



May 4, 2018

Via Electronic Filing (forbearance@fcc.gov)

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) to Accelerate Investment in Broadband and Next-Generation Networks

Dear Ms. Dortch:

On behalf of USTelecom – The Broadband Association (“USTelecom”), enclosed please find the Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) to Accelerate Investment in Broadband and Next-Generation Networks, which is being filed electronically today.

Please contact the undersigned with any questions.

Respectfully,

/s/

Jonathan Banks
Diane Griffin Holland

cc (by electronic mail):

Kris Monteith
Madeleine Findley
Daniel Kahn
Terri Natoli

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of

Petition of USTelecom for Forbearance Pursuant
to 47 U.S.C. § 160(c) to Accelerate Investment in
Broadband and Next-Generation Networks

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WC Docket No. _____

**PETITION FOR FORBEARANCE OF
USTELECOM – THE BROADBAND ASSOCIATION**

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SUMMARY

Twenty-two years ago, Congress adopted an expansive set of network-sharing obligations and other mandates intended to break open the marketplace for telecommunications offerings – in particular, the local telephone market. Congress’s requirements, and the Federal Communications Commission’s (“Commission”) implementing rules, took aim at the local carriers that had long provided service subject to state-enforced monopolies, known as “incumbent local exchange carriers” or “ILECs.” Congress and the Commission envisioned a future in which ILECs faced substantial competition from a host of facilities-based rivals. They recognized, moreover, that changing marketplace circumstances would necessitate a revised regulatory framework – when such competition ultimately arrived, the aggressive measures imposed in 1996 would be unnecessary and unduly burdensome to ILECs. In Section 10 of the Telecommunications Act of 1996, Congress provided a mechanism whereby the Commission is *required* to forbear from enforcing regulations that marketplace developments have rendered unnecessary or affirmatively harmful. In recent years, the Commission has taken bipartisan action to forbear from applying certain outdated regulations. The time has come to act again. Given the existence of multiple competitors using a wide array of technologies to supplant ILEC offerings, the Commission must forbear from Section 251(c)’s unbundling and resale mandates (and associated Section 251 and 252 obligations), Section 272(e)(1) and related obligations, and Section 271(c)(2)(B)(iii).

Since the adoption of these mandates, there has been a staggering decline in ILEC switched access voice subscriptions, from 186 million in 2000 to a projected 35 million this year. In residential markets, only 11 percent of U.S. households are projected to have an ILEC switched voice line by the end of this year. Indeed, 60 percent of Americans will have abandoned wireline voice service entirely in favor of wireless alternatives. Of the remaining 40 percent, a majority will obtain service from a non-ILEC – often a cable company or other provider of voice over Internet protocol (“VoIP”).

There is also intense competition in the business data services marketplace. That domain is quickly shifting toward packet-based offerings – over which ILECs have *never* enjoyed any inherent advantages – and the Commission emphasized that even the TDM transport and channel termination service markets also are broadly competitive. As of 2013 (some five years ago now), competitive providers had deployed transport networks in the census blocks housing about 99 percent of business establishments, and the vast majority of locations exhibiting demand were within several hundred feet of competitive fiber. In residential and business markets alike, competition is overwhelmingly facilities-based. There are fewer than half as many unbundled network element (“UNE”) loops in use today as in 2005, even as the number of non-ILEC connections has grown rapidly. The Commission’s data show that, at year-end 2016, non-ILECs used UNE loops to provision less than four percent of end-user switched access and VoIP lines, and mandatory resale accounted for three percent.

It is time for the Commission to forbear from enforcing these ILEC-specific requirements. A regime that imposes special burdens on providers that hold a small and shrinking share of the market distorts competition, harms consumers, and simply makes no sense.

Section 10's forbearance criteria are easily met with regard to Section 251(c)'s unbundling and resale provisions and associated obligations. Because of robust intermodal competition, the marketplace is irrevocably open to competition, such that these obligations are no longer necessary to ensure that rates and practices are just, reasonable, and nondiscriminatory, or to protect consumers. Moreover, forbearance furthers the public interest by encouraging facilities-based competition, reducing compliance costs, and freeing capital for use in deploying broadband networks and advanced services to consumers. As the appended economic analysis demonstrates, forbearance would also produce extensive economic benefits: It would save consumers over \$1 billion, and perhaps up to \$5.9 billion, in reduced prices over the next decade. It would increase capital investment by up to \$1.8 billion, directly creating between 2,200 and 3,200 new jobs per year and exercising spillover effects that create between 4,400 and 6,400 additional jobs per year. Overall, forbearance would increase the nation's Gross Domestic Product by between \$359 million and \$542 million per year over the next ten years.

Section 10's criteria are also met with regard to Section 272(e)(1), which governs Regional Bell Operating Companies' ("RBOCs") relationships with their affiliates, and related obligations, such as those stemming from Section 64.1903 of the Commission's rules. These provisions, based on outdated determinations that RBOCs and ILECs possess market power, are no longer relevant in today's highly competitive marketplace, and thus are not needed to ensure just, reasonable, and nondiscriminatory charges and practices, or to protect consumers. Likewise, forbearance is in the public interest because it will eliminate regulatory disparities that no longer serve any relevant purpose.

Finally, Section 10's criteria are met with regard to Section 271(c)(2)(B)(iii), which requires RBOCs to provide nondiscriminatory access to poles, ducts, conduits, and rights-of-way in accordance with Section 224. This provision is duplicative of the requirements for nondiscriminatory access in Section 224, and thus is not necessary to ensure that rates and terms are just, reasonable, and nondiscriminatory, or to protect consumers. The fact that ILEC ownership of poles has been declining sharply further undercuts the rationale for subjecting RBOCs to duplicative regulation in this area. Forbearance is in the public interest because the continued presence of overlapping requirements drains valuable compliance time and resources from the budgets of RBOCs (and RBOCs alone). Forbearance would eliminate these burdens and costs and establish symmetrical regulation.

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**PETITION FOR FORBEARANCE OF
USTELECOM – THE BROADBAND ASSOCIATION**

INTRODUCTION

Pursuant to Section 10 of the Communications Act of 1934 (“the Act”) and Sections 1.53 and 1.54 of the Commission’s rules,¹ USTelecom – The Broadband Association (“USTelecom”) petitions the Commission for nationwide forbearance from outmoded regulatory mandates that distort competition and investment decisions. This is the third USTelecom forbearance petition filed in a quest to better tailor a 1996-era regulatory scheme to the realities of today’s consumers and markets, and, to USTelecom’s knowledge, no party has filed a single complaint with the Commission suggesting that these efforts to modernize the regulatory framework have led to any consumer or marketplace harm. In response to the two prior USTelecom petitions to forbear from 1996-era regulations, the Commission eliminated dozens of outdated regulations and helped level the regulatory playing field as the marketplace became more and more competitive. This Petition, which asks the Commission to forbear from unbundling requirements and related provisions that are not necessary to protect consumers or competition, represents the next logical

¹ 47 U.S.C. § 160 (“Section 10”); 47 C.F.R. §§ 1.53, 1.54.

step in the process begun by the Commission to “start to grant” ILECs relief from outdated mandates.²

The mandates at issue here – principally involving access to old copper network facilities and protections related to an extinct “long-distance voice market” – are not necessary to protect competition or consumers. In fact, forbearance will have a positive impact on consumers and the economy as a whole.

This Petition asks the Commission to forbear from applying the following obligations:³

- ILEC-specific unbundling and resale mandates in Section 251(c)(3) and (4) and associated Section 251 and 252 obligations;
- Section 272(e)(1)’s RBOC-specific time interval requirements for nondiscriminatory treatment of affiliates and non-affiliates regarding requests for service, and the long-distance separate affiliate requirement for independent ILECs set out in Section 64.1903 of the Commission’s rules; and
- Section 271(c)(2)(B)(iii)’s RBOC-specific competitive checklist item regarding access to poles, ducts, conduit, and rights-of-way.

² *Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) from Enforcement of Obsolete ILEC Legacy Regulations That Inhibit Deployment of Next-Generation Networks*, Memorandum Opinion and Order, 31 FCC Rcd 6157, 6242 (2015) (“2015 USTelecom Forbearance Order”) (Statement of Commissioner Pai) (noting that the Commission’s order was the beginning of a process).

³ Pursuant to Section 1.54 of the Commission’s rules, 47 C.F.R. § 1.54, the specific requirements from which USTelecom seeks forbearance, as well as a list of pending proceedings in which USTelecom has taken a position regarding relief that is identical to, or comparable to, the relief sought in this Petition, are set forth in Appendix A. Relief is sought for all RBOCs or all ILECs, depending on the class to which the specific obligation at issue applies. Grants of forbearance relief to broad classes of carriers are expressly contemplated by Section 10 and are consistent with Commission precedent. *See* 47 U.S.C. § 160(a) (providing for forbearance from “applying any regulation or any provision of the Act to a ... class of telecommunications carriers or telecommunications services”); *United States Telecom Ass’n Petition for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain Legacy Telecommunications Regulations*, Order, 28 FCC Rcd 2605, 2608 ¶ 7 (2013) (“2013 USTelecom Forbearance Short Order”) (“Where the section 10 forbearance criteria are met based on factors common to an entire class, it would be less consistent with the goal of establishing a ‘a pro-competitive, deregulatory national policy framework’ and would place a greater burden on both the industry and on agency resources to ... require individual carriers within a class ... to ... file their own petitions seeking identical relief for identical reasons.”).

As detailed below, the Section 10 forbearance criteria are met with respect to each of these obligations.⁴ This grant of relief will ultimately reduce pricing for customers and improve the quality and performance of their services. It will also support growth and create jobs as more providers increase investment in their own networks to offer modern next-generation services.⁵

BACKGROUND

The Commission has long recognized the need to eliminate regulations that impose burdens without concomitant benefits, as well as the need to modernize its regulations to “encourage carriers to invest in and deploy even more advanced technologies as they evolve.”⁶

⁴ Specifically, (1) enforcement of the mandates at issue is not necessary to ensure that charges and practices are just and reasonable and not unjustly or unreasonably discriminatory; (2) enforcement of the mandates at issue is not necessary to protect consumers; and (3) forbearance is consistent with the public interest. 47 U.S.C. § 160(a).

⁵ See generally Hal Singer & Kevin Caves, Economists Incorporated, and Ed Naef & Micah Sachs, CMA Strategy Consulting, *Assessing the Impact of Forbearance from 251(c)(3) on Consumers, Capital Investment, and Jobs* (May 2018), attached hereto as Appendix B.

⁶ *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, Report and Order, Declaratory Ruling, and Further Notice of Proposed Rulemaking, 32 FCC Rcd 11128, 11235, App. E. ¶ 29 (2017) (“*Wireline Broadband Deployment Order*”); see also, e.g., *Commission Launches Modernization of Media Regulation Initiative*, Public Notice, 32 FCC Rcd 4406, 4411 (2017) (“*Media Regulation Public Notice*”); Remarks of Ajit Pai, Chairman, FCC, National Association of Broadcasters Show, at 2 (Apr. 25, 2017) (“The last thing broadcasting – or any industry for that matter – needs is outdated regulations standing in its way. And that’s particularly true in communications, where things change so quickly. That’s why I’ll work aggressively to modernize the FCC’s rules, cut unnecessary red tape.”); *Connect America Fund et al.*, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, 26 FCC Rcd 4554, 4629 ¶ 216 (2011); *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers*, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 15817, 15837 ¶ 57 (2007); *Price Cap Performance Review for Local Exchange Carriers*, Notice of Proposed Rulemaking, 9 FCC Rcd 1687 (1994); *Policy and Rules Concerning Rates for Dominant Carriers*, Opinion, 6 FCC Rcd 2974, 2994-95 ¶ 50 (CCB 1991); Remarks by Andrew C. Barrett, Commissioner, FCC, “The Role of Regulation in the Transformation of Local Telecommunications to Competitive Markets” at Michigan State University (Dec. 9, 1991) (“Our regulation must clearly reflect [competitive realities] by applying appropriate incentives to the companies. Continuing competition will most definitely affect revenues, earnings and growth rates, as well as future investment decisions. ... We cannot force the LECs to hold onto outdated or stranded investment and expect them to compete. New

As several Commissioners have noted, increased broadband investment will strengthen our broadband networks and encourage innovation.⁷

USTelecom has previously urged the Commission to grant forbearance or nondominance relief to ILECs and RBOCs. A significant amount of relief from certain provisions of the Telecommunications Act of 1996 (“1996 Act”)⁸ that were largely aimed at opening local voice services markets to competition was granted in 2013 and 2015.⁹

A. The 1996 Act’s ILEC- and RBOC-Specific Mandates Were Always Meant to Be Removed When the Marketplace Became Competitive.

The mandates at issue in this Petition were never meant to remain in place after facilities-based competition was achieved. Instead, they were designed to be either “market-opening”

regulations must better reflect depreciation realities.”); *American Telephone & Telegraph Co. Manual and Procedures for the Allocation of Costs*, Notice of Inquiry, 73 F.C.C.2d 629, 646-47 ¶ 39 (1978) (“Communications is now in a state of rapidly changing technology. New services are being created and old services are being provided in new ways. Regulation must adapt itself to these industry changes.”).

⁷ See, e.g., Remarks of Ajit Pai, Chairman, FCC, at the Fourth Meeting of the BDAC, Washington, D.C., at 1 (Jan. 23, 2018) (“[W]e need massive investment to construct, expand, and improve wired and wireless networks. And to spur that investment, in turn, the FCC needs to remove outdated and unnecessary regulatory barriers.”); Remarks of Commissioner Brendan Carr at the Consumer Technology Association’s 5G Day, “Ensuring the United States is 5G Ready,” Washington, D.C., at 2 (Feb. 28, 2018) (“Carr Remarks”) (calling for the Commission to “aggressively ... modernize our infrastructure deployment rules”); see also *id.* (“Capital is finite, and capital is smart. It will flow to those countries that have updated and modernized their regulatory structures.”).

⁸ The 1996 Act’s goals were “to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies.” 1996 Act Preamble.

⁹ 2015 USTelecom Forbearance Order, 31 FCC Rcd 6157; *Petition of USTelecom for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain Legacy Telecommunications Regulations*, Memorandum Opinion and Order and Report and Order Further Notice of Proposed Rulemaking and Second Further Notice of Proposed Rulemaking, 28 FCC Rcd 7627 (2013) (“2013 USTelecom Forbearance Order”); 2013 USTelecom Forbearance Short Order, 28 FCC Rcd 2605.

transitional mechanisms that would “jump-start” competition in the local exchange market¹⁰ or, in the case of Section 272, safeguards necessary only in the absence of competition.

Senator John Breaux, a leading backer of the 1996 Act, explained that Section 251(c)’s mandates were “extraordinary,” as they required “private industry” to take steps to “let the competitors come in and try to beat [their] economic brains out,” and that the provision was intended as “almost a jump-start” for competitors.¹¹ Senator Breaux also described the purpose of the Section 251(c)(3) unbundling requirements as follows: “it is unlikely that competitors will have a fully redundant network in place when they *initially* offer local service ... [and] some facilities capabilities (*e.g.*, central office switching) will likely need to be obtained from the incumbent local exchange carrier as network elements pursuant to new section 251.”¹² The Commission has echoed this view, recognizing that Section 251(c) was “designed to promote *the development* of competitive markets,”¹³ and that the justification for continued unbundling

¹⁰ Remarks of Sen. Breaux (La.) on Pub. L. 104-104 (1995), 141 Cong. Rec. 15572 (1995).

¹¹ *Id.*

¹² S. Conf. Rep. No. 104-230, at 148, 142 Cong. Rec. H. 1078 (1996) (emphasis added).

¹³ *Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Omaha Metropolitan Statistical Area*, Memorandum Opinion and Order, 20 FCC Rcd 19415, 19417 ¶ 3 (2005) (“*Omaha Forbearance Order*”) (emphasis added); see also *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, 15 FCC Rcd 3696, 3704 ¶ 14 (1999) (“*UNE Remand Order*”) (observing that “unbundling rules that are based on a preference for development of facilities-based competition in the long run will provide incentives for both incumbents and competitors to invest and innovate, and should allow the Commission to reduce regulation once true facilities-based competition develops”); *id.* at 3701 ¶ 6 (acknowledging “Congress’s expectation that new competitors would use unbundled elements from the incumbent LEC until it was practical and economically feasible to construct their own networks”). The Commission subsequently observed that it had “come to recognize more clearly the difficulties and limitations inherent in competition based on the shared use of infrastructure through network unbundling.” *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, 18 FCC Rcd 16978, 16984 ¶ 3 (2003) (“*Triennial Review Order*”).

requirements diminishes as competition increases. Specifically, the Commission has stated that “[the] unbundling rules are designed to remove unbundling obligations over time as carriers deploy their own networks and downstream local exchange markets exhibit the same robust competition that characterizes the long distance and wireless markets,”¹⁴ and that “[u]nbundling rules that encourage competitors to deploy their own facilities in the long run will provide incentives for both incumbents and competitors to invest and innovate, and will allow the Commission and the states to reduce regulation once effective facilities-based competition develops.”¹⁵

The courts as well have recognized the specific transitional market-opening purpose of Section 251(c)(3). For example, in his separate opinion in *AT&T Corp. v. Iowa Utilities Board*, Justice Breyer explained that the basic congressional objective of the 1996 Act’s unbundling requirement was to facilitate the introduction of competition where practical – “without inordinate waste,” and also stated his belief that “given the Act’s basic purpose, it requires a *convincing explanation* of why facilities should be shared (or ‘unbundled’) where a new entrant could compete effectively *without the facility*, or where practical alternatives to that facility are available.”¹⁶

The D.C. Circuit likewise recognized that Section 251(c) was designed “[t]o enable new firms to *enter* the field despite the advantages of the incumbent local exchange carriers [by giving] the Federal Communications Commission broad powers to require ILECs to make

¹⁴ *Unbundled Access to Network Elements; Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Order on Remand*, 20 FCC Rcd 2533, 2535 ¶ 3 (2005) (“*Triennial Review Remand Order*”).

¹⁵ *UNE Remand Order*, 15 FCC Rcd at 3700 ¶ 6.

¹⁶ *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 428 (1999) (Breyer, J., concurring in part and dissenting in part) (emphasis added).

‘network elements’ available to other telecommunications carriers, most importantly the competitive local exchange carriers.”¹⁷ That court also explained that these requirements were intended to last only so long as they were necessary for competition because, as widely recognized, unbundling imposes substantial societal and economic costs: “[M]andatory unbundling comes at a cost, including disincentives to research and development by both ILECs and CLECs and the tangled management inherent in shared use of a common resource.”¹⁸

B. The Markets for ILEC and RBOC Offerings Are Indisputably Competitive.

In previously granting forbearance relief in connection with other outdated ILEC-specific rules, the Commission cited “broad market trends” showing, among other things, that increasing numbers of consumers were opting for service providers other than ILECs and turning away from stand-alone long-distance services.¹⁹ As shown below, communications markets today are competitive, radically different than they were in 1996 when the requirements from which we seek relief were adopted.

