

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

In the Matter of	)	
	)	
Petition of US Telecom for Forbearance	)	WC Docket 18-141
Pursuant to 47 U.S.C. § 160(c) to Accelerate)	)	
Investment in Broadband and Next-Generation	)	
Networks	)	

**ELECTRONIC FRONTIER FOUNDATION’S  
COMMENTS REGARDING US TELECOM PETITION FOR FORBEARANCE**

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## **I. Overview**

The Electronic Frontier Foundation (EFF) is deeply concerned that U.S. residents have few if any choices for high-speed Internet access (i.e., broadband speeds exceeding 100 megabits per second). This reality creates serious consumer harms in a wide range of markets and communities that depend on continually improving Internet access. Accordingly, EFF encourages the Federal Communications Commission (FCC) to take a more aggressive approach to promoting fiber to the home (FTTH) deployment.

That approach must include rejecting the US Telecom petition for UNE forbearance. Petitioner has not shown and cannot show how forbearance would improve competition or protect consumers. In reality, forbearance would do neither, for at least two reasons.

First, it will impede the development of competitive choices. Congress intended the shared obligation provisions as envisioned under the 1996 Telecommunications Act to promote competition and recognized that Incumbent Local Exchange Carriers (ILECs) represented a special bottleneck. The purpose of UNEs was to prevent ILECs from engaging in anticompetitive behavior such as raising prices as a means to block entry or outright withholding access, the very things US Telecom is asking the FCC to green light. Thanks to 96' Act requirements, the Competitive Local Exchange Carrier (CLEC) industry has entered broadband markets, competing at middle tier speeds of around 25 megabits per second (mbps) through copper networks to eventually deploy their own fiber. CLECs have been at the forefront of deploying private gigabit broadband to consumers and businesses.

Second, and relatedly, forbearance will impede fiber deployment. Publicly reported data by the FCC and international regulators overwhelmingly show the U.S. market is far behind its international competitors in connecting its citizens to fiber optic networks. Furthermore, the members of US Telecom have been reluctant to announce any national fiber to the home (FTTH) deployments despite increased capital from recent corporate tax cuts as well as deregulation brought on by the Restoring Internet Freedom Order. It is noteworthy that in the past few years nearly half of the United States' FTTH deployments originate from small ISPs such as CLECs. The US Telecom petition, if granted, would exacerbate the problem by impeding the deployment of fiber optic networks by impeding the private actors leading the charge.

## **II. About EFF**

The Electronic Frontier Foundation (EFF) is the leading nonprofit organization defending civil liberties in the digital world. Founded in 1990, EFF champions user privacy, free expression, and innovation through impact litigation, policy analysis, grassroots activism, and technology development. With over 40,000 dues-paying members and well over 1 million followers on social networks, we focus on promoting policies that benefit both creators and users of technology.

### **III. US Telecom forbearance petition is contrary to the public interest and will harm consumers by reducing broadband choice.**

US Telecom, as petitioner, must prove that enforcement of UNEs is (1) not necessary to ensure that the telecommunications carrier's charges, practices, classifications, or regulations are just, reasonable, and not unjustly or unreasonably discriminatory; (2) not necessary to protect consumers; and (3) consistent with the public interest, including that it will *promote competitive market conditions*.<sup>1</sup> Petitioner fails to meet this test.

#### **A. US Telecom underestimates the number of consumers impacted by its petition by ignoring the implications for high-speed broadband of 100 mbps and above.**

By focusing on the number of telephone voice subscribers impacted by the petition,<sup>2</sup> US Telecom hopes to obfuscate the far greater number of broadband subscribers and potential future CLEC customers that approval would affect.<sup>3</sup> In fact, every consumer who wishes to subscribe to the symmetrical gigabit services and higher that a nearby CLEC is seeking to deploy could lose out if US Telecom's petition is granted.

As Petitioner must know, CLECs depend on their copper wire shared access agreements, known as UNEs, to gain sufficient revenue to fund FTTH deployment while selling related DSL services. When the FCC in 2005 decided to not extend UNEs to fiber deployments, it forced CLECs to adopt a type of copper start – fiber finish – process.<sup>4</sup> For more than a decade since, CLECs have charted their own path, deploying FTTH whenever possible to outperform the ILEC and local cable company on price, bandwidth, and capacity while eventually ending their dependency on UNEs over time.

US Telecom misreads the reduction in UNEs over time as a sign of their lack of importance to the competitive landscape. In reality the reduction in UNEs demonstrates their success as launch pads for competitive stimulus. No ISP business with a serious eye to the 21<sup>st</sup> century of communications would realistically plan on a copper network (or a coaxial network for that matter), with all of its limitations and expenses, as a means to deploy high-speed networks. Rather, every ISP with a goal of deploying networks designed for the future is building FTTH. The *barrier* for these ISPs to pursue FTTH has little to do with reliance on UNEs, as the agreements are essential for CLECs to gain a foothold in a targeted market for FTTH deployment. Rather the high sunk costs involved in building the infrastructure and related civil works costs are the main challenges to any ISP that pursues FTTH.<sup>5</sup>

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<sup>1</sup> 47 U.S.C. 160(b);

<sup>2</sup> US TELECOM, PETITION FOR FORBEARANCE OF US TELECOM – THE BROADBAND ASSOCIATION (2018) [hereinafter *US Telecom petition*].

