "Heterogeneous Networks" refers to wireless networks using different access technologies. For example, a wireless network which provides a service through a wireless LAN and is able to maintain the service when switching to a cellular network. see Archi Delphinanto; Ben Hillen; Igor Passchier; Bas van Schoonhoven; Frank den Hartog (January 2009). "Remote Discovery and Management of End-User Devices in Heterogeneous Private Networks". 6th IEEE Consumer Communications and Networking Conference (CCNC 2009).

"Just in time broadband capacity" could offer many consumers more value by giving reluctant adopters more flexibility and encouraging more adoption. As a result, users would be assured of not having to pay for more connectivity than necessary.

Examples of such potentially bundled connectivity services include:

- Healthcare remote monitoring;
- Advanced video streaming;
- Video conferencing, such as for educational applications, and
- Application associated with the Internet of Things (IoT), such a remote sensors.

As discussed above, given the widespread availability of broadband, further adoption depends upon compelling applications. Examples exist in:

- **Education:** The U.S. must continue to connect students and library users to the benefits of more robust broadband by increasing technological flexibility for E-Rate program participants, coupled with greater incentives for efficient and economical investment decisions. However, local jurisdictions also have a responsibility to transition student materials, such as textbooks, to electronic devices.

- **Healthcare:** The U.S. health care system is harnessing advances in ICT products and services to extend the delivery of care beyond the walls of the hospital and the doctor's office. Government policies must promote the role of ICTs in advancing healthcare, particularly the harnessing of patient-generated health data from remote monitoring devices and services which improve the quality of care for Americans while reducing costs for patients.

- **Public Safety Communications:** ICT products and services are critical enablers in saving lives. A nationwide public safety broadband network is the critical enabler by ensuring that first responders and other public safety professionals have reliable access anywhere to cutting-edge technologies for mission-critical applications. TIA strongly supports the establishment of, and investment in, a sustainable nationwide interoperable public safety broadband network (NPSBN) and the deployment of NG9-1-1. TIA supports the rapid adoption of "next-generation technology" into public safety communications networks.

- **Transportation systems:** Pro-innovation and pro-competition policies will promote the societal and economic benefits of an advanced intelligent transportation system (ITS) ecosystem. The deployment of autonomous vehicles and connected vehicle

communication technologies like advanced 4G/LTE, 5G, Wi-Fi, DSRC, and satellite will enhance vehicle safety and help ensure that the U.S. will be globally competitive in the ITS marketplace.

III. FLEXIBILITY TOWARD BROADBAND BUSINESS MODELS ADVANCES ADOPTION

Based on a number of metrics, broadband subscription rates lag availability as many potential users do not understand the value broadband' s value proposition as sufficient to justify its cost. Unquestionably, broadband subscription remains only one multiple expenditure of time and income that is competing for consumer attention.

As Connected Nation observes in its Lifeline comments "No longer are broadband challenges solely viewed as a question of availability, but are instead seen as multi-faceted problems that include the adoption and use of broadband and the extent to which those gaps impact education, employment, and community prosperity."[9] More specific are the conclusions of Connected Nation's surveys in eight states and Puerto Rico between 2011 and 2014 on these barriers to adoption. "These surveys confirm that the cost of subscription is one of the largest barriers to broadband adoption, cited as the main barrier by 21% of all non-adopting households."[10]

As Connected Nation notes, "applying a $9.25/month Lifeline subsidy to the cost of broadband when the Commission's 2015 Urban Rate Broadband Survey found the nationwide

[9] *See*, Comments of Connected Nation Inc. "Lifeline"docket, WC 11-42, 09-197 and 10-90 (filed August 31, 2015) at p2

[10] Ibid, at p9

urban average price for broadband to be approximately $50 per month for 10 Mbps download/1 Mbps upload service with a monthly 100 GB data allowance, "could be expected to increase broadband adoption by 11.5% to a price-sensitive population." While marking considerable progress, this "would not be sufficient to close the broadband adoption gap."

Nevertheless, TIA encourages the Commission to extend Lifeline support to broadband connectivity because that connectivity will provide increasingly important benefits to poor and underserved segments of the U.S. population. Such subsidies could also be augmented by corporate, charitable, or public sector entities.[11] As noted above, broadband can provide tremendous benefits by transmitting patient-generated health data from remote monitoring devices and services which improve the quality of care for Americans while reducing costs for patients. Many remote patient monitoring applications can be supported by low-bandwidth broadband connections which might be bundled with the telehealth service. By carefully estimating the data capacity necessary to support such applications, mobile operators can provide a low-cost service optimized for the data volumes required. This will provide an economical and flexible means for healthcare providers to take advantage of emerging technologies such as the "Internet of Things."

[11] See: Comments of Microsoft Corporate, "Lifeline" docket, WC 11-42, 09-197 and 10-90 (filed August 31, 2014) at p2-3 noting that "Microsoft provides financial support for affordable broadband through its non-profit partner EveryoneOn.org which offers home Internet service for as low as $10 to Americans living in communities with low median incomes."

TIA renews its concern that the Federal Communications Commission's Open Internet order[12] presents unintended barriers to encouraging broadband adoption. So-called "Zero" & "Low" rating marketing strategies in which the cost of connectivity is bundled with another service has the potential to make broadband more affordable, at the same time also serving as a gateway to more robust broadband offerings.[13] TIA encourages policymakers, including the FCC, to be flexible in allowing new competitive alternative business models – such as usage-based pricing plans and sponsored data plans – to be introduced in the market. For example, bundling the cost of broadband connectivity within specific services or application could reduce the economic barriers to adoption.

In effect, the FCC risks a policy in which in effect it "gives" $9.25 per month in broadband Lifeline support with one hand, only to take away potential broadband support through regulatory policies that inhibit "Zero" & "Low" rating marketing strategies under which some connectivity costs can be bundled with another service.

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[12] *See,* Federal Communications Commission, REPORT AND ORDER ON REMAND, DECLARATORY RULING, AND ORDER, Protecting and Promoting the Open Internet, GN Docket No. 14-28 (Adopted February 26, 2015, Rel. March 12, 2015)

[13] Zero-rating (also called toll-free data or sponsored data) is the practice of mobile network operators (MNO), mobile virtual network operators (MVNO), and Internet Service Providers (ISP) not to charge end customers for data used by specific applications or internet services through their network, in limited or metered data plans. Also see Diana Carew "Zero-Rating: Kick-Starting Internet Ecosystems in Developing Countries;" Progressive Policy Institute, March 2015 http://www.progressivepolicy.org/wp-content/uploads/2015/03/2015.03-Carew_Zero-Rating_Kick-Starting-Internet-Ecosystems-in-Developing-Countries.pdf (last accessed September 29, 2015)

IV. CONCLUSION

For the foregoing reasons, TIA urges the Commission to act consistently with the recommendations above.

Respectfully submitted,

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