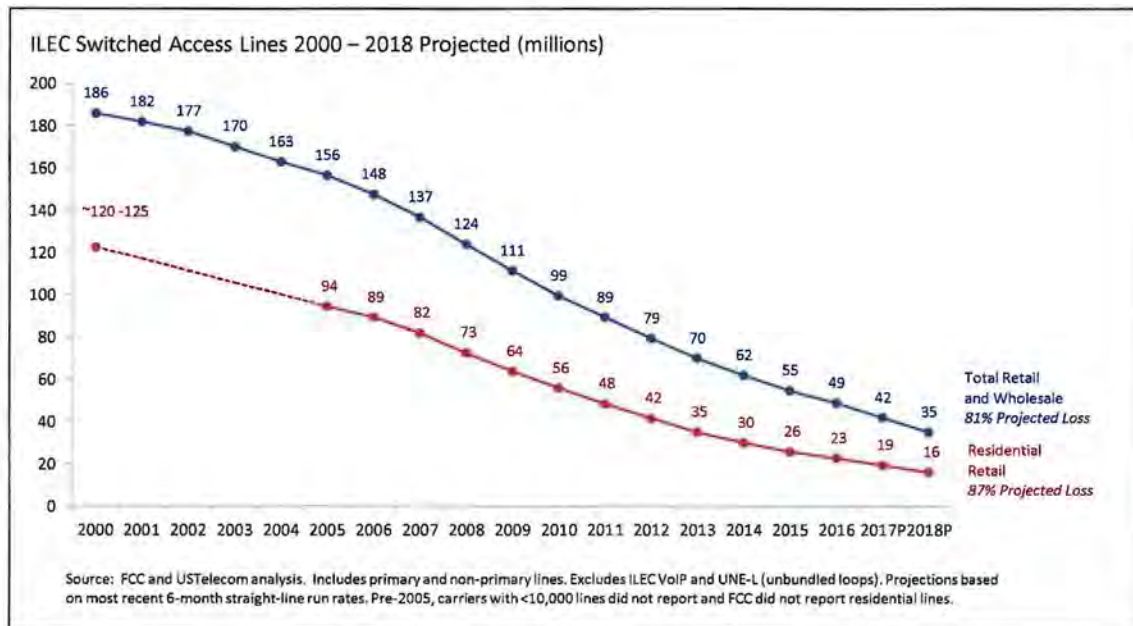
ILEC switched voice lines have dropped precipitously. There has been a staggering decline in ILEC switched access voice line subscriptions, from 186 million in the year 2000 to 49 million in 2016, to a projected 35 million in 2018, as Chart 1 illustrates:

¹⁷ *United States Telecom Ass’n v. FCC*, 359 F.3d 554, 561 (D.C. Cir. 2004) (“*USTA I*”) (emphasis added) (internal citations omitted).

¹⁸ *United States Telecom Ass’n v. FCC*, 290 F.3d 415, 429 (D.C. Cir. 2002) (“*USTA I*”) (citing *Iowa Utils. Bd.*, 525 U.S. at 428 (Breyer, J., concurring in part and dissenting in part)).

¹⁹ See, e.g., *2015 USTelecom Forbearance Order*, 31 FCC Rcd at 6161 ¶ 6.

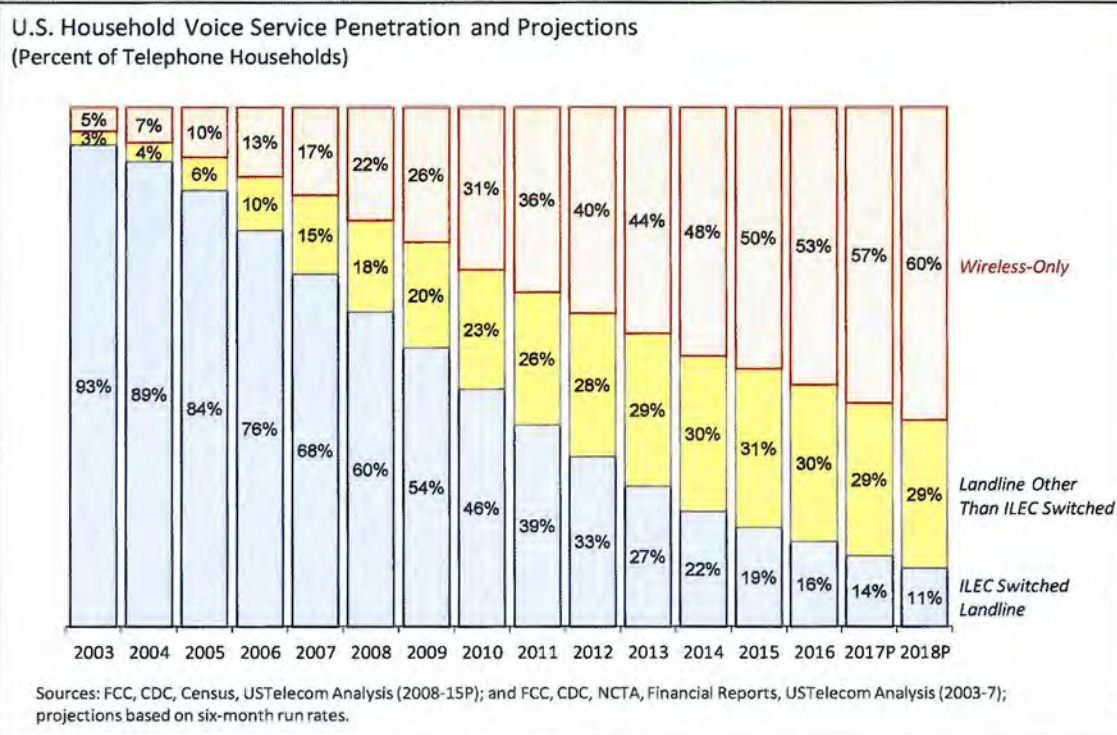
Chart 1



At the same time, the availability of competitive alternatives for voice service has risen dramatically. As Chart 2 below shows, only 11 percent of U.S. telephone households are projected to have ILEC switched landline voice service by the end of this year, continuing a steady and unabating decline from 93 percent in 2003 to 46 percent in 2010 to 16 percent in 2016. The enormous number of households that continue to abandon ILEC POTS service are not switching to competitive alternatives that rely on UNEs or resale. Rather, they are relying for the most part on providers that use their own facilities or a broadband connection to deliver voice services to their customers. As Chart 2 shows, a projected 60 percent of telephone households will have replaced wireline service with wireless service by the end of this year.²⁰

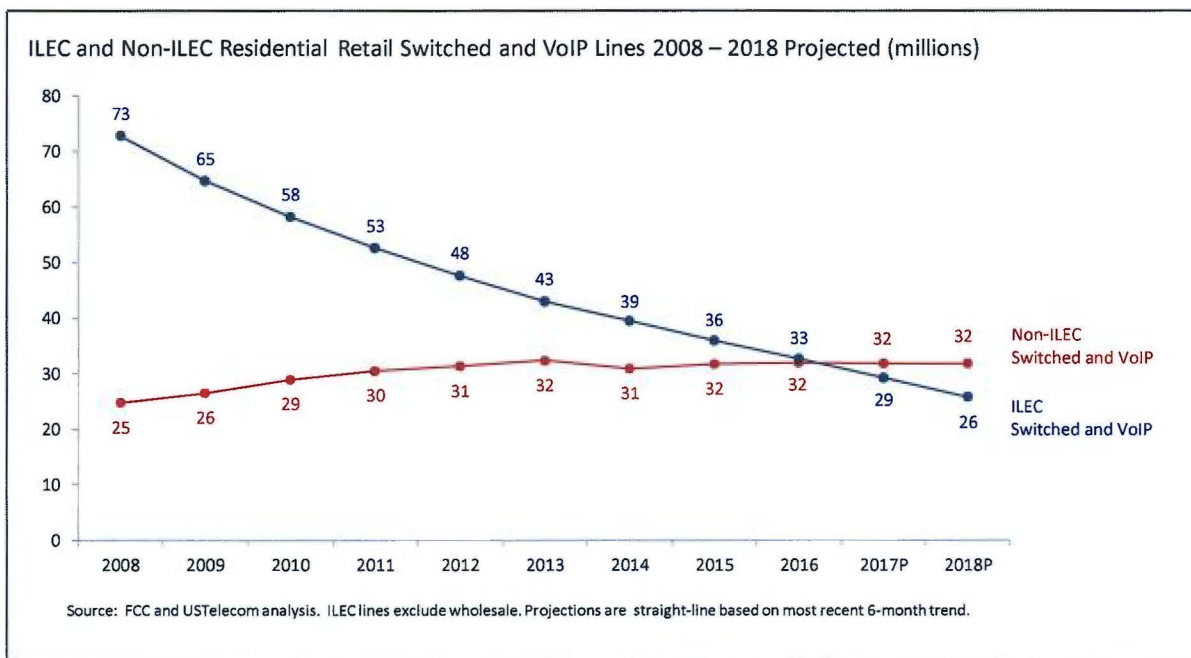
²⁰ See Patrick Brogan, *USTelecom Industry Metrics and Trends 2018*, USTELECOM, at 10 (Mar. 1, 2018), <https://www.ustelecom.org/sites/default/files/images/USTelecom%20Industry-%20Metrics%20and%20Trends%202018.pdf>.

Chart 2



Even among the 40 percent of households that are projected to maintain landline voice service (either switched or VoIP), approximately 55 percent (32 million) are projected this year to obtain that service from a non-ILEC, rather than an ILEC, as Chart 3 below illustrates.

Chart 3



The rapid migration of customers from ILEC services to competitive voice alternatives is taking place not only in the consumer market segment, but in the business segment as well. According to FCC data, as of year-end 2016, ILECs' share of business- and government-grade switched access and interconnected VoIP connections had fallen to 45 percent, down from 49 percent the previous year.²¹

These data and the ongoing migration of both residential and business customers away from ILEC switched voice services provide stark evidence that ILEC voice services are subject to intense and durable competition. That competition comes from many quarters, is

²¹ FCC, *Voice Telephone Service: Status as of December 31, 2016*, Table 1 (Feb. 2018) (“*FCC Voice Services Report Year-End 2016*”) (indicating that ILECs had 25.7 million out of 56.9 million business and government grade voice service connections at the end of 2016, compared to 27.8 million out of 56.1 million at the end of 2015). In fact, the Commission recognized in 2016 that the use of ILEC switched access service is in significant decline. See *Technology Transitions*; *USTelecom Petition for Declaratory Ruling that Incumbent Local Exchange Carriers are Non-Dominant in the Provision of Switched Access Services*, *Declaratory Ruling, Second Report and Order, and Order on Reconsideration*, 31 FCC Rcd 8283, 8289-90 ¶¶ 16-18 (2016) (“*Technology Transitions Declaratory Ruling*”).

predominantly intermodal in nature, and belies claims that ILECs maintain market power or essential facilities in the provision of voice service.²²

ILECs also face intense competition from business data service providers. Intense competition is not limited to voice services. The Commission just completed a detailed investigation of the business data services (“BDS”) marketplace, based on the largest and most granular data collection the agency has ever undertaken, and concluded that there is “intense competition present in this market.”²³ The advent of Ethernet services has transformed the BDS marketplace, making “obsolete” the TDM services that are the subject of unbundling requirements, and the rapid growth of cable alternatives is “the most dramatic change in the market over the past decade[.]”²⁴ As the Commission noted, “[t]o a large extent in the [BDS]

²² That this competition developed primarily through ubiquitous cable and wireless offerings, as opposed to traditional wireline offerings, is irrelevant. The marketplace is indisputably competitive, and “Congress did not express explicitly a preference for one particular competitive arrangement.” *UNE Remand Order*, 15 FCC Rcd at 3700 ¶ 6; see also *Triennial Review Order*, 18 FCC Rcd at 17045 ¶ 97 (“the Act expresses no preference for the technology that carriers should use to compete with the incumbent LECs”). Indeed, Justice Breyer presciently pondered nearly two decades ago whether the market might favor intermodal competition over network-sharing: “The Act expresses this [unbundling] requirement in general terms, reflecting congressional uncertainty about the extent to which compelled use of an incumbent’s facilities will prove necessary to avoid waste. Will wireless technology or cable television lines, for example, permit the efficient provision of local telephone service without the use of existing telephone lines that now run house to house?” *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 428 (1999) (Breyer, J., concurring in part and dissenting in part). As accurately predicted in one authoritative telecommunications law treatise, “[e]ventually, cross-platform competition may so thoroughly deprive the wireline telephone companies of their traditional market power that it no longer makes sense to think of them – or regulate them – as natural monopoly providers of voice services.” Jonathan E. Nuechterlein & Philip J. Weiser, *DIGITAL CROSSROADS*, at 26 (MIT Press, 1st Ed., 2005).

²³ *Business Data Services in an Internet Protocol Environment*, Report and Order, 32 FCC Rcd 3459, 3461 ¶ 1 (2017) (“BDS Order”).

²⁴ *Id.* at 3485 ¶ 55.

market, the competition envisioned in the [1996 Act] has been realized,”²⁵ and it established a carefully calibrated set of new regulations that render further UNE requirements unnecessary.

The overriding reality of the BDS marketplace is that Ethernet services are rapidly replacing legacy TDM services. “Although incumbent LECs once dominated the business data services market selling circuit-based DS1 and DS3s, such technology is becoming obsolete [... because] rapidly increasing bandwidth demands will place an ever increasing demand for services such as Ethernet, especially over fiber, which can scale bandwidth to meet these requirements more effectively.”²⁶ The Commission therefore found that “[p]acket-based services represent the future of business data services and are readily scalable, so competitive LECs are generally very willing to deploy such services beyond their footprints because they can expect to earn increasing revenues from their initial investment with few additional costs.”²⁷ The “higher bandwidth capabilities of these services will lead to greater returns on investment and in turn, greater incentives for facilities-based entry into the business data services market,” and therefore “this competition, or potential competition between legacy and packet-based services, [is] sufficient enough to discipline pricing.”²⁸

Because of Ethernet’s inherent superiority, Ethernet is rapidly supplanting the TDM technologies used for UNEs.²⁹ That transition is far along and, if anything, is accelerating. As

²⁵ *Id.* at 3462 ¶ 5.

²⁶ *Id.* at 3461-62 ¶ 3.

²⁷ *Id.* at 3500 ¶ 88; *see also id.* at 3614-15 ¶¶ 44-45.

²⁸ *Id.* at 3498 ¶ 83.

²⁹ *See id.* at 3470-71 ¶ 23 (explaining how packet-based networks are more efficient than circuit-based networks); *see also id.* at 3471-72 ¶ 25 (“Substitution between these two services, however, is generally one directional. New customers, more likely than not, are choosing to purchase Ethernet services, subject to their availability and pricing, and existing customers of

the Commission found, “Ethernet-based services accounted for more than 40 percent of total dedicated service revenues in 2013, and Ethernet business data services revenues have been growing by over 20 percent a year since then.”³⁰ Indeed, as the Commission has emphasized, its goal to “encourage that migration,” as the transition to Ethernet is “moving towards the eventual termination of TDM service offerings altogether.”³¹

The Commission concluded that legacy TDM services, both transport and channel terminations, are also broadly competitive, with nearly 500 facilities-based competitors having deployed service in the U.S. as of 2013.³² With respect to transport, the Commission found “strong evidence of substantial competition.”³³ “[T]ransport service represents the ‘low-hanging fruit’ of the business data services circuit, which makes it particularly attractive to new entrants.”³⁴ Indeed, transport competition had been “robust” for many years, ever since a “large proportion of TDM transport services were deregulated” in the early 2000s.³⁵

The Commission cited evidence that, “as of 2013, competitive providers ha[d] deployed competing transport networks in more than 95 percent of census blocks with special access

TDM-based service are switching to Ethernet. There is no evidence suggesting Ethernet customers are switching to DS1s and DS3s.”).

³⁰ *Id.* at 3490-91 ¶ 68; *see also id.* (“Notably, this revenue growth came in spite of falling prices, which likely indicates expansion of market output and/or demand shifts to higher bandwidth and thus more competitive services.”).

³¹ *Id.* at 3471-72 ¶ 25.

³² *Id.* at 3653 (Statement of Commissioner O’Rielly).

³³ *Id.* at 3496-97 ¶ 79.

³⁴ *Id.* at 3498 ¶ 82.

³⁵ *Id.* at 3496-97 ¶ 79.

demand (and about 99 percent of business establishments are in these MSAs).³⁶ The Commission also noted that the 2013 data showed that “the vast majority of locations with special access demand” are within a few hundred feet of competitive fiber.³⁷ Indeed, the Commission staff’s own analysis showed that, based on 2013 data, “in all price cap territories, 92.1 percent of buildings served were within a half mile of competitive fiber transport facilities,” and “for all census blocks with business data services demand, 89.6 percent have at least one served building within a half mile of competitive LEC fiber.”³⁸ And as the Commission conceded, these data were “conservative” because they are outdated (2013 data) and did not include all cable competition.³⁹

The Commission made similar findings with respect to channel terminations. It found that about 93 percent of “locations with special access demand” were subject to competition and could thus be deregulated.⁴⁰ The Commission emphasized that these measures were “conservative” as well because, for example, cable companies were just ramping up in 2013 when the data was collected, and have grown at an extraordinarily rapid pace since then.⁴¹

³⁶ *Id.* at 3496-97 ¶ 79 n.252 (citing Letter from James P. Young, Counsel to AT&T, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 16-143 *et al.*, at 4 (filed Oct. 25, 2016)).

³⁷ *Id.* at 3496-97 ¶ 79 n.265 (citing Letter from Christopher T. Shenk, Counsel to AT&T, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 05-25, RM-10593, at 1, 3 (filed Apr. 20, 2016) (“[B]uildings that have only an ILEC connection are, on average, only 364 feet from the closest CLEC fiber network.” (citing *id.*, Attach., Second Supplemental Declaration of Mark Israel, Daniel Rubinfeld & Glenn Woroch ¶ 5)).

³⁸ *Id.* at 3501 ¶ 91.

³⁹ *Id.* Although the Commission acknowledged that competitive alternatives were not 100 percent “universal,” it specifically held that competition was “sufficiently widespread for us to have confidence that a combination of these factors will broadly protect against the risk of supracompetitive rates being charged by price cap LECs over the short- to medium-term.” *Id.* at 3501 ¶ 92.

⁴⁰ *Id.* at 3526 ¶ 142.

⁴¹ *Id.* at 3526-27 ¶ 143.