<sup>3</sup> US Telecom's economic study refers to the benefits in broadband deployment as only possible by granting the forbearance petition yet only analyzes the impact on voice telephony under the current rules without acknowledging that UNEs promote broadband including high-speed broadband.

<sup>4</sup> Michael Hiltzik, *Sonic is a Small ISP that Competes Brilliantly with the Big Guys – So They're Trying to Throttle Its Business*, LA TIMES, Jul. 5, 2018, available at <http://www.latimes.com/business/hiltzik/la-fi-hiltzik-sonic-isp-20180706-story.html>.

<sup>5</sup> EUROPEAN COMMISSION, *Analysys Mason: Support for the Preparation of an Impact Assessment to Accompany an EU Initiative on Reducing the Costs of High-Speed Broadband Infrastructure Deployment* at 36,

Thus, standing alone, the number of wireline voice subscribers says nothing about the state of broadband internet access in America today—or tomorrow. Advances in the plain old telephone system are not critical for 21<sup>st</sup> century broadband deployment, but access to that system is essential as a means to allow competitive entry. All that the *US Telecom petition* would do is protect the profit margins of ILECs while harming their competitors who are pressuring them today to deploy faster networks.

**B. Competition Enabled by UNEs Promotes Consumer Benefits in Price and Fiber Deployment; Forbearance Would Have the Opposite Impact.**

**1. Major ISPs Are Failing to Deploy High-speed Networks.**

The *US Telecom petition*<sup>6</sup> seeks to undermine the last vestiges of competition they face from the CLEC industry at a time when the only other means of obtaining FTTH in the United States comes from its municipalities.<sup>7</sup> Despite predictions that the Restoring Internet Freedom Order would spur investment,<sup>8</sup> not to mention a massive reduction in their corporate taxes that has freed up additional billions in capital,<sup>9</sup> none of the major ISPs (including the members of US Telecom) have committed to deploying nationwide FTTH.

The FCC's data has shown that ILECs are limiting their investments to upgrade the middle tier of broadband services of 25 mbps,<sup>10</sup> which in time will quickly become outdated as global Internet services match international markets that are more competitive, more affordable, and at substantially higher speeds than the U.S. market.<sup>11</sup> Access to gigabit and faster networks that are robust and scalable with future advances in technology is dependent on aggressive deployment of FTTH.

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<http://ec.europa.eu/digital-agenda/en/news/support-preparation-impact-assessment-accompany-eu-initiative-reducing-costs-high-speed>; See also INTERNATIONAL TELECOMMUNICATION UNION, *Cost Analysis for Fiber to the Home*, <http://www.ictregulationtoolkit.org/en/toolkit/notes/PracticeNote/2974>.

<sup>6</sup> *US Telecom petition*, *supra* note 2.

<sup>7</sup> INSTITUTE FOR LOCAL SELF-RELIANCE, *Community Network Map*, available at <https://muninetworks.org/communitymap> [hereinafter *Community Network Map*].

<sup>8</sup> See *Restoring Internet Freedom Order*, WC Docket No. 17-108, Declaratory Ruling, Report and Order, and Order, at 52.

<sup>9</sup> Tax Cuts and Jobs Act of 2017, Pub. L. No. 115-97, 131 Stat. 2054; See also Ryan Knutson & Austen Hufford, *Verizon to Pay Down Debt, Given Employees Stock Awards with Tax Windfall*, WALL ST. J., Jan. 23, 2018, available at <https://www.wsj.com/articles/verizon-dials-up-wireless-revenue-growth-1516714601> (reporting an extra \$ 4 billion of cash on hand for Verizon); See also Reuters & Fortune Editors, *AT&T Is the Latest Company to Report a Tax Reform Windfall*, FORTUNE, Feb. 1, 2018, available at <http://fortune.com/2018/02/01/att-earnings-tax-reform> (reporting an extra \$3 billion of cash on hand from Congress cutting corporate taxes).

<sup>10</sup> FEDERAL COMMUNICATIONS COMMISSION, *Internet Access Services Report 2016-2018* (the last three Internet Access Service Reports indicated real growth in middle tier broadband services of 25 mbps where more Americans now have two choices for access as a result of network upgrades from the last few years).

<sup>11</sup> EUROPEAN COMMISSION, *Digital Single Market: Study on Broadband Coverage in Europe 2017*, available at <https://ec.europa.eu/digital-single-market/en/news/study-broadband-coverage-europe-2017>.

This deployment failure is already having a profound impact on consumers, particularly those in rural America. FCC's recent findings reveal the poor quality and coverage of rural internet access. According to the 2016 Broadband Progress Report:

- 10 percent of all Americans (34 million people) lack access to 25 Mbps/3 Mbps service.
- 39 percent of rural Americans (23 million people) lack access to 25 Mbps/3 Mbps.
  - 20 percent lack access even to service at 4 Mbps/1 Mbps.<sup>12</sup>

The report also showed that the access gap is not a result of different behaviors with respect to adoption. To the contrary, it shows that Americans living in rural and urban areas adopt broadband at similar rates for 25 Mbps/3 Mbps service if and when available.<sup>13</sup>

But broadband access is not a luxury, and is becoming increasingly necessary for those hoping to compete in the global economy.<sup>14</sup> Nonetheless, according to the Pew Research Center, 25% of Americans still have no broadband Internet access at home at all.<sup>15</sup> That includes 5 million households with young children.

The digital divide in telecommunications connectivity further aggravates inequities in access to education. As the FCC is aware, approximately 41 percent of schools, which teach 47 percent of the nation's students, are failing to meet the Commission's short-term goal of internet access at rates of 100 Mbps per 1,000 students/staff.<sup>16</sup> Students without high-speed internet access are at a disadvantage when it comes to completing routine homework assignments when compared to students with access. Moreover, students who must read and write school papers are least able to substitute for less-capable alternatives to wireline broadband, such as wireless mobile telephony. Low-income students may not be able to reap the benefits of cutting-edge innovations until those innovations have become ubiquitous enough to bring product prices within a resource-constrained family's means.

## 2. CLECS are filling the gap.

By helping CLECs to survive and thrive, UNEs help address this digital divide.

Thanks to the current enforcement regime, many localities have successfully built, improved, and maintained advanced telecommunications networks in areas where market forces by themselves would not attract or sustain them. For example, one small service provider, Axiom, has built more than 100 broadband access points over 2,500 square miles of rural Maine,

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<sup>12</sup> FEDERAL COMMUNICATIONS COMMISSION, *2016 Broadband Progress Report*, available at <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2016-broadband-progress-report> [hereinafter *Broadband Progress Report*].

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

<sup>14</sup> Testimony of Mr. Jonathan Spalter, President and CEO, USTelecom, available at <https://docs.house.gov/meetings/IF/IF16/20180130/106810/HHRG-115-IF16-Wstate-SpalterJ-20180130-U5003.pdf>.

<sup>15</sup> Testimony of Elin Swanson Katz, Connecticut Consumer Counsel (citing Pew Research Center, Internet/Broadband Fact Sheet, January 12, 2017; Pew Research Center, "The numbers behind the broadband homework gap," April 20, 2015; Pew Research Center, "Digital divide persists even as lower-income Americans make gains in tech adoption,"); See also *Broadband Progress Report*, *supra*, note 11.

<sup>16</sup> See *Broadband Progress Report*, *supra* note 11.

providing consumers with high-speed access over networks that deploy fiber in combination with other types of network infrastructure and other network providers.

Axiom has stepped up and deployed fiber to local communities that major incumbents ignored. When the island community of Chebeague, Maine approached GWI, Time Warner, and Verizon about building a faster alternative to dial-up internet access, nothing happened. But when local residents, working together, found private and institutional investors, they were able to leverage that investment into the beginning of a high-speed local network because they were able to lease telephone lines from the local provider to transmit communications from the fiber network the locality had invested in to people all over the world, regardless of whether those people were connected via copper wires or fiber optic cables.

We see similar success in urban markets. In 1999 the city of Brentwood adopted a building code conduit requirement for all new development. The code requires developers to build a 4 inch conduit pipe and then deed it back to the city. The policy goal at the time was to lay infrastructure with the hope of franchising a second cable television provider. However, no new cable company arrived and the city owned nearly 120 to 150 miles of unused conduit reaching 8,000 homes and all commercial sectors built since 1999. By chance, the CLEC Sonic.net discovered that the city retained a vast network of conduit suitable for fiber optic broadband and contacted the city in April 2013.

In response to the proposal by Sonic.net, the city issued a Request for Expression of Interest (RFEI) highlighting the available conduit to the companies Astound, AT&T, Comcast, Google, Level 3, Lit San Leandro, XO Communications, and Sonic.net. The *only* respondent to the RFEI was Sonic.net. During negotiations both the city and Sonic.net agreed to a number of mutually beneficial provisions that focused on easing deployment of the network and providing public services. Such benefits included a rock bottom rate of \$40 a month for symmetrical gigabit services to residents and upgrades to the education and public sector infrastructure of the city with fiber optics.

These advancements came about thanks to the existence and continued viability of CLECs. Studies show that markets that are not dependent on the local cable company as their monopoly choice for high-speed Internet have superior prices for service.<sup>17</sup> For example, a CLEC FTTH deployment here in California is available at \$40 a month for gigabit services.<sup>18</sup> In no market, as far as EFF has been able to find, is a local cable monopoly offering broadband at such speeds and price.

A core question raised by this forbearance petition is its effect on the public's access to the networks that make high-speed broadband internet access possible. That effect is likely to be disastrous.

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<sup>17</sup> Ashlee Kieler, *Cable Providers Hiking Cost of Broadband In Face of Cord-Cutting*, CONSUMERIST, Oct. 19, 2017, available at <https://www.consumerreports.org/consumerist/cable-providers-hiking-cost-of-broadband-in-face-of-cord-cutting>.

<sup>18</sup> Jeff Baumgartner, *Sonic.net Preps \$40 1 Gig/Voice Bundle*, MULTICHANNEL NEWS, May 19, 2014, available at <https://www.multichannel.com/news/sonicnet-preps-40-1-gigvoice-bundle-374643>.