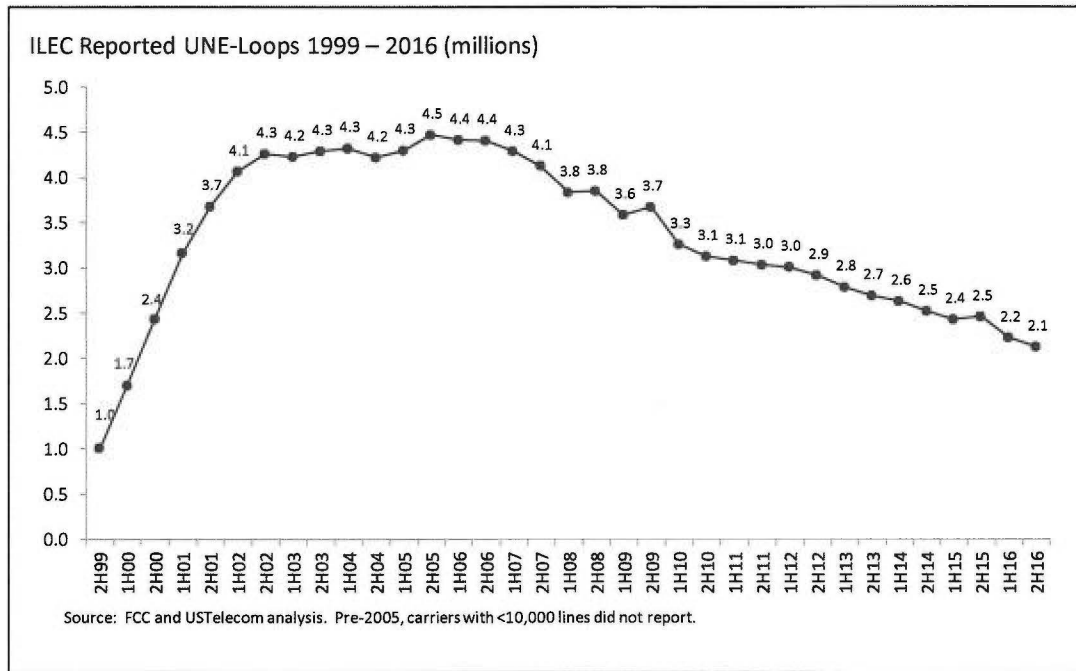
Using its extraordinarily granular dataset, the Commission fashioned a new regulatory regime that was tailored precisely to today's competitive realities. This new regulatory framework uses a "competitive market test" to identify counties in which BDS competition has taken hold. In counties that do not pass the test, the Commission retained price cap regulation, with an increased annual productivity offset to ensure that rates remain just and reasonable. This new regime was carefully designed to balance the Commission's twin goals of removing regulation that creates disincentives for broadband investment, but retaining such regulation where it was necessary to protect consumers.⁴²

Competition is not dependent on UNEs or resale. Notably, UNEs today play a very minor and diminishing role in this competitive marketplace.⁴³ Competitor use of unbundled facilities peaked more than ten years ago, with ILECs reporting 4.5 million UNE loops in use in 2005, falling by more than half to 2.1 million in 2016:

⁴² See *id.* at 3462 ¶ 4 ("[W]e adopt a framework based on our market analysis and a careful balancing of the costs and benefits of ex ante pricing regulation that deregulates counties where the provision of price cap incumbent LECs' business data services is deemed sufficiently competitive.").

⁴³ Although the DS0, DS1 and DS3 categories cover the vast majority of unbundled facilities, there is substantially more complexity underneath these categories. Section 51.319 of the Commission's rules sets out the remaining specific UNE obligations. 47 C.F.R. § 51.319. Some of these, such as the obligation to make available a 64 kbps channel via fiber that has replaced copper, have been eliminated via forbearance. Likewise, the Commission recently "expand[ed] upon and adjust[ed]" its prior forbearance actions and deemed grants governing particular providers and BDS services – often referred to collectively as the "Enterprise Forbearance Orders" – "to the extent necessary to level the regulatory playing field for all of these business data services providers." *BDS Order*, 32 FCC Rcd at 3529 ¶ 153; see generally *id.* at 3529-33 ¶¶ 155-65 (describing forbearance in connection with "any packet-based business data services or circuit-based business data services above the DS3 bandwidth level," the "provision of business data services elements that comprise transport pursuant to section 69.709(a)(4) of the Commission's rules," and "DS1 and DS3 end user channel terminations services and any other special access services currently tariffed in competitive counties or in non-competitive counties previously subject to Phase II pricing flexibility").

Chart 4



In 2008, ILECs reported less than four million UNE loops and, by 2016, the number of UNE loops reported by ILECs had fallen to just over two million.⁴⁴ Even as the number of UNE loops in use has dwindled substantially, non-ILEC voice subscribers have continued to grow rapidly – especially subscribers served over non-ILEC-owned last-mile facilities. Chart 5 below shows that since 2008, as ILEC-provided UNE loops were declining, total non-ILEC end-user voice lines grew 42 percent, from 44 million to 63 million. Moreover, the combined number of end users served over last-mile facilities owned or predominantly owned by non-ILECs nearly doubled over the same period, from 28 million in 2008 to 55 million in 2016.⁴⁵

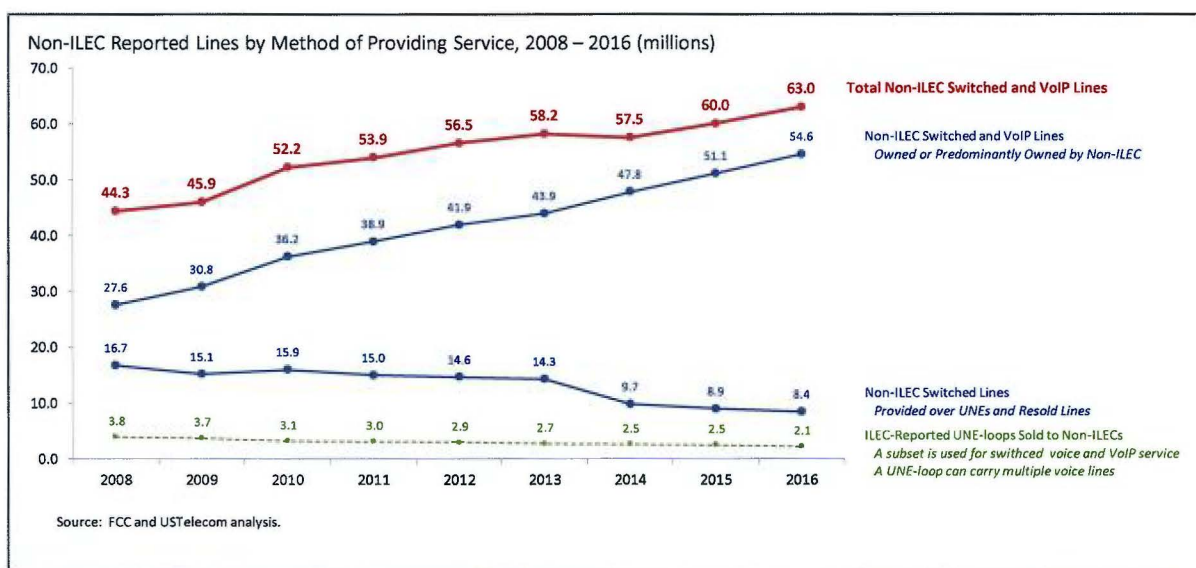
According to Commission data, at the end of 2016, non-ILECs used UNE loops to provision *less than four percent* of non-ILEC end-user switched access lines and interconnected

⁴⁴ USTelecom cites 2008 as the starting point here because the Commission does not have consistent data for interconnected VoIP prior to year-end 2008.

⁴⁵ See FCC Voice Services Report Year-End 2016, Table 1; see also FCC, *Local Telephone Competition Report: Status as of December 31, 2008*, Figure 5 (June 2010).

VoIP lines,⁴⁶ while non-ILEC switched access services over ILEC-provisioned UNE loops account for *less than two percent of all fixed lines and less than one-half of one percent of all connections (i.e., including wireless lines).*⁴⁷ Although these Commission data do not distinguish among loop capacity levels, unbundled loops represent a small and declining portion of the competitive landscape at all capacity levels.

Chart 5



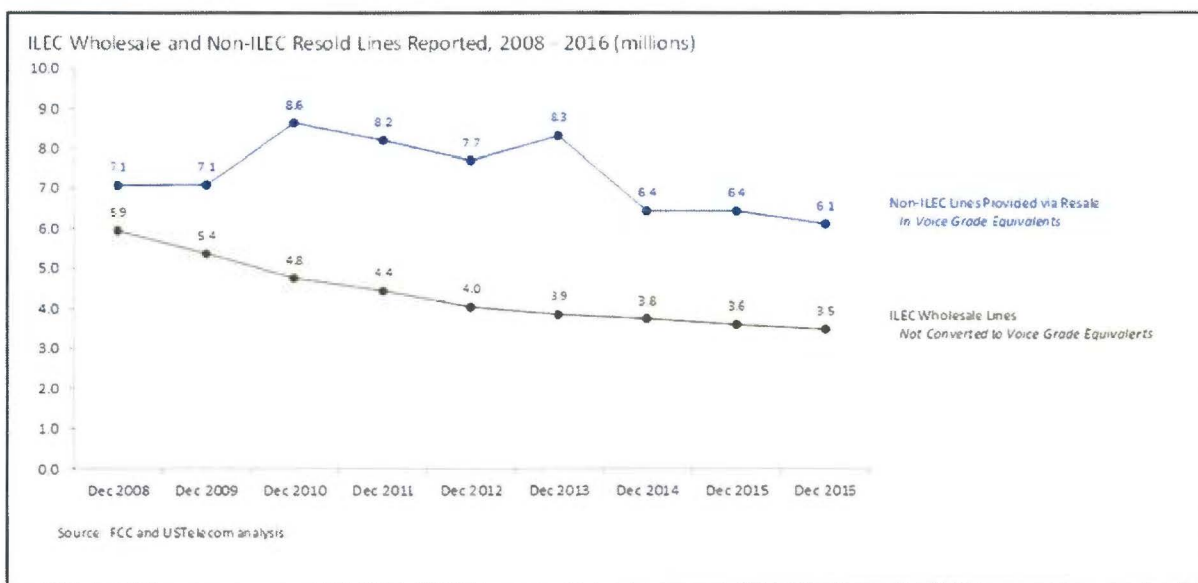
Data showing lines served through resale arrangements provide additional insight into competition. ILECs are providing, and non-ILECs are utilizing, a declining number of wholesale

⁴⁶ *FCC Voice Services Report Year-End 2016*, at Table 1, Lines 6 and 77 (indicating that non-ILECs provisioned 2.3 million end-user switched access lines using ILEC UNE loops out of 63.0 million non-ILEC end-user switched access lines and interconnected VoIP subscriptions at the end of 2016). Even with regard to business services, non-ILEC switched access services over UNE loops as of 2016 only accounted for approximately seven percent of business subscribers. *Id.* at Table 1, Lines 12 and 77 (non-ILECs provided a total of 31.2 million business and government grade end-user switched access lines and VoIP subscriptions).

⁴⁷ *Id.* at Table 1, Lines 1, 4, and 77 (stating that there were 121.2 million end-user switched access lines and interconnected VoIP subscriptions, and 341.4 million mobile telephone connections, for a combined total of 462.6 million total voice connections, at the end of 2016). The Commission's data do not distinguish among loop capacity levels. The figures presented in this section thus include all loop capacities. Figures reflecting the use of DS0s would be even lower than those cited here.

lines to provision services to end users. As shown in Chart 6 below, ILECs reported 3.5 million wholesale lines in 2016, down from 5.9 million in 2008, and non-ILEC lines provided via resale were 6.1 million in 2016, down from a peak of 8.6 million in 2010.⁴⁸ Thus, as with UNEs, resold lines constitute a small and declining portion of competitive lines in the marketplace.

Chart 6



There is no longer even a recognizable market for local exchange service. Competition has not only eroded any bottleneck ILECs may once have had in the provision of local exchange services, it has also eviscerated the distinction between “local” and “long-distance” that underlies provisions of the 1996 Act. Section 272, for example, assumes that customers will be forced to purchase local exchange services from an ILEC even as they may seek long-distance services from another provider. Yet that is rarely the case today, as today’s communications marketplace

⁴⁸ Lines provided through discounted resale arrangements under Section 251(c)(4) constitute a subset of these data. See FCC, *Local Telephone Competition Report: Status as of December 31, 2013*, Figure 8 n.1 (Oct. 2014) (“Resold ILEC services include switched access lines made available to CLECs at wholesale rates, resold Centrex, Integrated Services Digital Network (ISDN), or other ILEC services, ILEC special access circuits channelized to provide CLEC retail switched access lines, and ILEC switched access lines provided to CLECs under commercial agreements that replaced UNE-P.”).

is a vibrantly competitive “all-distance” marketplace in which providers offer services with no regard for whether they are “local” or “long-distance” in nature.⁴⁹ Indeed, voice service itself may no longer constitute a distinct market, as providers typically offer service packages that combine voice with data, and often video service, as well as (in the case of mobile service) messaging offerings.

DISCUSSION

The Commission can and must use its Section 10 forbearance authority to conform the regulatory regime for ILECs and RBOCs to today’s marketplace realities. Section 10 requires the Commission to eliminate regulatory obligations that no longer serve a valid public policy purpose, and the requirements from which we seek forbearance here fall squarely into that category. The development of durable and increasing facilities-based competition has obviated the need for these requirements. These obligations distort incentives to invest in broadband infrastructure, which could result in more jobs and more economic growth. Forbearance will “benefit consumers through lower rates and/or more vibrant competitive offerings and promote[] competition by providing a more level playing field because other providers of similar services are not subject to the rules.”⁵⁰

The Commission’s exercise of its statutory forbearance duty would not disrupt the marketplace. Only a small fraction of competitive offerings rely on the regulations from which we seek forbearance. And while the touchstone of any forbearance analysis must be its impact on competition and consumers, not individual competitors, today most competitors do not rely

⁴⁹ Notably, the Commission stopped publishing its “Statistics of the Long Distance Telecommunications Industry” in 2003. See FCC, *Statistics of the Long Distance Telecommunications Industry*, <https://www.fcc.gov/general/statistics-long-distance-telecommunications-industry>.

⁵⁰ 2013 USTelecom Forbearance Order, 28 FCC Rcd at 7650-51 ¶ 41.

on ILEC networks to compete. To the extent they do, many statutory provisions will remain in place to ensure that services remain available on just and reasonable and not unreasonably discriminatory terms.⁵¹ Thus, the Act's generally applicable provisions are sufficient to protect retail and wholesale consumers and well suited for a marketplace in which no one set of participants is dominant.

This Petition sets forth below the factual and legal arguments that together comprise its *prima facie* case for forbearance with respect to the statutory provisions and regulations at issue.⁵² To be clear, USTelecom does *not* seek forbearance from any legal requirement that applies to all providers of telecommunications services. For example, following forbearance, ILECs will continue to provide their telecommunications service offerings for resale on a commercial basis and pursuant to Section 251(b)(1), while being relieved of impediments that apply to them alone.

I. FORBEARANCE FROM RULES GOVERNING LEGACY ILEC SERVICES IS WARRANTED.

A. The Act Mandates Forbearance Where Rules Are No Longer Necessary Or In the Public Interest.

The Act compels forbearance where (1) a regulatory requirement is no longer necessary to ensure that the charges, practices, classifications, or regulations by, for or in connection with telecommunications services are just and reasonable and are not unjustly or unreasonably discriminatory; (2) enforcement of the requirement is not necessary for the protection of

⁵¹ Indeed, the Commission just completed a recalibration of its price cap regime for BDS services, and that effort offers even greater assurances that carriers need not rely on Section 251 unbundling and resale to have just and reasonable alternative services and inputs available to them. *See generally BDS Order*, 32 FCC Rcd 3459.

⁵² *See* 47 C.F.R. § 1.54(b)(1).

consumers; and (3) forbearance is consistent with the public interest.⁵³ The D.C. Circuit has observed that “there is a great deal of overlap in the three factors.”⁵⁴ To determine what is “necessary” under the first two factors, the Commission has applied, and the courts have embraced, a test examining whether there is a “strong connection” between the rule and the agency’s purpose.⁵⁵ And the Commission has explained that there must be a “current need” to maintain a statutory requirement or a challenged regulation.⁵⁶

Section 10(b) directs the Commission, in making its public interest determination, to consider whether forbearance from enforcing the provision will promote competitive market conditions, including the extent to which such forbearance will enhance competition among providers of telecommunications services. Where forbearance promotes competition, the Commission can rely on that determination to “find[] that forbearance is in the public interest.”⁵⁷ This analysis “entails considering, for example ... broad market trends and shifting demand[,] ... claims about competition ... and other circumstances in which competition is particularly relevant.”⁵⁸ A showing that the provisions at issue are “outdated and harmful *as a general matter*” permits a finding that the requirements “are *entirely unnecessary* in all geographic

⁵³ See 47 U.S.C. §§ 160(a)(1)-(3); see also *United States Telecom Ass’n v. FCC*, 825 F.3d 674, 727 (D.C. Cir. 2016) (“*USTA III*”).

⁵⁴ *Verizon v. FCC*, 770 F.3d 961, 964 (D.C. Cir. 2014).

⁵⁵ See, e.g., *CTIA v. FCC*, 330 F.3d 502, 512 (D.C. Cir. 2003).

⁵⁶ *Petition of AT&T Inc. for Forbearance Under 47 U.S.C. § 160 From Enforcement of Certain of the Commission’s Cost Assignment Rules*, Memorandum Opinion and Order, 23 FCC Rcd 7302, 7314 ¶ 20 (2008).

⁵⁷ 47 U.S.C. § 160(b).

⁵⁸ *2015 USTelecom Forbearance Order*, 31 FCC Rcd at 6165 ¶ 10.

markets.”⁵⁹ As shown below, this forbearance request satisfies all three prongs of the Section 10 forbearance standard. The rules at issue are unnecessary to ensure just, reasonable, and nondiscriminatory rates and practices or to protect consumers, and their continued enforcement is not in the public interest.

B. Retaining Unnecessary Rules In a Competitive Marketplace Can Harm Consumers and Competition.

Although the Commission has adopted asymmetric regulatory requirements in markets that are not competitive, it has long recognized that in competitive markets, such regulatory disparities undermine consumer welfare by distorting competition.⁶⁰ ILECs and RBOCs no longer enjoy unique marketplace advantages. Thus perpetuating regulatory disparities that were put in place to jumpstart competition can no longer be justified. In fact, the Commission long ago recognized that the rise of facilities-based competition would eliminate the need for most ILEC- and RBOC-specific regulations.⁶¹

⁵⁹ *Id.* at 6164 ¶ 9 (emphasis in original); see also *Protecting and Promoting the Open Internet*, 30 FCC Rcd 5601, 5807-08 ¶ 439 & n.1306 (2015) (“Title II Order”) (finding that forbearance is warranted based on considerations found to be common nationwide).

⁶⁰ See, e.g., *Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, Order, 11 FCC Rcd 3271, 3288 ¶ 27 (1995) (holding that the cost of continued dominant carrier regulation of AT&T inhibited AT&T from quickly introducing new services and responding to new offerings by its rivals, and imposed compliance costs on AT&T and administrative costs on the Commission); *Petition of ACS of Anchorage, Inc. Pursuant to Section 10 of the Communications Act of 1934, as Amended (47 U.S.C. § 160(c)), for Forbearance from Certain Dominant Carrier Regulation of Its Interstate Access Services, and for Forbearance from Title II Regulation of Its Broadband Services, in the Anchorage, Alaska, Incumbent Local Exchange Carrier Study Area*, Memorandum Opinion and Order, 22 FCC Rcd 16304, 16351-52 ¶¶ 106-07 (2007) (finding that continuing to apply dominant carrier regulation to the ACS’s existing broadband services would create market inefficiencies, inhibit carriers from responding quickly to rivals’ new offerings, and impose other unnecessary costs).

⁶¹ *Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, As Amended*, Notice of Proposed Rulemaking, 11 FCC Rcd 18877, 18883-84 ¶ 9 (1996).