#### **IV. Congress wrote the 1996 Telecommunications Act with the express goal of injecting competition and that work remains incomplete.**

The Telecom Act's central purpose was to promote competition, and Congress saw the local exchange provisions as a core part of this purpose.

The bill that eventually became the Telecom Act was initially the "Antitrust Reform Act of 1992," and from the beginning aimed at ensuring competition in telecommunications markets. It set the stage for the Bell operating companies to enter those markets with strong competitive protections that would prevent them from abusing the local exchange bottleneck to compete unfairly.

The House Judiciary Committee explained that "the Bell companies at this time control the lifeline to the customers of every competitor in the telecommunications market: the local telephone exchange bottleneck.<sup>19</sup> This bottleneck gave the Bells the "inherent ability" and "a natural incentive" to block competition.<sup>20</sup> Congress expected that promoting competition in this market would "produce substantial public interest benefits, including the provision of innovative services, improved service quality, and lower prices."<sup>21</sup>

Both Congress and the courts were dissatisfied with an FCC that failed to address this clear and present danger to competition in a critical telecom market. When the FCC based its decisions on unsupported and implausible assumptions, it was found to have violated the APA and it inspired Congress to act specifically for the purpose of protecting competition from being choked off at the local exchange bottleneck.<sup>22</sup> Congress explained that it expected the FCC to use its future discretion to promote competition.<sup>23</sup>

Congress understood that anticompetitive behavior was an obvious consequence of holding a monopoly on an essential element of telecommunications, and documented numerous abuses from the preceding four years, explaining that the Bells "utilized their control of the local exchange monopoly to impede competition in a number of areas, including: (i) voice storage and retrieval; (ii) directory publishing; (iii) cellular telephone services; (iv) equipment sales; (v) equipment servicing; (vi) international services; and (vii) equipment procurement."<sup>24</sup> They also "overcharged for phone services and improperly allocated costs (such as lobbying fees) to the ratemaking base borne by utility customers," resulting in over \$20 billion in costs from "anticompetitive violations."<sup>25</sup> Congress noted that this obscene amount would likely be much higher if the Bells had not been excluded from the markets "most susceptible to abuse."<sup>26</sup>

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<sup>19</sup> H.R. REP. 102-850, 13

<sup>20</sup> *Id.*

<sup>21</sup> H.R. REP. 103-560.

<sup>22</sup> H.R. REP. 102-850, 51

<sup>23</sup> H.R. REP. 103-560 ("The Committee expects the Commission will use this discretion to promote the overall purposes of this legislation, to ensure a seamless and open nationwide telecommunications network and to promote competition as a means of constraining costs.").

<sup>24</sup> H.R. REP. 102-850, 52-53.

<sup>25</sup> *Id.*

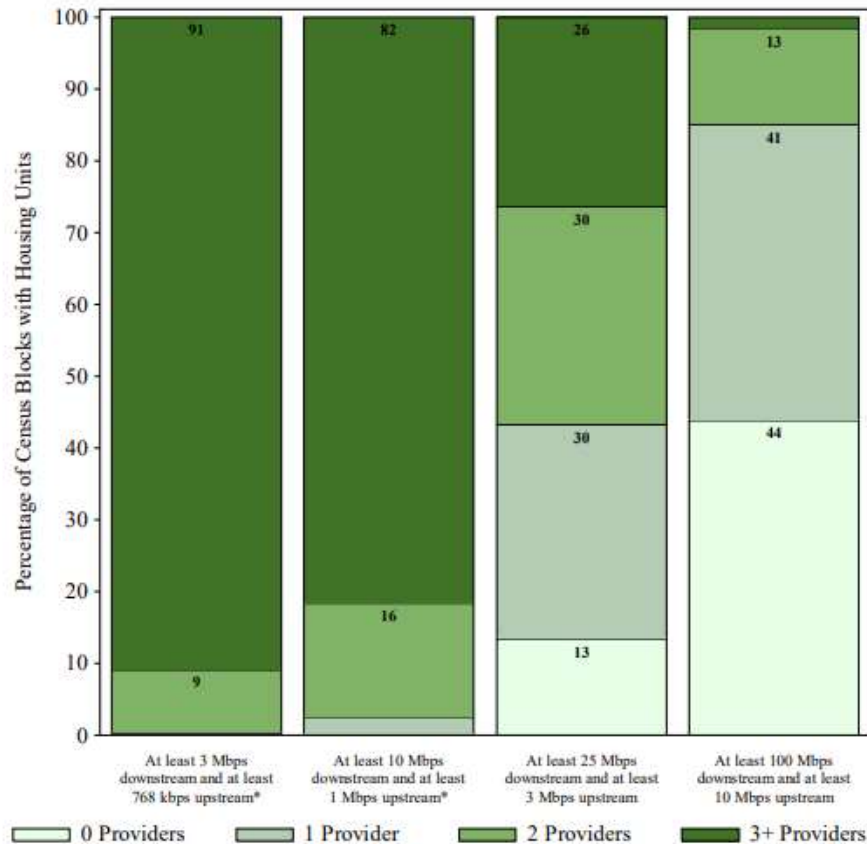
<sup>26</sup> H.R. REP. 102-850, 52-53.