The Commission also has consistently recognized that forced sharing of facilities or services at mandated discounts reduces incentives for investment and innovation, to the detriment of consumers. In particular, mandates that make legacy facilities and services available at artificially low rates reduce incentives for competitors to deploy their own broadband facilities, diverting resources that could be put to better use, such as expanding the incumbent's own broadband capabilities.⁶²

Regulation also inherently imposes "significant administrative and compliance costs ... on [both] regulators and regulated companies,"⁶³ and eliminating or modifying outdated or unnecessary rules serves "the public interest by reducing ... undue regulatory burdens that can stand in the way of competition and innovation[.]"⁶⁴ Thus, the Commission has consistently sought to update its regulations to "reduce the cost and burdens of regulatory compliance."⁶⁵

⁶² See, e.g., *Promotion of Competitive Networks in Local Telecommunications Markets*, Notice of Proposed Rulemaking and Notice of Inquiry, 14 FCC Rcd 12673, 12676 ¶ 4 (1999) ("[I]n the long term, the most substantial benefits to consumers will be achieved through facilities-based competition, because only facilities-based competitors can break down the incumbents LECs' bottleneck control over local networks and provide services without having to rely on their rivals for critical components of their offerings."); *Triennial Review Order*, 18 FCC Rcd at 16985 ¶ 6 ("increasing presence of cable and wireless-based telephony services as well as the advent of broadband services and other new telecommunications and information services has already worked changes in the industry to a far greater extent than could have been reasonably predicted in 1996"); *Petition of Qwest Communications International Inc. for Forbearance From Enforcement of the Commission's Dominant Carrier Rules As They Apply After Section 272 Sunsets*, Memorandum Opinion and Order, 22 FCC Rcd 5207, 5220 ¶ 20 (2007) ("intermodal competition between wireline services and services provided on alternative service platforms, such as facilities-based VoIP and mobile wireless, has been increasing and is likely to continue to increase").

⁶³ *Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992: Rate Regulation*, Thirteenth Order on Reconsideration, 11 FCC Rcd 388, 415 ¶ 2 (1995).

⁶⁴ *Commission Launches Modernization of Media Regulation Initiative*, Public Notice, 32 FCC Rcd 4406, 4406 (2017).

⁶⁵ *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Second Report and Order, 30 FCC Rcd 14731, 14734 ¶ 51 (2015).

To its credit, the Commission has found in certain contexts that there is no longer a valid basis to impose unique and burdensome obligations only on incumbent wireline carriers.⁶⁶ But more must be done to ensure that “regulatory burdens are lifted as soon as competition eliminates the need for them.”⁶⁷ The Commission should therefore “look to the market, not to regulation” to ensure that competition and consumers are not harmed.⁶⁸

II. THE COMMISSION SHOULD FORBEAR FROM ENFORCEMENT OF UNBUNDLED ACCESS AND RESALE PROVISIONS IN SECTION 251(C)(3) AND (4) AND ASSOCIATED REQUIREMENTS UNDER SECTIONS 251 AND 252.

USTelecom seeks forbearance on a nationwide basis from Section 251(c)(3) and (4), and from aspects of Sections 251 and 252 designed to effectuate the mandates of these sections.⁶⁹ Specifically, USTelecom asks the Commission to forbear nationwide from enforcing the following:⁷⁰

- (1) Section 251(c)(3)’s obligation to provide unbundled access to network elements;
- (2) Section 251(c)(4)’s obligation to offer retail services for resale at an avoided cost discount; and
- (3) Section 252(a)-(c), (d)(1), (d)(3), (e), and (h)’s requirements regarding interconnection agreements, and Section 251(c)(1)’s duty to negotiate insofar as

⁶⁶ See, e.g., *Technology Transitions Declaratory Ruling*, 31 FCC Rcd at 8285 ¶ 8, 8293 ¶¶ 28-29 (no ILEC market power in provision of switched access); *BDS Order*, 32 FCC Rcd at 3499 ¶ 84 (no ILEC market power in provision of BDS).

⁶⁷ *Local Competition First Report and Order*, 11 FCC Rcd at 15507 ¶ 6.

⁶⁸ *Id.* at 15509 ¶ 12.

⁶⁹ Forbearance from related Section 251 and 252 obligations – i.e., from negotiation/mediation/arbitration duties with respect to Section 251(c)(3) and (4) obligations – would be “belt and suspenders,” insofar as the Commission grants forbearance from underlying Section 251(c)(3) and (4) obligations. It is important, however, to ensure that other policymakers cannot use surviving Section 251 or 252 powers to unlawfully replicate the Section 251(c)(3) and (4) regimes.

⁷⁰ We note that limiting this forbearance request to these enumerated provisions does not reflect a belief that additional relief from other Section 251 and 252 requirements is not now warranted.

they implement Section 251(c)(3) and (4) obligations (and only to that extent), and Section 251(d)(3) to the extent that provision would authorize states to reimpose unbundling and resale obligations from which the Commission has otherwise forborne.

A. Eliminating UNEs Will Remove Competitive Distortions In the Marketplace.

Rather than asking the Commission to eliminate Section 251(c)(3)'s unbundling regime through a finding of nationwide non-impairment under Section 251(d)(2),⁷¹ USTelecom seeks forbearance as an independent and equally permissible route to the same outcome.⁷² Nevertheless, the evidence would compel a finding of nationwide non-impairment, and this is "instructive in a section 10(a) forbearance proceeding."⁷³ Indeed, as the D.C. Circuit has observed in the context of the impairment test, the costs and market distortions associated with mandatory unbundling requirements placed on a subset of competitors are not simply *unnecessary* in the presence of robust facilities-based competition, but affirmatively *harmful*.⁷⁴ Once competition arises, there is "no reason to think [unbundling] would bring on a significant enhancement of competition," and "nothing in the Act appears a license to the Commission to inflict on the economy the sort of costs" associated with unbundling.⁷⁵ The Commission has elaborated on those costs, explaining, "excessive network unbundling requirements tend to undermine the incentives of both incumbent LECs and new entrants to invest in new facilities

⁷¹ 47 U.S.C. § 252(d)(2); *see also* 47 C.F.R. § 1.53 (requiring that forbearance requests be filed in pleading separate from pleading seeking any other relief).

⁷² *See AT&T Corp. v. FCC*, 236 F.3d 729 (D.C. Cir. 2001) (holding that the Commission must grant forbearance where warranted notwithstanding availability of an alternative path to similar relief).

⁷³ *See Petition of ACS of Anchorage, Inc. Pursuant to Section 10 of the Communications Act of 1934, as Amended, for Forbearance from Sections 251(c)(3) and 252(d)(1) in the Anchorage Study Area*, Memorandum Opinion and Order, 22 FCC Rcd 1958, 1961 ¶ 5 n.13 (2007).

⁷⁴ *See Triennial Review Order*, 18 FCC Rcd at 17071 ¶ 141 (stating that unbundling requirements constitute "one of the most intrusive forms of economic regulation").

⁷⁵ *USTA I*, 290 F.3d at 429.

and deploy new technology.”⁷⁶ And as the Commission has long recognized, facilities-based competition offers benefits not presented by forced unbundling. “[I]t is only through owning and operating their own facilities that competitors have control over the competitive and operational characteristics of their service, and have the incentive to invest and innovate in new technologies that will distinguish their services from those of the incumbent.”⁷⁷ In Chairman Pai’s succinct formulation, “[t]he government can’t manufacture competition through unbundling.”⁷⁸

While these observations were made in the context of the unbundling requirement, they apply, as well, to resale. Elimination of the Section 251(c)(4) resale requirements would not impair competition, and thus no credible argument can be made that the requirements are necessary to protect consumers or prevent unjust or unreasonable rates, terms or conditions of service. And just as below-market UNE rates distort investment decisions, mandated wholesale discounts for purposes of resale pose the same risk.

B. Enforcement of These Unbundling Access and Resale Requirements Is No Longer Necessary to Ensure That Charges and Practices Are Just and Reasonable and Not Unjustly or Unreasonably Discriminatory.

The presence of widespread intermodal competition renders Section 251(c)’s unbundling and resale mandates unnecessary to ensure reasonable and nondiscriminatory charges and practices.⁷⁹ The marketplace is irrevocably open to competition. Under these circumstances, the fundamental premise of Section 251(c)(3) and (4) – that achieving competition would require

⁷⁶ *Triennial Review Order*, 18 FCC Rcd at 16984 ¶ 3.

⁷⁷ *UNE Remand Order*, 15 FCC Rcd at 3701 ¶ 7.

⁷⁸ *BDS Order*, 32 FCC Rcd at 3644 (Statement of Chairman Ajit Pai).

⁷⁹ As the Commission long has recognized, robust competition such as that typifying all segments of today’s communications industry “is the most effective means of ensuring that ... charges, practices, classifications, and regulations ... are just and reasonable, and not unreasonably discriminatory.” *Petition of U S WEST Communications, Inc. for Forbearance*, Memorandum Opinion and Order, 14 FCC Rcd 16252, 16270 ¶ 31 (1999).

unbundling and wholesale discounts on the resale of ILEC telecommunications services – no longer holds. Competition in this marketplace does not rely on unbundling or resale mandates and will not falter if the Commission forbears.

Although the discussion herein focuses on DS0, DS1, and DS3 loops and DS1/DS3 transport offerings, for the sake of clarity, this Petition also seeks relief from all unbundling obligations, including those associated with hybrid loops and subloops, and with elements that facilitate unbundling of core transmission elements, such as network interface devices (“NIDs”), databases, and operations support systems (“OSS”). Forbearance with respect to these elements is warranted by the same factors that render forbearance appropriate for loop and transport elements.

Unbundled Network Elements (47 U.S.C. § 251(c)(3)). Section 251(c)(3) requires ILECs to provide requesting telecommunications carriers nondiscriminatory access to unbundled network elements.⁸⁰ The Commission has described the unbundling regime as a “*transitional arrangement*” for use “until fledgling competitors could develop a customer base and complete the construction of their own networks,”⁸¹ and consequently the Commission has pared back the unbundling mandate as facilities-based competition has taken hold.⁸²

In the residential marketplace, competition will not be materially affected by forbearance from Section 251(c)(3) because there is effectively no remaining UNE-based competition in that

⁸⁰ See 47 U.S.C. § 251(c)(3).

⁸¹ *UNE Remand Order*, 15 FCC Rcd at 3700 ¶ 6 (emphasis added).

⁸² See *Triennial Review Order*, 18 FCC Rcd 16978 (removing obligations for broadband-related network elements such as greenfield fiber-to-the-home, packet switching, and line sharing mandates); *Triennial Review Remand Order*, 20 FCC Rcd 2533 (eliminating unbundled end-office switching, noting competitors’ ability to self-provision such facilities or acquire them elsewhere); *2015 USTelecom Forbearance Order*, 31 FCC Rcd at 6189 ¶ 55 (forbearing from requiring ILECs that retired copper facilities after installing fiber-to-the-home facilities to offer competitors an unbundled 64 kbps voice-grade channel).

marketplace. To the extent CLECs serve residential customers using ILEC facilities, they do so on commercial platforms. Under these circumstances, far from reducing competition, the elimination of unbundling requirements will only further intensify competition by encouraging even more facilities-based investment. At the same time, the already intense competition that comes from providers using their own facilities will continue unabated.⁸³

The same is true of BDS services. The Commission just adopted a carefully calibrated new regime of regulation in the *BDS Order* that retains rate regulation only in the precise circumstances in which it remains necessary today.⁸⁴ Notably, this new scheme represents a direct implementation of Sections 201 and 202's requirements related to just, reasonable, and nondiscriminatory rates. The precision of this newly crafted scheme leaves no room for any continued unbundling requirements. In the areas the new competitive market tests find to be competitive enough to eliminate price cap regulation, a residual unbundling requirement is clearly not "necessary" to ensure just and reasonable rates. By the same token, in the areas the

⁸³ Parties opposing forbearance from Section 251(c)(3)'s unbundling obligation may contend that, without the artificial competitive advantage that UNE pricing provides, their competitive model cannot be sustained. Even if that were true for *individual companies*, it is not an impediment to forbearance. As noted above, Section 251(c)(3)'s unbundling obligation was always intended as a catalyst to stimulate initial competition. Competitive realities have now moved far beyond the "market-opening" phase, and far beyond that phase's focus on intramodal providers. If UNE-based competition is fully displaced by facilities-based competition, that is not only *permissible*, but the very result contemplated by the 1996 Act. *Wireline Broadband Deployment Order*, 32 FCC Rcd at 11142 ¶ 32 (the Commission's goal is "not to impose the associated regulatory burdens on incumbent LECs indefinitely"). The 1996 Act did not hand UNE-based competitors a deed in perpetuity, and Commission competition policy has always protected competition and consumers, not specific competitors. *See, e.g., BDS Order*, 32 FCC Rcd at 3583 ¶ 290 ("Our statutory duty is to protect competition, not competitors."). Today, ubiquitous facilities-based competition from wireless and VoIP, coupled with the dwindling significance of UNEs and substantial ILEC line loss, make it imperative that the Commission shift its focus. It must, in short, act to ensure that perpetuation of the UNE regime "not impede the progress toward deployment of next-generation facilities for the many because of the reticence of an ever-shrinking few." *Wireline Broadband Deployment Order*, 32 FCC Rcd at 11142 ¶ 33.

⁸⁴ *See generally BDS Order*, 32 FCC Rcd at 3461 ¶ 4.

tests find are not yet fully competitive, the Commission plainly believes that its new, carefully calibrated scheme, including price caps and increased annual productivity offsets, is sufficient to ensure compliance with Sections 201 and 202. Moreover, as the Commission has emphasized, Sections 201 and 202 continue to apply, so BDS customers can bring Section 208 complaints to enforce compliance with those provisions. A continuing overlay of unbundling requirements is thus no longer “necessary” to ensure that these statutory standards are met in any scenario.

Resale (47 U.S.C. § 251(c)(4)). For similar reasons, continued enforcement of Section 251(c)(4)’s resale mandate also is unnecessary to ensure that rates and practices remain just, reasonable, and not unjustly or unreasonably discriminatory. Indeed, just as UNEs are an insignificant source of competition, so too is resale. As of 2016, resold ILEC lines comprised less than three percent of total fixed end-user retail connections.⁸⁵ Thus the elimination of Section 251(c)(4) resale requirements will have no material adverse effect on competition. And in all events, following forbearance, Section 251(b)(1) will continue to require all local exchange carriers to resell local exchange services without unreasonable or discriminatory conditions or limitations. And Sections 201 and 202, in turn, will further ensure that all carriers’ practices are just, reasonable, and not unjustly or unreasonably discriminatory.

There is no rationale for subjecting ILECs alone to special resale mandates, including government-mandated wholesale discounts. The market is highly competitive. ILECs, like their competitors, have incentives to deal reasonably with wholesale customers and to recover the heavy cost of network investment by getting more traffic on their networks. Revenue from a resold line is better than no revenue at all. This point is demonstrated perhaps most forcefully by

⁸⁵ See *FCC Voice Services Report Year-End 2016*, Table 1; see also *supra* note 48 (explaining how ILECs report resold lines).

the results of the Commission's 1996 decision to eliminate its wireless resale rule.⁸⁶ Far from evaporating, the mobile wireless resale marketplace has boomed: just one mobile virtual network operator (*i.e.*, reseller) – TracFone – boasted “approximately 26 million” subscribers at year-end 2016.⁸⁷

Duty to Negotiate and Section 252 Requirements (47 U.S.C. §§ 251(c)(1), (d)(3), 252(a)-(c), (d)(1), (d)(3), (e), (h)). Because the ILEC-specific obligations discussed above are no longer necessary to maintain just, reasonable, and non-discriminatory rates and terms, the various mandates set out in Sections 251 and 252 to facilitate these underlying Section 251(c)(3) and (4) requirements also are no longer needed. These include, specifically, the following:

- Section 251(c)(1)'s ILEC-specific duty to negotiate regarding Section 251(c) obligations.⁸⁸
- Section 251(d)(3)'s restraint on the Commission with respect to state commission actions, to the extent this provision would authorize states to reimpose unbundling and resale obligations from which the Commission has otherwise forborne.
- Section 252's mandates regarding –
 - negotiation/mediation/arbitration with respect to Section 251(c) obligations (47 U.S.C. §§ 252(a)-(c));
 - pricing for Section 251(c) unbundling and resale (47 U.S.C. §§ 252(d)(1) and (d)(3)); and

⁸⁶ See generally *Interconnection and Resale Obligations Pertaining to Commercial Mobile Radio Services*, First Report and Order, 11 FCC Rcd 18455 (1996); see also *Commencement of Five-year Period Preceding Termination of Resale Rule Applicable to Certain Covered Commercial Mobile Radio Service Providers*, Public Notice, 13 FCC Rcd 17427 (1998) (announcing the wind-down of the resale requirement pursuant to the Commission's previously noted determination).

⁸⁷ *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, Twentieth Report, 32 FCC Rcd 8968, 8976 ¶ 16 (2017) (“*Twentieth Wireless Competition Report*”). Cable providers, of course, never faced resale obligations of the type at issue here.

⁸⁸ This Petition does not seek forbearance from the Section 251(c)(1) obligation to negotiate in good faith with regard to Section 251(b)'s obligations. Notably, that obligation also applies to the requesting telecommunications carrier. See 47 U.S.C. § 251(c)(1).

- state approval and filing obligations with regard to interconnection agreements covering Section 251(c) requirements (47 U.S.C. §§ 252(e), (h)).

Explicitly forbearing from these obligations will make clear that states cannot rely on state law to impose Section 251(c)-like obligations that would be inconsistent with the Commission's decision to forbear from these obligations. In addition, the Commission should clarify that (1) ILECs may implement the forbearance relief upon the effective date that the Commission specifies, which may include a reasonable transition period, as discussed below; and (2) states may not impose onto commercial negotiations Section 252-like requirements or reimpose unbundling and resale requirements that would run counter to forbearance relief granted. Forbearance is warranted precisely because the market is sufficiently competitive to make the obligations at issue, including forced sharing of ILEC services or facilities at wholesale discounts, counterproductive.

C. Enforcement of These Unbundling and Resale Requirements Is Not Necessary to Protect Consumers.

For the same reasons that Section 251(c)(3) and (4) and the associated requirements in Sections 251 and 252 are not necessary to ensure just, reasonable, and nondiscriminatory charges and practices, they are not necessary to protect consumers. Indeed, consumer interests will be advanced by forbearance, because forbearance will heighten competition by promoting the deployment of fiber networks and next-generation services that customers increasingly demand and require. This is true in both retail and wholesale markets.

D. Forbearance from Section 251(c) Unbundling and Resale Requirements Is In the Public Interest.

The Act directs that, in assessing the effect of forbearance on the public interest, "the Commission shall consider whether forbearance from enforcing the provision or regulation will promote competitive market conditions, including the extent to which such forbearance will

enhance competition among providers of telecommunications services.”⁸⁹ The Commission has repeatedly stated that, where feasible, competition is a better mechanism than regulation for advancing the public interest and therefore can support a finding that this prong has been satisfied.⁹⁰ Such is the case here. Forbearance will promote competition by eliminating incentives to rely on synthetic competition at the expense of genuine, facilities-based competition, while reducing administrative compliance costs, and freeing capital for use in deploying broadband networks and advanced services to consumers.

As demonstrated in the attached analysis prepared by Economists Incorporated and CMA Strategy Consulting,⁹¹ the benefits to consumers and the economy would be substantial. Over ten years, consumers would conservatively benefit in excess of \$1.0 billion, possibly as much as \$5.9 billion in reduced prices.⁹² Capital investment would rise by up to \$1.8 billion.⁹³ New investments would directly create between approximately 2,200 and 3,200 new jobs per year,

⁸⁹ 47 U.S.C. § 160(b).