Congress, then, drafted legislation specifically “to accomplish the goal of promoting competition by cable companies and other providers to incumbent local exchange carriers.”<sup>27</sup> Because “there is no economic reason for a local exchange carrier to permit a competitor to use its equipment at reasonable prices,” and “without such access, competition may never develop[,] [t]herefore, interconnection and access arrangements must be mandated for all competing local exchange carriers on an unbundled basis.”<sup>28</sup>

**V. The FCC’s own data when compared to international markets demonstrates that the United States is losing the race to deploy gigabit networks.**

- A. FCC data shows a Staggering 85 percent of Americans have either no choice or one choice for broadband services that exceed 100 Mbps.

**Figure 4**  
**Percentages of Developed Census Blocks in which Providers Reported the Deployment of Residential Fixed Broadband as of December 31, 2016**



<sup>27</sup> H.R. REP. 103-560.

<sup>28</sup> H.R. REP. 103-560.



In a vast majority of markets that contain high-speed broadband options consumers only have their cable company as an available choice for speeds in excess of 100 mbps. In barely 10 percent of the US market do consumers have access to a fiber to the home competitor delivering comparable or better speeds, which means the combination of Verizon FIOS, Google Fiber, CLECs, and publicly owned fiber networks<sup>29</sup> serve as additional choices for very few Americans. As noted later, two of these sources of FTTH competition have discontinued deployment, leaving the bulk of the competitive landscape in high-speed broadband dependent on CLECs and cities.

This is the reality that US Telecom cannot escape and why the FCC must reject the petition for forbearance. They have offered no clear vision or commitments to upgrade their own networks to FTTH yet assert that by cutting off their competitors by ending their '96 Act obligations the landscape would suddenly improve. In no international market has that scenario been proven true. In fact, the opposite has shown progress where aggressive competition policies and even outright structural separation models are demonstrating success in reaching universal access goals while still retaining competitive choice.<sup>30</sup>

As CLECs continue to gain market share by deploying FTTH, they remain the main private market driving force to make incumbents follow suit or risk losing customers. The fact that they appear to be the only private market actors actively trying to connect Americans to an infrastructure that is already proven to be capable of reaching 10 gigabit speeds and likely well beyond makes retaining provisions that support competitive entry by CLECs essential to advancing American broadband.

B. The United States lags behind other countries in FTTH in both rural and urban markets

The fact that so few market forces are bearing on incumbents to force them to deploy FTTH should be cause of great alarm to the FCC. The response should not be to undermine the most active part of the private industry deploying FTTH, but rather it should be to reject the petition and aggressively inquiry as to the barriers that prevent the expansion of CLECs into more markets. The FCC's most recent decision to streamline pole attachments under its "one touch make ready Order"<sup>31</sup> is only a first step in boosting fiber.

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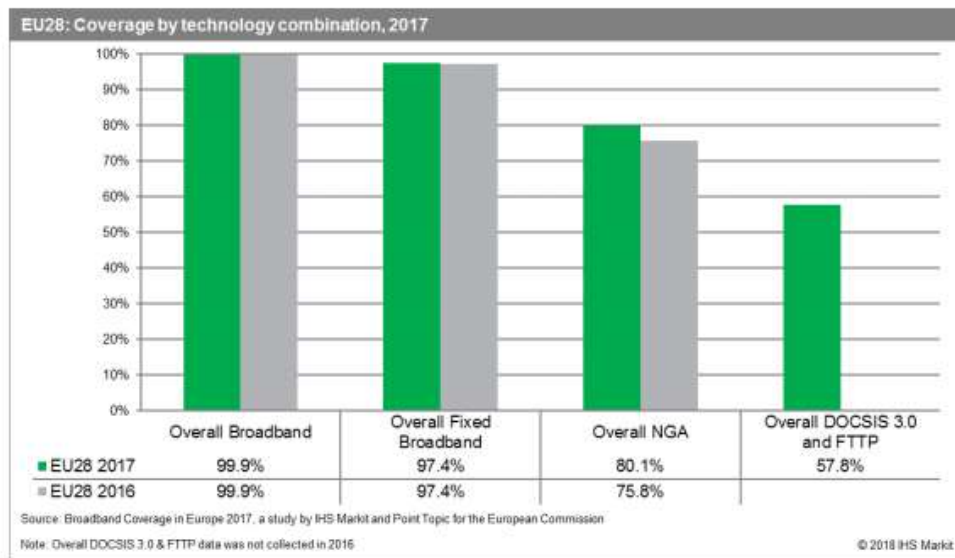
<sup>29</sup> See *Community Network Map*, *supra* note 7.

<sup>30</sup> Ilsa Godlovitch & Tseveen Gantumur, *The Role of Wholesale Only Models in Future Networks and Applications*, WIK-CONSULT, Mar. 23, 2018, available at [https://www.stokab.se/Documents/Nyheter%20bilagor/The%20role%20of%20wholesale%20only\\_WIK.pdf](https://www.stokab.se/Documents/Nyheter%20bilagor/The%20role%20of%20wholesale%20only_WIK.pdf) [hereinafter *Wholesale Only Model Study*] (recent developments in the international markets have shown the ability of wholesale fiber networks that do not sell retail broadband service are able to overcome infrastructure cost barriers that plague retail broadband providers. It is possible that access to longer term loans more attuned to high sunk costs are better suited to handle connecting residents and businesses to a fiber network).

<sup>31</sup> Sean Kinney, *FCC Adopts 'One-Touch, Make-Ready' to Hasten Broadband Deployments*, RCR WIRELESS NEWS, Aug. 6, 2018, available at <https://www.rcrwireless.com/20180806/policy/fcc-one-touch-make-ready-tag17> (The FCC should be commended for tackling one of the most stubborn barriers to broadband deployment by streamlining access to critical infrastructure. But more barriers exist in the broadband market that stifle CLECs and other broadband providers from gaining stronger footholds in incumbents' markets.).

Petitioners themselves essentially assert that CLECs usage of UNEs only impact them in a limited number of markets.<sup>32</sup> Couple that with the withdrawal of Verizon’s intent to continue to deploy FIOS<sup>33</sup> eight years ago (with the limited exception of Boston, Massachusetts<sup>34</sup>) and Google’s two year old announcement to discontinue expanding Google Fiber,<sup>35</sup> no large national corporation in the US market has an established plan to wire every American home and business in their territory directly with fiber optics in the same way CLECs do today.

Comparing the U.S. market to the international markets reveals the extent the last mile is starved of a high-speed connection, particularly when taking into account FTTH builds that can scale even further without new network infrastructure investments. Online services and applications will become more dependent on high-speed connections that Americans will soon be unable to utilize. Being unable to make use of the latest advancements in Internet technologies means an impending national crisis in economic prosperity lies over the horizon. Reliance on a local cable monopoly for rapidly increasing capacity needs places a real danger to American innovation.



Today, approximately 57.8 percent of Europeans have access to DOCSIS 3.0 and FTTP (the EU term that is equivalent to FTTH) with FTTP reaching 26.8 percent of EU homes and DOCSIS 3.0 reaching 44.7 percent of homes. The aggregate number demonstrates how the American market is behind our European counterparts even when not every EU nation is on track to meet their metrics of universal coverage of 30 Mbps and 50 percent coverage of 100 Mbps and above

<sup>32</sup> See *US Telecom Petition*, supra note 2 at 15.

<sup>33</sup> Roger Cheng, *Verizon to End Rollout of FiOS*, WALL ST. J., Mar. 30, 2010, available at <https://www.wsj.com/articles/SB10001424052702303410404575151773432729614>.

<sup>34</sup> Jon Brodtkin, *Verizon FiOS Expands Again, But Verizon’s Future is Still Wireless*, ARSTECHNICA, Dec. 7, 2016, available at <https://arstechnica.com/information-technology/2016/12/verizon-fios-hits-boston-in-first-new-fiber-deployment-in-years>.

<sup>35</sup> Brian Fung, *Why Google Fiber Stopped Its Plans to Expand to More Cities*, WASH. POST, Oct. 26, 2016, available at <https://www.sacbee.com/news/nation-world/national/article110655177.html>.

by 2020.<sup>36</sup> By comparison, FCC data indicates the U.S. market falls short of universal access to middle tier speeds of 25 mbps (87 percent coverage with 13 percent of Americans having no options) and woefully behind at the high-speed market (13 percent of Americans having more than a monopoly choice with 41 percent having at least a monopoly, the remaining with no choice).<sup>37</sup>

Worst yet, when we explore individual member states of the EU, we find that the aggregate number masks extraordinary advancements across the Pacific that show how far behind American deployment truly is today. For example, FTTP in Portugal, Latvia, Lithuania, and Spain exceed 70 percent coverage. Spain in particular has enjoyed an extraordinary rise in FTTH coverage with a growth of 8.6 percent for 2017<sup>38</sup> as a result of a commercial co-investment and network sharing agreements.<sup>39</sup>

In fact, every EU member except for Ireland, Germany, the United Kingdom, Belgium, and Greece are ahead of the United States in FTTH deployment and even among those lagging nations an active rethinking or new implementation of telecom policy is occurring to address their lagging performance. For example, Ireland's fiber growth has exploded at a meteoric 419.6% increase from 2016-2017 as a result of wholesale only initiatives.<sup>40</sup> The United Kingdom is currently undergoing structural separation remedies of British Telecom to address their current lack of fiber deployment.<sup>41</sup>

Ahead of even the best performing EU nations though continues to be South Korea with near universal deployment of fiber connections to the home.<sup>42</sup> Such connectivity was on display during the 2018 Winter Olympics when a year in advance their ISPs launched a plan to deploy the first 5G networks.<sup>43</sup> Such networks are reliant on fiber and were showcased during the

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<sup>36</sup> EUROPEAN COURT OF AUDITORS, *Broadband in the EU Member States: Despite Progress, not All the Europe 2020 Targets Will be Met*, available at

[https://www.eca.europa.eu/Lists/ECADocuments/SR18\\_12/SR\\_BROADBAND\\_EN.pdf](https://www.eca.europa.eu/Lists/ECADocuments/SR18_12/SR_BROADBAND_EN.pdf).

<sup>37</sup> FEDERAL COMMUNICATIONS COMMISSION, Internet Access Services Report (released 2/18).