⁹⁰ See, e.g., *2013 USTelecom Forbearance Order*, 28 FCC Rcd at 7651 ¶ 41 (finding that forbearance would promote competition and thus be consistent with the public interest, and explaining that “eliminating unnecessary regulation will generally reduce providers’ costs and, in turn, benefit consumers through lower rates and/or more vibrant competitive offerings.”); see also *Omaha Forbearance Order*, 20 FCC Rcd at 19454 ¶ 77 (forbearance is appropriate where “the costs of unbundling under section 251(c)(3) are outweighed by the benefits of such unbundling,” and forbearance “furthers another of Congress’s primary aims in the 1996 Act – to deregulate telecommunications markets to the extent possible”).

⁹¹ See generally Hal Singer & Kevin Caves, Economists Incorporated, and Ed Naef & Micah Sachs, CMA Strategy Consulting, *Assessing the Impact of Forbearance from 251(c)(3) on Consumers, Capital Investment, and Jobs* (May 2018), attached hereto as Appendix B.

⁹² The analysis estimates potential customer savings of \$5.9 billion if all end-customers migrate to next-generation services in Year 1 of a 10-year forecast. *Id.* at 19-21. Over the same period, consumers would enjoy an additional surplus of at least \$29 million resulting from higher quality services. *Id.* at 23.

⁹³ *Id.* at 2, 20.

and spillover effects would create approximately an additional 4,400 to 6,400 jobs per year.⁹⁴

Overall, forbearance would likely increase the nation's Gross Domestic Product by between \$359 million and \$542 million annually over ten years.⁹⁵

The Commission has previously recognized that it has an "obligation to remove costly, overly broad, and outmoded requirements and burdens in response to changes in markets and regulatory needs."⁹⁶ In this instance, the application of regulations that have outlived their purpose to some but not all similarly situated providers places a thumb on the competitive scale and distorts the market, ultimately to the detriment of consumers. The Commission has recognized that "it is in the public interest to place intermodal competitors on an equal regulatory footing by ending unequal regulation of services provided over different technological platforms."⁹⁷ By removing this regulatory burden that the ILECs' facilities-based competitors do not face, the Commission would take another step toward regulatory parity and allow competition, unimpeded by unnecessary regulation, to continue to deliver benefits to the marketplace.

III. THE COMMISSION SHOULD FORBEAR FROM ENFORCEMENT OF SECTION 272(E)(1) OF THE ACT AND SECTION 64.1903 OF ITS RULES.

The Commission should also forbear from enforcing Section 272(e)(1)'s RBOC-specific time interval requirements for affiliate service requests and the long-distance separate affiliate

⁹⁴ *Id.* at 23-25 & Figure 12.

⁹⁵ *Id.* at 29 & Figure 14.

⁹⁶ 2013 *US Telecom Forbearance Order*, 28 FCC Rcd at 7656 ¶ 55; *see also Omaha Forbearance Order*, 20 FCC Rcd at 19454 ¶ 77 ("While the costs of such regulatory intervention [*i.e.*, Section 251(c)(3) unbundling] may be warranted in order to foster competitive entry into the local exchange and exchange access markets where such competition would not otherwise be generated, we find that these costs are unwarranted and do not serve the public interest once local exchange and exchange access markets are sufficiently competitive ...").

⁹⁷ *Omaha Forbearance Order*, 20 FCC Rcd at 19455 ¶ 78.

requirement for independent ILECs set out in Section 64.1903 of the Commission's rules.⁹⁸ Specifically, Section 272(e)(1) requires that an RBOC "fulfill any requests from an unaffiliated entity for telephone exchange service and exchange access within a period no longer than the period in which it provides such ... service ... to itself or to its affiliates."⁹⁹ Section 64.1903 of the Commission's rules imposes structural separation requirements on independent ILECs that provision long-distance services.¹⁰⁰ In addition, the Commission should clarify that other related obligations will also be terminated. In particular, although the *Part 32 Order* eliminated the Section 272(e)(3) imputation/affiliate pricing requirements, equivalent requirements were imposed in the *2013 USTelecom Forbearance Order* as a condition to relief from the Section 64.1903 separate affiliate requirements. Similarly, in its *Section 272 Sunset Order* and in the *Qwest Section 272 Sunset Forbearance Order* that preceded it, the Commission imposed (or RBOCs voluntarily agreed to) certain special access performance metrics reporting obligations as conditions to the relief granted therein from dominant carrier regulation post-Section 272 sunset.¹⁰¹ The Commission should clarify that its grant of forbearance applies to these

⁹⁸ 47 U.S.C. § 272(e)(1); 47 C.F.R. § 64.1903. The Commission concluded that these mandates should not apply to independent price cap carriers that agreed to the same conditions that were applied to the RBOCs and their independent ILEC affiliates in the *Section 272 Sunset Order* – see *2013 USTelecom Forbearance Order*, 28 FCC Rcd at 7691-93 ¶¶ 142-48 (citing *Section 272(f)(1) Sunset of the BOC Separate Affiliate and Related Requirements*, Report and Order and Memorandum Opinion and Order, 22 FCC Rcd 16440, 16488-90 ¶¶ 97-98 (2007) ("*Section 272 Sunset Order*")) – but declined at the time to provide similar relief to rate-of-return carriers offering facilities-based in-region, interexchange, and interstate long-distance services. *2013 USTelecom Forbearance Order*, 28 FCC Rcd at 7693 ¶ 149. Forbearance from Section 64.1903 would also eliminate any requirement that an independent ILEC abide by Section 272(e)(1)'s mandates.

⁹⁹ 47 U.S.C. § 272(e)(1).

¹⁰⁰ 47 C.F.R. § 64.1903.

¹⁰¹ *Section 272 Sunset Order*, 22 FCC Rcd at 16487-89 ¶¶ 96-98 & n.283; *Petition of Qwest Communications International Inc. for Forbearance from Enforcement of the Commission's Dominant Carrier Rules As They Apply After Section 272 Sunsets*, Memorandum Opinion and

requirements as well, and that, by forbearing from Section 272(e)(1), it has eliminated the last remaining Section 272 obligations.¹⁰²

A. Enforcement of These Requirements Governing Affiliate Relationships Is Not Necessary to Ensure Charges and Practices Are Just, Reasonable, and Not Unjustly or Unreasonably Discriminatory.

Insofar as Section 272(e)(1) relates to installation intervals and not rates, forbearance from this provision should have no impact on charges. Thus, the only question is whether Section 272(e)(1) of the Act and Section 64.1903 of the Commission's rules are needed to prevent unjust, unreasonable or unjustly discriminatory practices. The answer is clearly no. Both the statute and the rule are premised on arcane notions about the separation of local and long-distance services and the disproportionate market power that RBOCs and other ILECs are alleged to have with each. They should be eliminated.

With respect to Section 272(e)(1), the Commission previously denied forbearance, citing insufficient data in the record at that time specific to the long-distance market segment.¹⁰³ In particular, the Commission stated that the record "contains little data on the size or composition

Order, 22 FCC Rcd 5207, 5240-41 ¶¶ 64-66 (2007) ("*Qwest Section 272 Sunset Forbearance Order*").

¹⁰² The Commission has always recognized that Section 272 would eventually become unnecessary. *Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, As Amended*, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 21905, 21910 ¶ 6 (1996) (stating that Section 272 was "intended both to protect subscribers to BOC monopoly services, such as local telephony, against the potential risk of having to pay costs incurred by the BOCs to enter competitive markets, such as interLATA services ... and to protect competition in those markets from the BOCs' ability to use their existing market power in local exchange services to obtain an anticompetitive advantage in those new markets the BOCs seek to enter"); see also *id.* at 21911 ¶ 9 ("In enacting section 272, Congress recognized that the local exchange market will not be fully competitive immediately upon its opening. Congress, therefore, imposed in section 272 a series of separate affiliate requirements applicable to the BOCs' provision of certain new services and their engagement in certain new activities.").

¹⁰³ 2015 USTelecom Forbearance Order, 31 FCC Rcd at 6180-81 ¶¶ 42-43.

of long-distance markets that serve business customers.”¹⁰⁴ Those data are now available and they compel forbearance from the requirements of Section 272(e)(1). First, the Commission itself has recognized that ILECs “no longer presumptively assert market power” in the provision of interstate switched access services, and that “[c]onsumers and businesses rely less than ever on local telephone switches – and, accordingly, on interstate switched access – to communicate over long distances.”¹⁰⁵ That is particularly the case for enterprise customers, for which the Commission found the earlier record lacking. Indeed, these relatively sophisticated purchasers of telecommunications services are likely even less apt than consumers to purchase local and long-distance services from separate companies. Rather, enterprise customers typically purchase bundles that include local, long-distance, and often broadband or wireless services as well, rendering Section 272(e)(1) irrelevant in this space.

With respect to BDS services, the Commission has likewise recognized that competition is robust, pointing out in the *BDS Order*, “[t]o a large extent in the business data services market, the competition envisioned in the Telecommunications Act of 1996 has been realized.”¹⁰⁶ With multiple providers to choose from, enterprise customers no longer depend on RBOC or independent ILEC access to long-distance services. And again, consistent with the overarching marketplace trend, enterprise customers almost invariably purchase bundles of service, including local and long-distance service as well broadband internet access and other data connectivity. In short, with respect to both switched and BDS services, 272(e)(1) and Section 64.1903 of the

¹⁰⁴ *Id.* at 6180-81 ¶ 42.

¹⁰⁵ *Technology Transitions Declaratory Ruling*, 31 FCC Rcd at 8286-8302 ¶¶ 8-59; *see also id.* ¶ 19 (finding that developments including the shift away from the calling-party’s-network-pays approach to intercarrier compensation had “restructured the marketplace in which incumbent LECs provide interstate switched access services so as to deny them market power”).

¹⁰⁶ *BDS Order*, 32 FCC Rcd at 3462 ¶ 5.

Commission's rules are anachronisms. And if there were lingering concerns about possible discrimination, Section 202 continues to apply and will protect against the remote possibility of discrimination by RBOCs or independent ILECs in provisioning long-distance services. For these reasons, Section 10 compels the Commission to exercise its forbearance authority and grant relief with respect to these provisions.

B. Enforcement of These Requirements Is Not Necessary to Protect Consumers.

The data also demonstrate that the “enforcement of these provisions is not needed to protect consumers.”¹⁰⁷ As noted above, consumers and enterprise customers typically purchase packages of local and long-distance services. Thus, the very premise of these provisions – that competing long-distance service providers must rely on RBOCs or independent ILECs for exchange access service – no longer applies. Moreover, given that competitors have eclipsed incumbents in the provision of both consumer and enterprise services, RBOCs and independent ILECs no longer have the ability to discriminate in their provision of exchange access services in favor of their own long-distance operations. The idea that these carriers would do so flies in the face of reality. Under the circumstances, there is no reason why Section 202 is not sufficient to protect against a theoretical threat of discrimination or unreasonable practices.

C. Forbearance From These Requirements Is In the Public Interest.

Finally, the proffered evidence of competition in the marketplace should compel the Commission to conclude that forbearance from Section 272(e)(1) of the Act and Section 64.1903 of the Commission's rules is firmly in the public interest.¹⁰⁸ There is no good basis for forcing RBOCs and independent ILECs, but not their similarly situated competitors, to devote time and resources to complying with mandates that are virtually never relevant. Stand-alone long-

¹⁰⁷ 47 U.S.C. § 160(a)(2).

¹⁰⁸ *Id.* §§ 160(a)(3), (b).

distance service no longer exists as a separate marketplace, and customers have ample choices of local providers in all events; thus, the risks of anticompetitive behavior these rules were intended to remedy have been eliminated. Forbearance, therefore, is warranted.

IV. THE COMMISSION SHOULD FORBEAR FROM ENFORCEMENT OF SECTION 271(C)(2)(B)(III).

The Commission should forbear from enforcing the Section 271(c)(2)(B)(iii) requirement that RBOCs provide nondiscriminatory access to poles, ducts, conduits, and rights-of-way at just and reasonable rates in accordance with Section 224 – an obligation that is wholly redundant of Section 224 itself. Section 224 is a technologically neutral provision that imposes upon *all* carriers – including RBOCs – a duty to “provide a cable television system or any telecommunications carrier with nondiscriminatory access to any pole, duct, conduit, or right-of-way owned or controlled by it.”¹⁰⁹ Indeed, the Commission recently revised its regime to further promote competitive neutrality, finding that Sections 224 and 251(b)(4) created a “reciprocal system of infrastructure access rules in which incumbent LECs ... are guaranteed access to poles owned or controlled by competitive LECs and *vice versa*.”¹¹⁰ Because the Section 10 criteria otherwise are met, forbearance from enforcement of Section 271(c)(2)(B)(iii) is warranted.¹¹¹

¹⁰⁹ RBOCs also comply with the applicable state requirements of any state that elects to regulate directly poles, ducts, conduits, and rights-of-way. *See* 47 U.S.C. § 224(c)(1) (“nothing in [Section 224] shall be construed to apply to, or to give the Commission jurisdiction with respect to the rates, terms, and conditions, or access to poles, ducts, conduits and rights-of-way as provided in [Section 224(f)], for pole attachments in any case where such matters are regulated by a State.”). To date, 20 states plus the District of Columbia have so certified. *See States That Have Certified That They Regulate Pole Attachments*, Public Notice, 25 FCC Rcd 5541 (WCB 2010).

¹¹⁰ *Wireline Infrastructure Order*, 32 FCC Rcd at 11134 ¶ 15.

¹¹¹ Section 271 has been “fully implemented,” satisfying the language in 47 U.S.C. § 160(d). *Petition for Forbearance of the Verizon Telephone Companies Pursuant to 47 U.S.C. § 160(c) et al.*, Memorandum Opinion and Order, 19 FCC Rcd 21496, 21503-04 ¶¶ 15-17 (2004); *Omaha Forbearance Order*, 20 FCC Rcd at 19439 ¶¶ 51-52 & n.131.

A. Enforcement of Section 271(c)(2)(B)(iii) Is Not Necessary to Ensure That Charges and Practices Are Just and Reasonable and Not Unjustly or Unreasonably Discriminatory.

RBOC-specific checklist item 3, which mandates nondiscriminatory access to poles, ducts, conduits, and rights-of-way in accordance with Section 224,¹¹² is not necessary to ensure just and reasonable rates and practices, particularly where Section 224 or analogous state requirements will continue to apply. RBOCs are subject to the same access obligations under Section 224, as well as the continuing general obligation to provide service at just, reasonable, and not unreasonably discriminatory rates, terms, and conditions pursuant to Sections 201 and 202 of the Act.¹¹³ The Commission has cited the presence of other safeguards as a significant consideration supporting forbearance grants.¹¹⁴ For example, in the *2015 USTelecom Forbearance Order*, which granted relief from other checklist items that duplicated Section 251 requirements, the Commission explained that “forbearance ... in light of other still-applicable regulatory requirements is reasonable and appropriate while both retaining necessary safeguards and reducing costs.”¹¹⁵

In the same forbearance decision, the Commission acknowledged that checklist item 3 (Section 271(c)(2)(B)(iii)) imposes obligations “concurrent” with those of Section 224, just as

¹¹² 47 U.S.C. § 271(c)(2)(B)(iii) (requiring “[n]ondiscriminatory access to the poles, ducts, conduits, and rights-of-way owned or controlled by the Bell operating company at just and reasonable rates in accordance with the requirements of section 224”).

¹¹³ 47 U.S.C. §§ 201, 202.

¹¹⁴ See, e.g., *2013 USTelecom Forbearance Order*, 28 FCC Rcd at 7675-76 ¶¶ 107-08 (granting forbearance from certain cost assignment rules where conditions imposed on the forbearance and other still applicable rules and requirements were adequate to meet the Commission’s needs); *id.* at 7675 ¶¶ 104-06 (granting forbearance from certain reporting requirements in light of other still-applicable regulatory requirements and conditions on forbearance); *id.* at 7691-92 ¶¶ 142-48 (forbearing from separate affiliate requirements given other still-applicable regulatory requirements and conditions on forbearance).

¹¹⁵ *2015 USTelecom Forbearance Order*, 31 FCC Rcd at 6168 ¶ 17.

other Section 271 checklist items imposed obligations concurrent with those of Section 251.¹¹⁶ The Commission nevertheless denied relief as to checklist item 3, based primarily on its conclusions that Section 224 does not allow ILECs to reduce their wholesale access obligations via a finding of non-impairment and that checklist item 3 provided “an additional” mechanism to enforce Section 224.¹¹⁷

Those requirements (or a particular state’s superseding mandates) will survive even if the Commission were to grant this request. The Commission has, moreover, ensured the effectiveness of Section 224 through a rigorous enforcement mechanism that renders checklist item 3 unnecessary. It has broad authority to “enforce[e] any determinations resulting from complaint procedures” and to “take such action as it deems appropriate and necessary, including issuing cease and desist orders.”¹¹⁸ Those enforcement procedures, which were “established in 1978, and have been refined through rulemakings and enforcement actions,”¹¹⁹ are “adequate to establish just and reasonable rates, terms, and conditions for pole attachments.”¹²⁰

USTelecom merely seeks forbearance from the redundant access obligation placed specifically on RBOCs via checklist item 3. The checklist was designed to ensure that RBOCs had opened local markets to competition before being granted authority to offer in-region long-distance service; it has served that purpose and has long since outlived its usefulness. The Commission granted its last application to authorize RBOC long-distance entry nearly fifteen

¹¹⁶ *Id.* at 6170 ¶ 19.

¹¹⁷ *Id.* at 6170 ¶¶ 19-20; *see also Title II Order*, 30 FCC Rcd at 5854 ¶ 518 n.1593.

¹¹⁸ 47 U.S.C. § 224(b)(1).

¹¹⁹ *Amendment of Commission’s Rules and Policies Governing Pole Attachments*, Consolidated Partial Order on Reconsideration, 16 FCC Rcd 12103 ¶ 10 (2001).

¹²⁰ *Implementation of Section 703(e) of the Telecommunication Act of 1996*, Report and Order, 13 FCC Rcd 6777 ¶ 16 (1998).

years ago,¹²¹ and the RBOC/ILEC-dominated world contemplated by the checklist has virtually disappeared in the intervening years. Other more broadly applicable protections, such as Section 224, thus are more than sufficient to protect consumers and ensure parity in the marketplace.

Nor do RBOCs enjoy any lingering advantages with respect to access to poles. ILEC pole ownership levels have declined relative to those of electric utilities. In 2011, the Commission found that ILECs as a whole owned just 25-30 percent of poles, whereas electric utilities owned about 65-70 percent, “compared to historical ownership levels that that were closer to parity” in the 1970s.¹²² The trend away from ILEC/RBOC pole ownership has only continued since that finding. The 2017 USTelecom Survey revealed that in 46 states surveyed, ILECs attach to approximately 13.9 million investor-owned utility (“IOU”) poles, whereas IOUs attach to only 4.6 million ILEC poles.¹²³ That three-to-one advantage in pole ownership is even higher than the threshold found recently to be evidence of an ILEC’s inferior bargaining position.¹²⁴ Accordingly, any prior cause for concern about ILECs’ significant pole ownership

¹²¹ *Application by Qwest Communications International Inc. for Authorization To Provide In-Region, InterLATA Services in Arizona*, Memorandum Opinion and Order, 18 FCC Rcd 25504, 25505 ¶ 2 (2003); see also *Section 272 Sunset Order*, 22 FCC Rcd at 16447 ¶ 12 (noting that RBOCs had obtained in-region interLATA service authority in all of their regions).

¹²² *Implementation of Section 224 of the Act; A National Broadband Plan for Our Future*, Report and Order and Order on Reconsideration, 26 FCC Rcd 5240, 5328-29 ¶ 206 & n.617 (2011) (citing statistics from individual companies and noting a congressional finding from 1977 that power utilities controlled 53 percent of poles).

¹²³ *USTelecom Pole Attachment Rate and Ownership Report*, Nov. 21, 2017, at 7, attached to Letter from Kevin G. Rupy, Vice President, Law & Policy, USTelecom, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 17-84 (filed Nov. 21, 2017).

¹²⁴ *Verizon Virginia, LLC and Verizon South, Inc., Complainants, v. Virginia Electric and Power Company d/b/a Dominion Virginia Power, Respondent*, Order, 32 FCC Rcd 3750, 3756-57 ¶ 13 (MDRD 2017) (“Recognizing the Commission’s concern that an incumbent LEC’s minority pole ownership status may negatively impact the incumbent LEC’s bargaining position, we find that Dominion’s nearly two-to-one pole ownership advantage, along with the significant disparity in the per-pole rates charged to each party, constitutes probative evidence of Verizon’s inferior bargaining position relative to Dominion.”).

and any corresponding potential for anticompetitive behavior by ILECs have been considerably diminished. Under these circumstances, there is no reason to hold RBOCs to a special standard not applicable to their competitors.

The evaporating significance of checklist item 3 is underscored by the lack of any reported problems.¹²⁵ Indeed, the Commission has not released a decision adjudicating a complaint brought under Section 271(d)(6)'s specific checklist complaint procedures since 2002 – and it denied that one, which in any event did not involve access to poles under checklist item 3.¹²⁶ And the Commission has never acted under Section 271(d)(6) to suspend or revoke an RBOC's Section 271 approval in any state.¹²⁷ As to Section 224 enforcement, between 2011 and 2017, the Commission's Enforcement Bureau released ten decisions concerning Section 224 pole attachment complaints, and in nine of those, the complaint was dismissed because the parties had reached a settlement.¹²⁸ Notably, the defendants in eight of those ten cases were *not* ILECs. Thus, Section 224 clearly provides the Commission with the tools it needs to ensure competitive access to poles, obviating the need for checklist item 3's protections.

B. Enforcement of Section 271(c)(2)(B)(iii) Is Not Necessary for the Protection of Consumers.

Just as checklist item 3 is not necessary to guard against unreasonable or unreasonably discriminatory rates or practices, it also is “not necessary to protect consumers.”¹²⁹ As described

¹²⁵ 2015 *USTelecom Forbearance Order*, 31 FCC Rcd at 6169 ¶ 18 n.62 (“[S]ection 271(d)(6) has not been a frequent enforcement mechanism for competitive LECs.”).

¹²⁶ See *WorldCom, Inc. v. Verizon New England, et al.*, Memorandum Opinion and Order, 17 FCC Rcd 15115 (2002).

¹²⁷ 2015 *USTelecom Forbearance Order*, 31 FCC Rcd at 6168 ¶ 17 n.56.

¹²⁸ Section 224 pole attachment orders are posted on the Commission's website at <https://www.fcc.gov/enforcement/orders/1840>.

¹²⁹ 47 U.S.C. § 160(a)(2).

above, Section 271(c)(2)(B)(iii) is a superfluous requirement that unnecessarily duplicates the market-opening provisions of Section 224 and analogous state mandates, and thus provides no additional tangible benefit. To the contrary, its continued existence results in unnecessary burdens for RBOCs that do not apply to their competitors.

C. Forbearance From Applying Section 271(c)(2)(B)(iii) Is Consistent With the Public Interest.

Given the state of competition, subjecting RBOCs to duplicative or additional requirements is inappropriate and distorts the marketplace, harming consumer interests as a general matter. For these reasons, forbearance from Section 271(c)(2)(B)(iii) is consistent with the public interest under Section 10(a)(3).¹³⁰ In addition to being redundant, continued application of Section 271(c)(2)(B)(iii) imposes additional burdens. In particular, its lingering presence drains valuable compliance time and resources from RBOCs alone. Here, forbearance would eliminate these burdens and costs and restore symmetrical regulation. The Commission did not previously consider such specific evidence in connection with checklist item 3.¹³¹ Its previous decision not to grant forbearance therefore does not control here.

V. THE COMMISSION SHOULD ALLOW FOR A BRIEF TRANSITION PERIOD SIMILAR TO OTHER PREVIOUS FORBEARANCE RELIEF.

USTelecom recognizes that carriers may need a reasonable period of time to transition their embedded base of UNEs to other services/arrangements.¹³² USTelecom proposes the following parameters to govern the embedded base of UNEs:¹³³

¹³⁰ 47 U.S.C. § 160(a)(3).

¹³¹ 2015 USTelecom Forbearance Order, 30 FCC Rcd at 6170 ¶ 22.

¹³² The Commission has adopted similar transition periods in the past. *See, e.g., Triennial Review Remand Order*, 20 FCC Rcd at 2536-37 ¶ 5.

¹³³ No transitional mechanism is necessary for Section 251(c)(4) resale arrangements.

- UNEs ordered prior to the effective date of the order (“embedded base”) will be provided via current interconnection agreements and subject to this transition. After the effective date of the order, new orders for service shall be addressed via commercial negotiations or tariffed services where available.
- CLECs may keep in place any of their embedded base of UNEs along with collocation arrangements necessary for access to such UNEs until 18 months from the effective date of the grant of forbearance.¹³⁴
- ILECs may increase rates for their embedded base of UNEs by up to 15 percent on the effective date of the grant of forbearance.
- CLECs must disconnect, without penalty, or transition their embedded base of UNEs to alternative facilities or arrangements within 18 months of the effective date of the grant of forbearance. ILECs may convert any UNEs that remain in place 18 months after the effective date of the order to alternative arrangements offering comparable functionality at the ILEC’s then-existing market rates.
- Should the parties’ interconnection agreement require the parties to negotiate an amendment to give effect to the forbearance grant, the embedded UNE rates will be subject to true up to the applicable ILEC rate increase (up to 15 percent) upon the amendment of the relevant interconnection agreements.
- The transition is a default process and carriers remain free to negotiate alternative arrangements superseding the transition.

¹³⁴ CLECs’ ability in this respect necessarily would remain subject to existing rules governing the process for retiring copper facilities and making other network changes. *See* 47 U.S.C. § 251(c)(5); 47 C.F.R. § 51.325 *et seq.*

CONCLUSION

For the reasons discussed above, the Commission should grant forbearance from application of the requirements discussed herein. Such forbearance will remove barriers to infrastructure investment, promoting deployment and competition in the provision of truly high-speed services and benefiting the American public.

Respectfully submitted,

By: /s/ Jonathan Banks

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May 4, 2018

APPENDIX A

47 C.F.R. § 1.54(a)(1); 47 C.F.R. § 1.54(e)(3)(i)

USTelecom seeks forbearance (to the extent forbearance has not previously been granted) from statutory provisions, rules, or requirements set forth in the table below.

Section 251(c)(3) and (4) and Associated Section 251 and 252 Obligations

Statutory Provision, Rule, or Requirement	As applied to
47 U.S.C. § 251(c)(3) (unbundling) and any corresponding obligations under 47 C.F.R. §§ 51.301-51.321, 51.325-51.335	All ILECs
47 U.S.C. § 251(c)(4) (resale) and any corresponding obligations under 47 C.F.R. §§ 51.601-51.617	All ILECs
47 U.S.C. § 251(c)(1) and any corresponding obligations under 47 C.F.R. § 51.301, regarding the duty to negotiate insofar as they implement Section 251(c)(3) and (4), and only to that extent	All ILECs and “requesting telecom carriers”
47 U.S.C. § 251(d)(3), to the extent this provision would authorize states to reimpose unbundling and resale obligations from which the Commission has otherwise forbore	All ILECs
47 U.S.C. §§ 252(a)-(c) regarding negotiation/mediation/arbitration, insofar as they implement Section 251(c)(3) and (4), and only to that extent	All ILECs
47 U.S.C. §§ 252(d)(1) and (d)(3) regarding pricing for Section 251(c) unbundling and resale and any corresponding obligations under 47 C.F.R. §§ 51.501-51.515, insofar as they implement Section 251(c)(3) and (4), and only to that extent	All ILECs
47 U.S.C. §§ 252(e) and (h) regarding state approval and filing obligations with regard to interconnection agreements covering Section 251(c) requirements, insofar as they implement Section 251(c)(3) and (4), and only to that extent, as well as corresponding obligations under 47 C.F.R. §§ 51.303, 51.801-51.809	All ILECs

Section 271 Requirements for Access to Poles, Ducts, Conduits, and Rights-of-Way

Statutory Provision, Rule, or Requirement	As applied to
47 U.S.C. § 271(c)(2)(B)(iii) and any and all Commission orders requiring compliance with this subsection	All RBOCs

Section 272

Statutory Provision, Rule, or Requirement	As applied to
47 U.S.C. § 272(e)(1), and any related conditions imposed by prior Commission orders granting partial forbearance, including <i>Petition of USTelecom for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain Legacy Telecommunications Regulations</i> , Memorandum Opinion and Order and Report and Order Further Notice of Proposed Rulemaking and	All RBOCs

Second Further Notice of Proposed Rulemaking, 28 FCC Rcd 7627 (2013), <i>Sunset of the BOC Separate Affiliate and Related Requirements</i> , Report and Order and Memorandum Opinion and Order, 22 FCC Rcd 16440 (2007), and <i>Petition of Qwest Communications International Inc. for Forbearance from Enforcement of the Commission's Dominant Carrier Rules As They Apply After Section 272 Sunsets</i> , Memorandum Opinion and Order, 22 FCC Rcd 5207 (2007)	
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Rule 64.1903

Statutory Provision, Rule, or Requirement	As applied to
All remaining obligations under 47 C.F.R. § 64.1903, and any related conditions imposed by prior Commission orders granting partial forbearance, including <i>Petition of USTelecom for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain Legacy Telecommunications Regulations</i> , Memorandum Opinion and Order and Report and Order Further Notice of Proposed Rulemaking and Second Further Notice of Proposed Rulemaking, 28 FCC Rcd 7627 (2013)	All ILECs

47 C.F.R. § 1.54(a)(2)

USTelecom requests that this forbearance relief be applied as a class to each carrier or group of carriers, as specified for each provision in the table above.

47 C.F.R. § 1.54(a)(3)

USTelecom requests that forbearance relief be applied to all covered services, including but not limited to interstate and international voice and data services, whether provided to the consumer or business markets.

47 C.F.R. § 1.54(a)(4)

USTelecom requests that forbearance relief apply in all regions across the entire United States and all territories.

47 C.F.R. § 1.54(a)(5)

N/A.

47 C.F.R. § 1.54(c)

Pursuant to the requirements of Section 1.54(c) of the Commission's rules, USTelecom notes that it has participated in the following proceedings pending before the Commission, in which it has taken positions regarding regulatory relief from the subject rules and regulations that are identical to, or comparable to, the relief sought in this Petition:

- *Business Data Services in an Internet Protocol Environment*, WC Docket No. 16-143.
- *Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) from Enforcement of Obsolete ILEC Legacy Regulations That Inhibit Deployment of Next-Generation Networks*, WC Docket No. 14-192.
- *Technology Transitions*, GN Docket No. 13-5.
- *Petition of USTelecom for Declaratory Ruling that Incumbent Local Exchange Carriers Are Non-Dominant in the Provision of Switched Access Services*, WC Docket No. 13-3.
- *Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) from Enforcement of Certain Legacy Telecommunications Regulations*, WC Docket No. 12-61.
- *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 11-121.
- *Lifeline and Link Up Reform and Modernization*, WC Docket No. 11-42.
- *Connect America Fund*, WC Docket No. 10-90.
- *Special Access for Price Cap Local Exchange Carriers; AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, WC Docket No. 05-25, RM-10593.
- *Notice of Inquiry Concerning a Review of the Equal Access and Nondiscrimination Obligations Applicable to Local Exchange Carriers*, CC Docket No. 02-39.
- *Biennial Regulatory Review Separate Affiliate Requirements of Section 64.1903 of the Commission's Rules*, CC Docket No. 00-175.

In addition to these pending proceedings, USTelecom has routinely participated in the Commission's biennial reviews of its telecommunications regulations in which it has advocated for the elimination of various regulations that are the subject of this Petition.

47 C.F.R. § 1.54(e)(3)(i)

The scope of relief sought is as indicated above.

47 C.F.R. § 1.54(e)(3)(ii)

Market analysis and supporting data supporting the entirety of the relief sought in this Petition is set forth in Hal Singer & Kevin Caves, Economists Incorporated, and Ed Naef & Micah Sachs, CMA Strategy Consulting, *Assessing the Impact of Forbearance from 251(c)(3) on Consumers, Capital Investment, and Jobs* (May 2018), attached hereto as Appendix B. Additional market

analysis and supporting data is included both in the Background section of the Petition and in each discrete request for Section 10 forbearance, as appropriate.

47 C.F.R. § 1.54(e)(3)(iii)

The paper by Hal Singer & Kevin Caves, Economists Incorporated, and Ed Naef & Micah Sachs, CMA Strategy Consulting, *Assessing the Impact of Forbearance from 251(c)(3) on Consumers, Capital Investment, and Jobs* (May 2018), is attached hereto as Appendix B.

Appendix B

Hal Singer & Kevin Caves, Economists Incorporated, and
Ed Naef & Micah Sachs, CMA Strategy Consulting,
*Assessing the Impact of Forbearance from 251(c)(3) on
Consumers, Capital Investment, and Jobs*
(May 2018)

Assessing the Impact of Forbearance from 251(c)(3) on Consumers, Capital Investment, and Jobs

May 2018

Hal Singer, Economists Incorporated

Kevin Caves, Economists Incorporated



Ed Naef, CMA Strategy Consulting

Micah Sachs, CMA Strategy Consulting



Dr. Singer is a Principal at Economists Incorporated, an Adjunct Professor at Georgetown's McDonough School of Business, and a Senior Fellow at George Washington's Institute for Public Policy. Dr. Caves is a Vice President at Economists Incorporated. Ed Naef is a Partner at CMA Strategy Consulting, and Micah Sachs is a Principal at CMA Strategy Consulting. The authors have extensive experience with assessing the market implications of regulatory action. The views expressed here are those of the authors and not those of their affiliated academic institutions. Funding of this study was provided by USTelecom.

Executive Summary

This paper assesses the likely economic effects of elimination (or “forbearance”) of the FCC’s regulation of unbundled network elements (“UNEs”), which are leased from incumbent telcos by third parties at rates set by state regulators and used to provide legacy voice and data services to end-customers, typically businesses. These third-party service providers buy UNEs to lessen their need to build their own networks or in lieu of leasing equivalent services at commercial wholesale rates. Accordingly, we refer to these third parties as “asset-light service providers.”

The paper models two effects of forbearance: one, the anticipated consumer savings and performance benefits (measured as “consumer surplus”) from the replacement of UNE-based services with next-generation services, and two, the additional jobs and other economic benefits new investment in facility-based service providers’ networks will create.

We estimate that forbearance will have a net-positive impact on end-customers, job creation and the economy as a whole. End-customers will benefit from reduced pricing and improved performance from their next-generation telecommunications services, while new job-creating investment is expected to occur due to the migration of revenues from asset-light service providers to facility-based service providers whose business models are more focused on owning—and investing in—their own networks. Customers would experience a net savings of \$1.0 billion over 10 years, plus an additional consumer surplus of \$29 million due to receiving higher-quality services. While some customers who remain on legacy services will pay higher prices for equivalent services, this negative impact is outweighed by the larger savings experienced by customers who migrate to next-generation services. Additionally, incremental investment in facility-based service providers’ networks attributable to forbearance could create up to 6,352 direct and indirect jobs annually, due to up to \$1.8 billion in new capital investment over ten years, based on historical capital-intensity benchmarks. Overall, forbearance has the potential to increase GDP by \$5.4 billion over 10 years.

As the FCC found in its Business Data Services Order,¹ the market for data services offered to businesses is now broadly competitive. In this paper, we provide additional, newer evidence of a highly competitive business services market, including data that shows traditional incumbent providers (“ILECs”) now only provide a minority of business voice lines. As the BDS Order also

¹ Federal Communications Commission, “Report and Order in the Matter of Business Data Services in an Internet Protocol Environment, Technology Transitions, Special Access for Price Cap Local Exchange Carriers, and AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services.” FCC 17-43. Henceforth, *BDS Order*. Released on 04/28/2017.

demonstrated, the legacy TDM services offered via UNEs have suitable and often superior substitutes in the form of next-generation dedicated services (such as Ethernet and SIP trunks) and “best efforts” services (such as broadband and VoIP). Nonetheless, a small but not insubstantial number of UNEs persist because regulated UNE rates are below market wholesale rates, allowing asset-light service providers to capture excess value from the sale of UNEs. If forbearance were granted to the ILECs that are currently obligated to sell UNEs at below-market rates, customer migration to next-generation services would accelerate, as asset-light service providers may either raise prices or shift emphasis to next-generation products offered over their own facilities.

Our analysis isolates the incremental impact of forbearance from the next-generation migration that is happening anyway without forbearance, by subtracting the impact of the forecast status quo from our post-forbearance forecast. To determine the change in customer spend and shift in revenue from asset-light service providers to providers of next-generation services, we mapped all legacy UNE-based products to their likely next-generation substitutes. We used confidential data provided by four price-cap ILECs to establish the mix and pricing of UNEs today, and used public benchmarks to establish the pricing for their next-generation substitutes. For the portion of the market that does not immediately migrate to next-generation services, we assumed ILECs would charge asset-light service providers a higher market-set wholesale rate for UNE equivalents, based on public benchmarks and estimates. We then assume that some of this cost increase would be passed onto end customers. Our model assumes that additional revenue generated by ILECs from selling the same element or an equivalent service for a higher price would be invested at the higher capital intensity of ILECs versus the much lower capital intensity of asset-light service providers whose business models are more focused on leveraging leased facilities. Similarly, to estimate the investment generated by the migration from UNEs to next generation services, we compared the higher capital intensity of a basket of next-generation service providers (including ILECs, cable operators and fiber-based CLECs) to the lower capital intensity of asset-light service providers.

The key findings of this study are:

- According to the FCC’s latest telephone competition report, ILECs reported 2.1 million UNEs in use.² The vast majority of UNEs in use are DS0 (64kbps) and DS1 (1.5Mbps), with likely about half used for voice and half for data. DS3s (44.7Mbps) are a negligible

² As of 12/31/2016. Federal Communications Commission, Voice Telephone Services Report: Voice Telephone Services as of 12/31/16, Nationwide Subscriptions. Feb. 2018, *available at* <https://www.fcc.gov/voice-telephone-services-report>

part of the market. Since 2011, UNEs have been declining at an average annual rate of 6.9%. Based on market rates for end-customer products provided over UNEs we estimate that in 2017, end-customers spent \$1.9 billion on UNE-based products sold by asset-light service providers. We also estimate asset-light service providers spent \$495 million with ILECs providing UNEs at regulated rates.