<sup>38</sup> EUROPEAN COMMISSION, *Broadband Coverage in Europe 2017*, available at <https://ec.europa.eu/digital-single-market/en/news/study-broadband-coverage-europe-2017>.

<sup>39</sup> Enrique Medina, *Why Spain is a Case Study for Super-Fast Broadband*, TELEFONICA, Nov. 20, 2017, available at <https://www.telefonica.com/en/web/public-policy/blog/article/-/blogs/why-spain-is-a-case-study-for-super-fast-broadband>.

<sup>40</sup> ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *Penetration and Data Usage (Growth of fibre subscriptions Dec. 2017)*, available at <http://www.oecd.org/sti/broadband/1.11-FibreGrowth-2017-12.xls>; See also *Wholesale Only Model Study supra* note 29.

<sup>41</sup> Ilsa Godlovitch, Bernd Sorries, & Tseven Gantumur, *A Tale of Five Cities: The Implications of Broadband Business Models on Choice, Price and Quality*, WIK-CONSULT, Jun. 2, 2017, available at <https://www.stokab.se/Documents/Nyheter%20bilagor/A%20tale%20of%20five%20cities.pdf>

<sup>42</sup> Krista Tysco, *A Mid-Year Roundup of the 2017 Global FTTH Broadband Market*, PPC BROADBAND, PPC BLOG, Aug. 3, 2017, available at <http://www.ppc-online.com/blog/a-mid-year-roundup-of-the-2017-global-ftth-broadband-market> (most noteworthy in this analysis is the role smaller ISPs play in deploying FTTH where nearly 50 percent of the growth in fiber is attributable to CLECs and local government).

<sup>43</sup> Erwan Lucas, *In South Korea, the Race is on for Olympics 5G Next Year*, PHYS.ORG, Feb. 28, 2017, available at <https://phys.org/news/2017-02-south-korea-olympics-5g-year.html>.

games. Near universal coverage by fiber also allowed Korea Telecom to deploy 3D virtual reality viewing of the games<sup>44</sup> and support self-driving mass transit.<sup>45</sup>

C. FTTH deployment is essential for ensuring that American broadband can scale with advances in computing technology and online services at reduced costs.

It is well known now that once fiber is laid it has the potential to upgrade at a very low cost and quickly with advances in processing technology. This is because the exceedingly high transmission potential of fiber optics to pass information requires only the equipment that transmits data to be switched out and no new civil works.<sup>46</sup> Historically the tearing up of the roads and other infrastructural challenges for deploying a network constituted close to 80 percent of the costs for an ISP.<sup>47</sup> Look no further than the most recent advances in time and wavelength division multiplexed passive optical network (TWDM-PON) technology<sup>48</sup> and the real world implications for an existing FTTH build in Chattanooga, TN, which is now the world's fastest retail broadband ISP.

At its launch, EPB Fiber Optics, a community broadband company run by the local government, was the first ISP in the country to offer symmetrical gigabit service followed by Google Fiber.<sup>49</sup> In 2015, companies such as Alcatel Lucent were able to add capacity to currently existing fiber optic lines by essentially increasing the number of transmissions that could pass through a fiber strand several times over previously existing fiber optic network technology.

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<sup>44</sup> Cho Mu-Hyun, *KT to Provide 360 Degree VR for 2018 Winter Games*, ZDNET, Feb. 15, 2016, available at <https://www.zdnet.com/article/kt-to-provide-360-degree-vr-for-2018-winter-games/>

<sup>45</sup> Diamond Leung, *2018 PyeongChang Olympics Has 5G-Enabled VR, Live Holograms, Self-Driving Buses, Drones*, SPORTTECHIE, Mar. 28, 2017, available at <https://www.sporttechie.com/2018-pyeongchang-olympics-has-5g-enabled-vr-live-holograms-self-driving-buses-drones>.

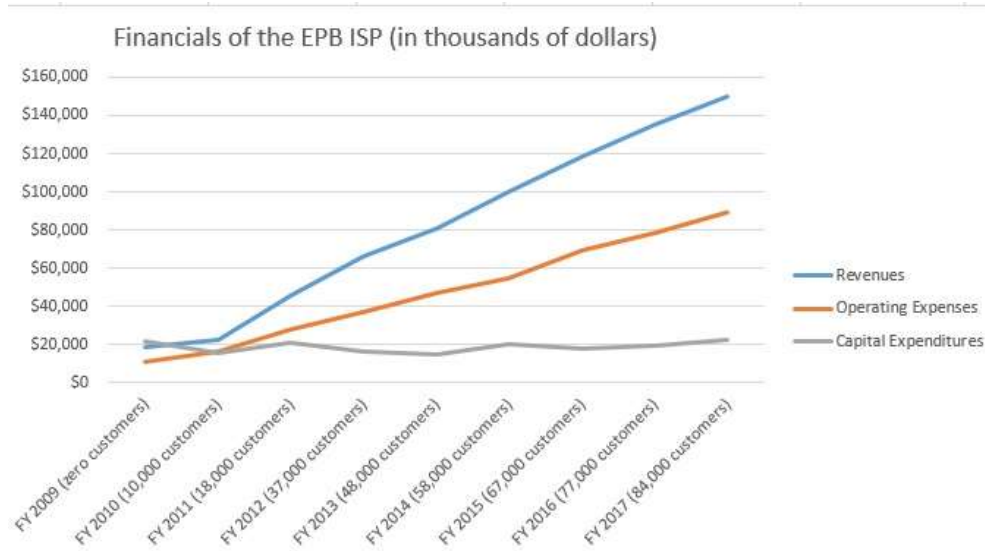
<sup>46</sup> "Frequently Asked Questions on Fiber Reliability," Corning, April 2016, <https://www.corning.com/media/worldwide/coc/documents/Fiber/RC-%20White%20Papers/WP5082%203-31-2016.pdf>.