- Regulated UNE rates are much lower than market-determined commercial wholesale prices. We estimate regulated UNE rates are on average 59% less than commercial wholesale rates for equivalent legacy services. Discounts range from 6% (for rarely used DS3 Enhanced Extended Links) to 69% (for the more commonly used DS1 loops, used for T1/DS1 data circuits, and DS0 digital loops, used for Ethernet-over-copper).
- If forbearance were granted and all customers migrated to next-generation services more gradually, end-customers would save \$1 billion between 2018 and 2027, and enjoy additional consumer surplus of \$29 million due to increased service quality. Based on historical trends, we would expect investment to increase by \$1.2 billion to \$1.8 billion over this ten year period, leading to a total direct and indirect job effect of 4,428 to 6,352 new jobs created annually, and to an increase in GDP of between \$359 million and \$542 million annually.

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Introduction

The Federal Communications Commission ("FCC") has sought to implement a regulatory agenda that accelerates wireline broadband deployment while minimizing regulatory over-reach. The purpose of this paper is to study the effects of forbearance of Section 251(c)(3) of the Telecommunications Act of 1996 ("1996 Act"), which imposes requirements on ILECs to offer third-party service providers access to their unbundled network elements ("UNEs") at a fixed price. These UNEs are then used by these third-party service providers to offer voice and data products to commercial end-customers.

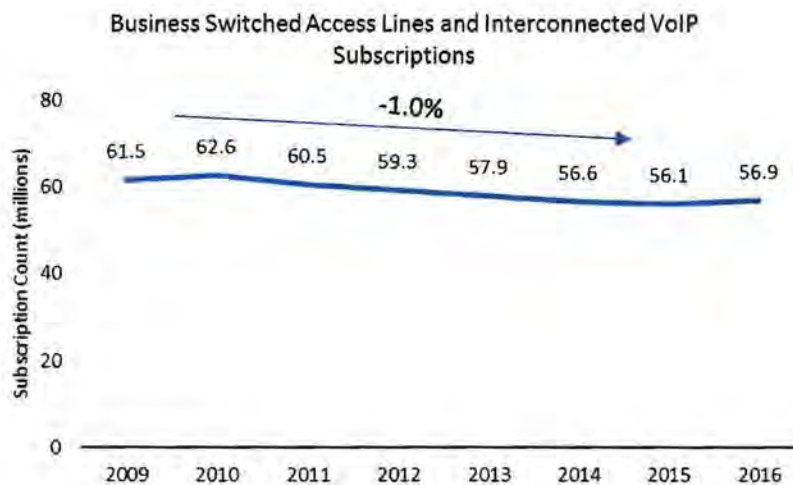
The construct of our analysis is to study how forbearance would affect customer migration and the impact of that migration on consumer surplus and job creation. In Part 1, we study competition and recent trends in the business communications services market to better understand whether UNE regulation remains necessary to ensure access. In Part 2, we provide an overview of the model, including the methodology and key inputs and assumptions. We also discuss the results in terms of customer savings and capital investment of the two different scenarios we model. Finally, in Part 3, we discuss how these changes in savings and investments translate into new jobs, consumer surplus and GDP growth.

Part I: State of the Market

State of the Business Services Market

Telephony has been an essential service for businesses for nearly a century, but the market has changed dramatically over the last two decades. Until the passage of the 1996 Act, almost all business customers bought voice services from ILECs. Today, the FCC reports that more than 1,500 companies are providing wireline business voice services in the US, with more than 1,100 of those non-ILECs. More than 500 providers offer Internet-based (“over-the-top”) voice services to businesses, which are effectively available wherever low-speed broadband is available, and no state has fewer than 47 over-the-top voice providers³. Additionally, mobile voice is widely used by businesses, especially small businesses, and access is near-universal: 99.7% of Americans have access to two or more mobile providers offering voice services. Even as new communications technologies like email, instant messaging and texting have arisen, demand for business voice connections remains steady⁴, with non-ILECs winning a growing share of the market.⁵

Figure 1. FCC-Reported US Business Voice Connections, 2009-2016⁶



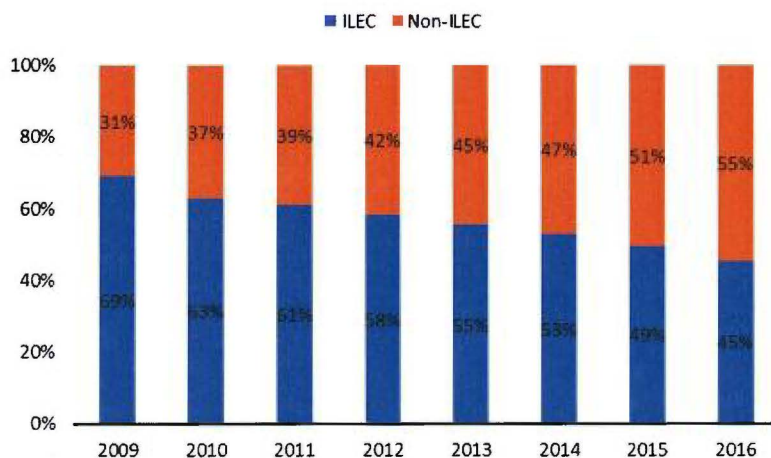
³ FCC, Voice Telephone Services Report: Voice Telephone Services as of 12/31/16, Nationwide Provider Counts and State-Level Provider Counts, *available at* <https://www.fcc.gov/voice-telephone-services-report>.

⁴ *Id.*

⁵ *Id.*

⁶ *Id.*

Figure 2. FCC-Reported Market Share for Business Voice Connections, ILECs vs. Non-ILECs, 2009-2016⁷



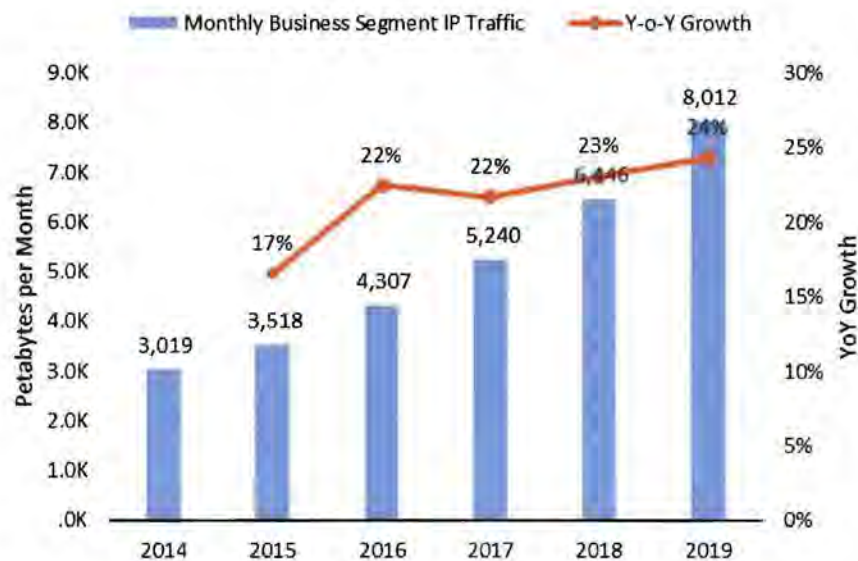
While voice demand has been flat, the demand for business data services has grown rapidly. In 2014, Cisco predicted business IP traffic in North America to grow annually at a 22% rate⁸ [Figure 3]. As of Cisco's latest report, the North America business services market is on track with these projections; in fact, business IP traffic is now expected to grow at 23% yearly, reaching 13,720 PB of monthly use in 2021.⁹

⁷ Id.

⁸ Cisco, "Cisco Visual Networking Index: Forecast and Methodology, 2014-2019", May 2015, *available at* http://s2.q4cdn.com/230918913/files/doc_downloads/report_2014/white_paper_c11-481360.pdf

⁹ Cisco, "Cisco Visual Networking Index: Forecast and Methodology, 2016-2021" Sept. 2017, *available at* https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/complete-white-paper-c11-481360.html?referring_site=RE&pos=1&page=https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/mobile-white-paper-c11-520862.html#_Toc484813982

Figure 3: North American Business IP Traffic, 2014-2019¹⁰



However, this boom in demand has not translated into revenue growth for business services. Revenues from the wireline business segment of the largest connectivity providers in the U.S. have remained flat in recent years, despite various mergers and acquisitions.¹¹ The implication of growing demand for data and voice connections, coupled with consistently flat revenue for providers, implies consistently decreasing prices.

This pricing trend is borne out by inflation figures from the Federal Reserve. From 2011-2016, overall consumer prices grew by 9.0%, whereas business data prices declined by 0.7%.^{12,13}

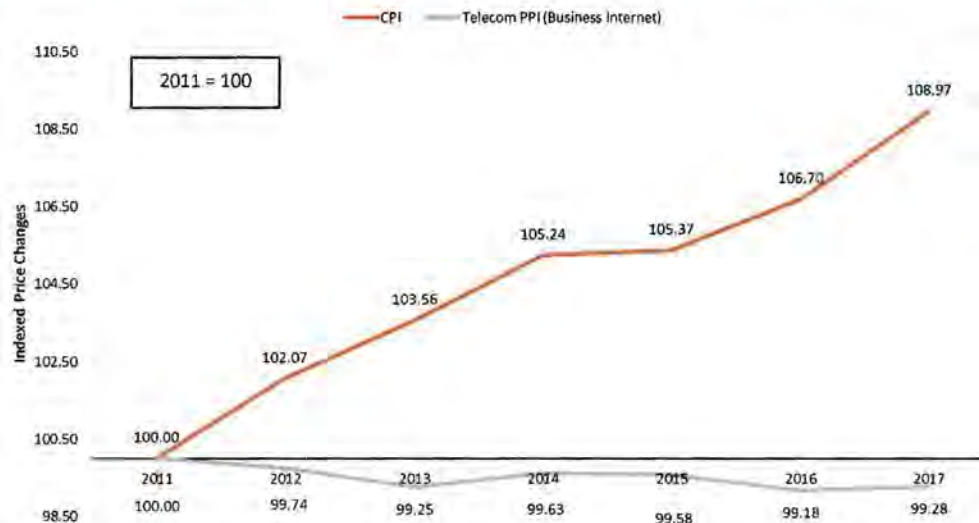
¹⁰ Cisco, "Cisco Visual Networking Index: Forecast and Methodology, 2014-2019", May 2015, available at http://s2.q4cdn.com/230918913/files/doc_downloads/report_2014/white_paper_c11-481360.pdf

¹¹ These are AT&T (wireline only), Verizon (wireline only), CenturyLink, Level3, Windstream, Comcast, TWC, Frontier, Charter and Zayo. For the 10 providers, revenues grew only 1.6% a year, from \$84.8B in 2013 to \$88.9B in 2016. 10-K and other SEC filings were used to aggregate business revenues. Since 2013, Verizon has purchased XO Communications, CenturyLink merged with Level 3, Level 3 acquired TW Telecom, Windstream purchased Earthlink and Broadview Networks, Charter bought Time Warner Cable and Bright House, Time Warner Cable purchased DukeNet, and Zayo made numerous acquisitions. Available at <https://www.sec.gov>.

¹² Using the average PPI of each year and finding the percentage change. Federal Reserve Bank of St. Louis: Economic Research, based on data from Bureau of Labor Statistics, Producer Price Index by Industry: Wired Telecommunications Carriers: Business Internet Access Services, 2008-2018. <https://fred.stlouisfed.org/series/PCU517110517110602>.

¹³ Using the average PPI of each year and finding the percentage change. Producer Price Index by Industry: Wired Telecommunications Carriers: Business and Other Local Telephone Service, 2008-2018. Available at <https://fred.stlouisfed.org/series/PCU517110517110112>.

Figure 4. Consumer Price Index vs. Business Telecom Producer Price Indices, 2011-2016



The price compression seen in the business services market today is likely due to increasing competition.¹⁴ ILECs are facing flat revenues in the business services market, while cable companies' business services revenues are growing substantially¹⁵. Recent news articles have contrasted the "momentum of cable operators" with the "the struggles [that telcos face in] finding profitability in the wireline business service segment."¹⁶ This recent trend further incentivizes telcos to lower prices to win customers, because their cable rivals also offer lower-priced "best efforts" services. "Best efforts" are defined as lower-priced "mass-market services that come with asymmetrical speeds and few if any service guarantees."¹⁷ Despite the lack of service guarantees, "best efforts" broadband is frequently a sufficient substitute for a dedicated 1.5Mbps DS1 product.

¹⁴ The relationship of market competitiveness and prices is described in an FCC-sponsored white paper that examined the business data services market. The report finds that the presence of competition in a building or a census block consistently lower prices. The same report also found that areas with less strict pricing regulations (more "pricing flexibility") tended to have lower prices, although causality in this case cannot be proven. This report studies Special Access circuits rather than UNEs. Marc Rysman, "Empirics of Business Data Services" Revised April 2016, 3.

¹⁵ Large cable companies' (Comcast, Charter, Time Warner Cable) business services revenues have grown 15% annually while large ILECs' (Verizon, AT&T, standalone CenturyLink, Windstream, Frontier) have declined 1% a year. Analysis based on filings available at <https://www.sec.gov>

¹⁶ Sean Buckley, Fierce Telecom, "AT&T, Verizon's business revenues challenged by commoditization, cable competition", Jan. 2018. www.fiercetelecom.com

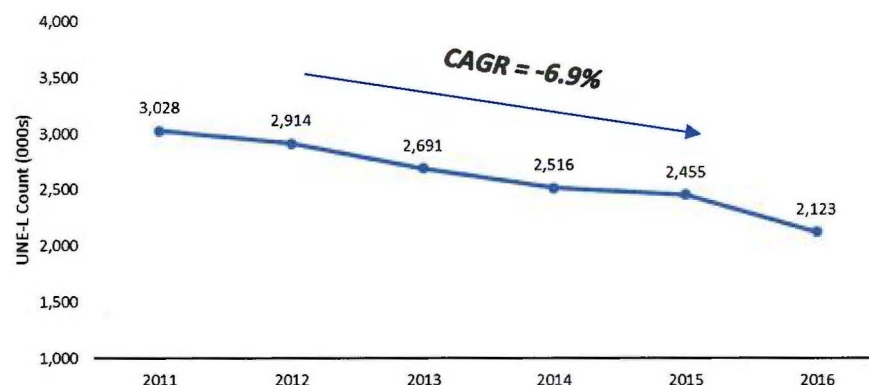
¹⁷ Rysman, 6.

The FCC's own research and analysis on the business data services confirm these findings, as they found that non-ILECs were responsible for more than half of total business data services revenue of \$45 billion in 2013, a share that has likely grown since then.¹⁸ Following data collection on business data services revenues, contracts and customers from 491 facilities-based service providers, the FCC said, "The record... demonstrates substantial and growing competition in the provision of business data services in areas served by incumbent local exchange carriers (ILECs) subject to price cap regulation."¹⁹

State of the UNE market

UNEs occupy a small and declining share of the overall business services market, generating less than 1% of business services revenues for ILECs.²⁰ While business voice connections and data demand continue to grow, UNE counts have been declining at a rate of nearly 6.9% a year.²¹ In 2011, ILECs reported selling 3.0 million UNEs. As of the end of 2016, ILECs reported selling 2.1 million UNEs, a decline of nearly 1 million lines.²²

Figure 5. ILEC-Reported UNEs, 2011-2016



¹⁸ BDS Order, para. 2.

¹⁹ Id., para. 1.

²⁰ UNEs are estimated to account for \$495.5 million of revenue for ILECs in 2017. Review of providers' financial filings showed ILEC business services revenue (wireline) to amount to \$77.1 billion.

²¹ Decline rate in terms of circuits, Federal Communications Commission, Local Telephone Competition Reports, 2011-2016. Available at www.fcc.gov

²² This survey reports all UNE circuits as stated by the ILECs. Although this report technically concerns the state of the Voice market, many of these circuits are believed to be used by asset-light service providers to provide business data services to their clients. This count refers to the last ILEC-reported count as of 12/31/2016. For the purpose of this paper, we assume the FCC Local Competition UNE counts to represent the number of UNEs in the day after this as well, in this case 01/01/2017. Federal Communications Commission, Local Telephone Competition Reports, 2018. Available at www.fcc.gov

Where UNEs are still employed, they are commonly used for legacy voice and low-bandwidth data services. They are sold in three speed variants: DS0 (64kbps), DS1 (1.5Mbps) and DS3 (44.7Mbps), although DS3s make up a negligible portion of the market. DS0s are sold in three varieties: digital loops, analog loops and extended enhanced links²³ (“EELs”). DS0 digital loops are typically bonded and used for Ethernet-over-copper data circuits, at varying speeds, depending on the equipment and number of copper pairs bonded together.²⁴ DS0 analog loops and DS0 EELs are typically used for traditional plain old telephone service (“POTS”) lines. DS1 loops are used for T1/DS1 data circuits, while DS1 EELs are typically used for 24-channel T1 voice trunks. UNEs are mostly purchased by asset-light service providers, but also used by ILEC-affiliated CLECs.

Although they make up a small and declining minority of voice and data circuits, 2.1 million UNEs remain in the market today. Asset-light service providers benefit by preserving UNE use in the market, since regulated UNE prices are set below market, while their prices to end-customers are set by the market. Instead of paying the wholesale market rate to ILECs, asset-light service providers pay the lower UNE rate while pricing their retail services only 15-20% lower than what ILECs charge. Based on the average wholesale prices from the FCC’s Business Data Services data collection,²⁵ UNEs are priced from 15% below the wholesale rate (for DS3s) to 69% below the wholesale rate (for DS1s). Asset-light service providers have captured the additional value accordingly. In its final SEC filing, at the end of 2013, asset-light service provider Cbeyond reported a gross margin of 64.9%²⁶ compared to 51.8% to 59.1% for the three largest ILECs.²⁷

Economic research has demonstrated that where UNE prices are lower, less facilities-based investment occurs than where UNE prices are higher, suggesting that asset-light service

²³ EELs include both transport and access. Loops only include access.

²⁴ XO Communications shared a presentation with the FCC in 2012 that outlined the number of DS0 copper pairs required to achieve particular Ethernet-over-copper speeds. For example, five DS0s (copper pairs) are required to provide 10X10 Mbps Ethernet-over-copper for buildings up to 9,000 feet from the central office, and two are required to provide 3X3 Mbps for buildings up to 8,000 feet from the central office. XO Communications, “XO Ethernet Over Copper Services,” Filed in 2012. <https://ecfsapi.fcc.gov/file/60000986341.pdf>.

²⁵ Rysman, 19.

²⁶ SEC Filings, Cbeyond 2013, *available at* www.last10k.com/sec-filings/cbey

²⁷ AT&T is 51.8%, CenturyLink is at 53.5% and Verizon is at 59.1% according to the latest filings. *Available at* <http://financials.morningstar.com/ratios/r.html?t=T>, <http://financials.morningstar.com/ratios/r.html?t=CTL>, and <http://financials.morningstar.com/ratios/r.html?t=VZ>, respectively.

providers have under-invested in their networks in part due to the beneficial economics of purchasing UNEs at below-market rates.²⁸

ILEC-affiliated CLECs also currently use UNEs to serve their end-customers. For example, Verizon is affiliated with XO Communications, CenturyLink is affiliated with Level 3, and Windstream is affiliated with EarthLink, Paetec, and Broadview Networks. Together, these companies suffer from a collective action dilemma: for any given ILEC-affiliated CLEC purchasing UNEs, there is not a strong company-wide incentive to discontinue the arrangement. ILEC-affiliated CLECs benefit from the same UNE economics out of their incumbent region that asset-light service providers enjoy.