<sup>47</sup> EUROPEAN COMMISSION, *Analysys Mason: Support for the Preparation of an Impact Assessment to Accompany an EU Initiative on Reducing the Costs of High-Speed Broadband Infrastructure Deployment* at 36, <http://ec.europa.eu/digital-agenda/en/news/support-preparation-impact-assessment-accompany-eu-initiative-reducing-costs-high-speed>; See also INTERNATIONAL TELECOMMUNICATION UNION, *Cost Analysis for Fiber to the Home*, <http://www.ictregulationtoolkit.org/en/toolkit/notes/PracticeNote/2974>.

<sup>48</sup> Ron Heron, *TWDM-PON: Taking Fiber to New Wavelengths*, NOKIA, Apr. 1, 2014, available at [http://origin-prod-blog.nokia.com/en\\_int/twdm-pon-taking-fiber-new-wavelengths](http://origin-prod-blog.nokia.com/en_int/twdm-pon-taking-fiber-new-wavelengths).

<sup>49</sup> Christopher Mitchell, *Broadband at the Speed of Light: How Three Communities Build Next-Generation Networks* at 37 (Apr. 2012), Institute for Local Self-Reliance, available at <http://www.ilsr.org/broadband-speed-light>

When EPB decided to switch out its electronics in 2015 to upgrade from a gigabit network to a 10 gigabit network<sup>50</sup>, the costs to the ISP were so miniscule they are virtually invisible in their financial reports' capital expenditures.



Source: EPB Financial reports from 2009 to 2017<sup>51</sup>

This same low cost high return bandwidth upgrade is available to other currently existing FTTH deployments ensuring that even older fiber optic builds can leap frog from 100 mbps to 1 gigabit and beyond without incurring any additional construction costs. However, currently amongst the providers Americans have access to at 100 mbps and above, an overwhelming number of them come from cable companies that have not deployed FTTH in the same way their CLECs or local government competitors.

Downstream Speed	
Technology	At least 100 Mbps
aDSL	6
sDSL	*
Other Wireline <sup>1</sup>	156
Cable Modem	21,864
FTTP	2,486
Satellite	*
Fixed Wireless	29
<b>Total</b>	<b>24,541</b>

<sup>50</sup> Lightwave Staff, *EPB Brings 10-GBPS FTTH to Chattanooga*, LIGHTWAVE, available at <https://www.lightwaveonline.com/articles/2015/10/epb-brings-10-gbps-ftth-to-chattanooga.html>.

<sup>51</sup> ELECTRIC POWER BOARD, Leadership and Annual Reports, available at <https://epb.com/about-epb/leadership-annual-reports>.

## **VI. Promoting FTTH to all Americans advances a core mission of the agency and rejecting the US Telecom petition is necessary to achieve that goal.**

### **A. The FCC must not only reject the US Telecom petition, it should also issue a Notice of Inquiry into how best to promote fiber deployment.**

The ILECs have shown they will not bridge the digital divide by deploying brand new next generation technologies throughout America, particularly in rural territories that already lag behind on basic internet connectivity. Freeing them from access requirements will not promote investment in or the deployment of advanced network infrastructure in currently underserved and unserved areas. As US Telecom itself explained<sup>52</sup> to Congress, they do not intend to expand fiber to rural markets (and they are not even targeting densely urban markets), yet CLECs have begun incremental deployments after launching from their original UNE agreement.

The FCC should recognize the proposal for what it is: an effort by incumbents to freeze in stasis the middle tier broadband market of 25 mbps, which their DSL products can retain some market share while raising prices on their competitors and never deploying their own FTTH networks. Such an outcome will ensure the high-speed market remains overwhelmingly controlled by regional cable monopolies and that most Americans will only read about gigabit Internet speeds rather than experience it.

Rather than adopt this future where America no longer has a meaningful trajectory towards gigabit speeds and beyond, the FCC should reject the US Telecom petition and issue a Notice of Inquiry into the new competition policies that are taking root around the world as well as new business models that are reducing the cost of deployment. Dozens of countries are adopting a wide range of approaches and are racing towards a future where all of their citizens have access to competition at the high-speed market. Now is the time for a wide ranging review and rethinking of current US policies that impact deployment and competition with an explicit view towards expanding fiber to every home and business.

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<sup>52</sup> Testimony of Mr. Jonathan Spalter, President and CEO, USTelecom, <https://docs.house.gov/meetings/IF/IF16/20180130/106810/HHRG-115-IF16-Wstate-SpalterJ-20180130-U5003.pdf>.