²⁸ See, e.g., Robert Crandall, Allan Ingraham, & Hal Singer, *Do Unbundling Policies Discourage CLEC Facilities-Based Investment?* 4(1) THE B.E. JOURNAL OF ECONOMIC ANALYSIS & POLICY (2004) 1-25 (reviewing the literature establishing the empirical and theoretical linkages between mandatory unbundling and diminished investment incentives, and performing original empirical analysis demonstrating that facilities-based line growth relative to UNE growth was faster in states where the cost of UNEs was higher relative to the cost of facilities-based investment).

Part 2: Modeling the Impact of 251(c)(3) Forbearance

Model Methodology

To isolate the impact of forbearance from how the market would act if forbearance were not granted, we developed two base scenarios: a status quo scenario and a forbearance scenario. The status quo scenario assumes a continual steady decline in UNEs at the historical migration rate of 6.9% as end-customers migrate to next-generation services. The forbearance scenario accelerates this migration. The delta in results between the two models is the incremental benefit of granting forbearance. The forecast period is ten years.²⁹

Model Inputs and Assumptions

UNE Product Mix and Pricing

We collected confidential data from four ILECs to establish a baseline for the mix and pricing of UNEs in use today. The data we collected amounted to 979,205 UNEs, which represent nearly 50% of the UNE market as of the start of 2017.³⁰ The data we collected was comprised of DS0s, DS1s and DS3s—both in the form of loops and in the form of Extended Enhanced Links (“EELs”). We calculated the weighted average price for each product based on pricing information provided by the ILECs. For EELs, we used the average mileage price of each circuit, as provided by the ILECs. Given the large portion of all UNEs that were included in this sample, we assumed that the aggregate data provided by the ILECs accurately represents the product distribution of UNEs in use, and their average unbundled rate.³¹ Using the UNE rates seen below, we calculated that asset-light service providers pay \$495.5 million for all UNEs used in the market today.

²⁹ Our model studies the impact of forbearance in the year it takes effect (at the start of Year 1) and then forecasts the effect over a 10-year period. For simplicity's sake, we assume that end-customer demand for either legacy or next-generation services will remain constant; that is, no end-customers will go out of business or shutter locations, and all end-customers will need to retain replacement connectivity services. Ultimately, this assumption has negligible impact on our model because the same assumption is used for the Status Quo scenario as for the Forbearance Scenarios.

³⁰ The FCC ILEC-reported UNE counts nationally are provided as of December 31st, of each year. As such, we took this number to be the count of UNEs as of January 1st of the following year. For example, the 2,123,000 UNEs reported for 12/31/2016 were taken to be the same the day after, on 01/01/2017. Federal Communications Commission, Local Telephone Competition Report, Dec. 2016, *available at* <https://www.fcc.gov/voice-telephone-services-report>

³¹ Year 0 in this study is the start of 2017.

Figure 6. UNE Circuit Mix, 2017

Underlying UNE	Count
DS0 Analog	44.3%
DS0 Digital	45.7%
DS1 Loop	4.7%
DS3 Loop	0.01%
EEL DS0	0.2%
EEL DS1	5.1%
Total Count	2,123,000

Figure 7. UNE Weighted Average Pricing, 2017

Underlying UNE	Associated Retail Product	Underlying UNE Price
DS0 Analog	POTS Voice Line	\$11
DS0 Digital	Ethernet over Copper	\$11
DS1 Loop	T1 Data Circuit (1.5Mbps)	\$69
DS3 Loop	T3 Data Circuit (45Mbps)	\$781
EEL DS0	POTS Voice Line	\$15
EEL DS1	T1 Voice Circuit (24 Channels)	\$119

End-Customer Retail Pricing for UNE-Based Products

To set a baseline for end-customer spend today compared to a post-forbearance world, we researched typical retail pricing of products based on UNE offerings. We interviewed the contributing ILECs to better understand the most likely retail products associated with each UNE offering, and identified public pricing benchmarks for each retail product. To ensure we did not overstate the current margins of asset-light service providers, where possible we used public benchmarks from providers with broad and diverse footprints, such as Megapath and Zayo. Our research demonstrates that end-customers pay service providers on average four times what service providers pay for the underlying UNE offerings. Given these retail rates, we calculated that end-customer spend on UNE-based products today is \$1.9 billion.

Figure 8. End-Customer Retail Pricing for UNE-Based Legacy Products

Underlying UNE	Legacy Retail Product	Service Provider Retail Price ³²	Implied Gross Margin for Asset-Light SPs
1x DS0 Analog	Single POTS Voice Line	\$34	69%
5x DS0 Digital (Bonded)	Ethernet over Copper (10Mbps)	\$400	86%
1x DS1 Loop	T1 Circuit (1.5Mbps)	\$300	77%
1x DS3 Loop	T3 Circuit (45Mbps)	\$1,300	40%
1x EEL DS0	Single POTS Voice Line	\$34	57%
1x EEL DS1	T1 Voice Circuit (24 Channels)	\$200	41%

Next-Generation Replacement Products for UNEs

To assess the gain in consumer surplus attributable to forbearance, via savings or increased value of next-generation services, we identified the next-generation replacement services for each UNE-based retail product and benchmarked its typical pricing. We assumed voice products would be replaced with voice products and data products would be replaced with data products.

Data products have two potential replacement products: dedicated Ethernet products and “best efforts” broadband products offered by cable providers. Given the lack of knowledge of end-customer needs, we assume half of the customers of legacy dedicated data products are using them for Internet connections that could be acceptably replaced with “best efforts” broadband products, especially if they offer higher downstream speeds for a lower overall price. Additionally, some customers who use dedicated data services (DS1s, DS3s) today for internal company networks are likely to be considering switching parts of their network to software-defined wide area networks (“SD-WAN”), which allows them to create an internal company network using broadband circuits rather than more expensive dedicated circuits. Across the board, prices for next-generation products are lower than the legacy products they are replacing, especially when customers switch to “best efforts” products.

³² Service Provider Retail Price sources: Comsoc, Zayo, Megapath, public benchmarks

Figure 9. Next-Generation Replacement Products, Pricing and End-Customer Savings

Legacy Retail Product	Next-Generation Replacement Product	Average Next-Gen Price ³³	End-Customer Savings
Single POTS Voice Line	VoIP	\$20	\$14
T1 Circuit (24 Channels)	SIP Trunk	\$145	\$55
Ethernet over Copper (10Mbps)	Ethernet (10Mbps)	\$299	\$101
	Cable "Best Efforts"	\$70	\$330
	Broadband (10Mbps)		
T1 Circuit (1.5Mbps)	Ethernet (3Mbps)	\$219	\$81
	Cable "Best Efforts"	\$70	\$230
	Broadband (10Mbps)		
T3 Circuit (45Mbps)	Ethernet (50Mbps)	\$720	\$580
	Cable "Best Efforts"	\$100	\$1,200
	Broadband (50Mbps)		

Market Pricing for UNE Wholesale Equivalents

Depending on the pace of migration, some end-customers will remain on UNE-equivalent products for a portion of the forecast period. In those cases, asset-light service providers will pay on average higher commercial wholesale rates for UNE equivalents. While not all of these UNE equivalents exist today, we identified public benchmarks where available and estimated the rates where public benchmarks were not available.³⁴ We assumed historical commercial wholesale rates would remain unchanged post-forbearance.

UNE "Natural" Migration Rate

Given the relatively steady nature of the decline in UNE counts over the last five years, we expect the "natural" migration rate of UNEs to remain 6.9%, as customers migrate to higher-performance services and ILECs retire their underlying copper networks. As the end-customers' connectivity needs do not disappear with their migration away from UNEs, we assume that these naturally migrated lines will move to next-generation services, such as VoIP, SIP Trunks, Ethernet etc.

³³ Average Next-Gen Price Sources: Megapath, Digilink, Comcast, CMA benchmarks. Prices current as of March 28, 2018.

³⁴ For DS1 Loops and DS3 Loops, we used the average pricing from the Business Data Services data collection: \$220 for DS1s and \$1,200 for DS3s. Rysman, 19. To estimate other wholesale rates, we calculated the discounts of known retail to wholesale rates. For Loops with known retail-wholesale discounts, we assumed the same delta occurred for their EEL counterpart circuits. For the rest, we estimated the average retail-wholesale discount which was ~25% for asset-light service provider rates and ~40% for ILEC rates. These were then applied to products' known retail rates to estimate the market-determined wholesale rate.

This historical migration rate was also used to forecast next-generation migration that would happen without forbearance. To ensure our analysis only captures the incremental impact of forbearance, we subtracted out from our post-forbearance model the next-generation migration that would have happened anyway.

Baseline Asset-Light Service Provider Investment

Asset-light service providers invest at a significantly lower level than facility-based service providers. However, they do invest some share of their revenue in capital improvements. To ensure we did not over-estimate the investment impacts of the forbearance scenario, we included in the status quo scenario a capital intensity for asset-light service providers, which we estimate at 5.7%.³⁵ In the model, this status quo investment from asset-light service providers is reduced and eventually eliminated.

Conversion of Revenue to Capital Investment

Our model assumes that additional revenues for facility-based service providers would lead to additional capital investment, given the lack of significant variability in the historical relationship between facility-based service providers' revenues and their capital expenditure (or "capital intensity"). To determine the net incremental capital investment due to forbearance, we subtracted the investment that would happen in the status quo from the capital investment that would likely happen post-forbearance.³⁶ We leveraged publicly reported financials from several large facility-based service providers to estimate the capital intensity of post-forbearance revenues.

There is a vast range for the typical capital intensity of facility-based providers. Cable providers (e.g., Comcast) and ILECs (e.g., AT&T, Verizon) have a conservative approach to capital spending, while fiber operators (e.g., Zayo) have a much more aggressive approach to capital spending. Because our model makes no assumptions on what type of provider will capture next-generation service revenue, we developed a capital intensity range. The range is 15%

³⁵ Estimated by analyzing financials of known UNE purchasers. This represented the weighted average of capital intensities for GTT (2016 and 2017) and Paetec (2011, their last year as an independent public company) using their 10-K reports. One challenge with estimating capital intensity for UNE purchasers is that most have been acquired by larger companies with other lines of business, or gone private. GTT filings available at <http://www.gtt.net/investor-relations/sec-filings/> and PAETEC filing at <https://www.last10k.com/sec-filings/paet/0001193125-11-299623.htm#fullReport>.

³⁶ In the status quo, investment comes from ILECs investing a portion of UNE revenue and asset-light service providers investing a portion of their revenues of UNE-based products. In the post-forbearance scenario, investment comes from facility-based providers of next generation services investing a portion of their revenues, and from the higher commercial rates ILECs are able to command for wholesale equivalents for UNEs, as well as a small part from the diminished revenues of asset-light service providers who are purchasing commercial wholesale UNE equivalents from ILECs.

("Conservative case") to 40% ("Upside case"). The lower figure was based on the weighted historical capital intensities of cable operators Comcast and Cox and ILECs AT&T and Verizon.³⁷ The higher figure was based on Zayo's capital intensity.³⁸

We addressed the additional wholesale revenues that ILECs gain from selling wholesale UNE equivalents to asset-light service providers in a slightly different way. For the portion of circuits that do not immediately migrate to next-generation facilities, asset-light service providers are assumed to pay ILECs a higher commercial wholesale rate for services that are functionally equivalent to UNEs. Because the additional revenue for ILECs from these services do not incur material additional operating costs, ILEC EBITDA (earnings before interest, tax, depreciation and amortization) would increase at more or less a one-to-one ratio with the growth in revenues from UNE equivalents. Therefore, we used the historical capital intensity of EBITDA—not revenue—to determine the additional possible increase in capital investment. Based on financial filings, we calculated the ILEC capital intensity of EBITDA to be 42%.^{39, 40}

Model Results – Immediate Migration

To illustrate the potential end-customer savings from forbearance, we developed an illustrative scenario that assumes all end-customers migrate to next-generation services in Year 1 of the 10-year forecast. In this purely illustrative scenario, end-customers would save a total of \$5.9 billion. In practice, migration will be much more gradual.

³⁷ Comcast, SEC filings 10-K 2017. *available at* <https://www.cmcsa.com/node/30076/html>. Cox, SEC filings 10-K, 2003. *available at* <https://www.sec.gov/Archives/edgar/data/902739/000119312516452423/d49239d10k.htm>. AT&T, SEC Filings 10-K, 2017 *available at*. <https://otp.tools.investis.com/clients/us/atnt/SEC/sec-show.aspx?Type=html&FilingId=12564537&CIK=0000732717&Index=10000>. Verizon, SEC filings 10-K 2017 http://verizon.api.edgar-online.com/EFX_dll/EdgarPro.dll?FetchFilingConvPDF1?SessionID=KI2mquxphd_CmWu&ID=12574605

³⁸ Zayo, SEC filings, 10-K 2017. *available at* <http://otp.investis.com/clients/us/zayo1/SEC/sec-show.aspx?FilingId=12245242&CIK=0001502756&Type=PDF&hasPdf=1>

³⁹ AT&T, Annual report 2016, *available at* <https://investors.att.com/~media/Files/A/ATT-IR/financial-reports/annual-reports/2016/att-ar2016-completeannualreport.pdf>, AT&T Inc. and Subsidiary Debt Detail – 09/30/2017 https://investors.att.com/~media/Files/A/ATT-IR/financial-reports/debt/Debt_List_3Q17.pdf, as of 02/14/2018

⁴⁰ Verizon, 2016 Annual Report, *available at* http://verizon.api.edgar-online.com/EFX_dll/EdgarPro.dll?FetchFilingHTML1?SessionID=VLaaqlAw9Ekb9Hu&ID=11871260. Verizon, Schedule of Outstanding Debt *available at* <http://www.verizon.com/about/investors/schedule-outstanding-debt> as of 2/14/2018.

Model Results – Gradual Migration

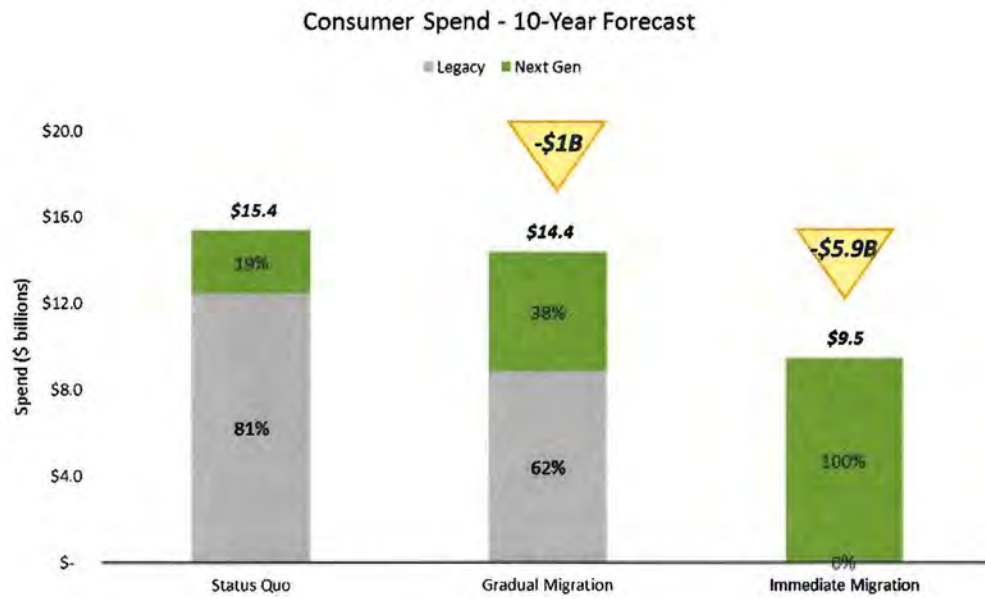
In our more gradual and realistic scenario, we assume 40% of end-customers will migrate to next-generation services in Year 1 (vs. 6.9% in the status quo model and 100% in the immediate migration scenario referenced above). This 40% is similar to the highest decline in a single year in the two years following the discontinuance of UNE-P (42%).⁴¹ Following the initial 40% migration, we assume migration to next-generation services will continue at its historical rate of 6.9%, which may well be a bit conservative given the UNE-P precedent, where UNE-Ps declined more than 20% a year for several years.

For the 60% of lines that remain with asset-light service providers, we assume that half of the end-customers continue to pay the same price as they did pre-forbearance, and half pay a higher price. In other words, we assume that asset-light service providers take a margin cut for half of their lines: despite the increase in costs they keep a stable price for half of their customers. The other half of the customers, however, are assumed to experience a price increase equal to the cost increase experienced by the service providers; essentially, service providers choose to pass through the cost increase in full to half of their customers. This implies a segmentation of consumers into three groups: the first is now using next-generation services at lower prices (positive impact on consumer surplus), the second has faced no change in service and price (no impact on consumer surplus), and the last is now paying a higher price for the same service (negative impact on surplus).

The consumer impact of this scenario is still positive and substantial. Over 10 years, the aggregate consumer savings total \$1.0 billion. Capital investment would likely range between \$1.2 billion and \$1.8 billion due to the increased capital intensity of the next-generation services and the additional revenues received by ILECs selling UNEs at the higher wholesale rate.

⁴¹ UNE-Ps were a popular wholesale option where asset-light service providers could purchase access to the ILEC's entire voice network, including their voice switch, at a rate set by regulators, and use it to provide low-cost services to end-customers, including residential consumers. In 2005, the FCC's Triennial Remand Order eliminated the requirement that ILECs provide unbundled access to the mass-market voice network, leading to a rapid decline in UNE-Ps in the market. The rate of customer migration to other services averaged 23.3% annually for the next three years. Federal Communications Commission, Triennial Review Remand Order, Feb. 4, 2015. Also, "Local Telephone Competition Reports", 2005-2009. *available at* www.fcc.gov

Figure 10. 10-Year Consumer Spend Across Scenarios



Part 3: Economic Impact & Analysis: Translating the Investment Gain in to Employment and Output Effects

As in other industries, telecom capital expenditures (“CapEx”) have a multiplicative effect on job creation and economic output if the economy is at less than full employment.⁴² Even though the unemployment rate in the U.S. economy is currently low, two factors suggest that a multiplier analysis is still in order. First, while the U.S. unemployment rate is low, the labor force participation rate has not recovered since the onset of the Great Recession a decade ago; many Americans remain underemployed or have given up searching for jobs.⁴³ Thus, an increase in labor demand driven by new investment could plausibly lead to additional employment by drawing disaffected workers back into the labor force.⁴⁴ Second, forbearance is likely to set in motion a stream of investment across several years; thus, even if the economy is at full employment today, the business cycle all but ensures that the economy will be in a different state (including less-than-full employment) during the course of the study period. In this section, we trace the impact of increased CapEx resulting from forbearance on jobs and output using traditional multipliers as well as estimates of spillover effects.

In addition, we trace the net impact of forbearance on consumer welfare through two distinct channels. To the extent that forbearance leads customers to switch to lower-priced next-generation alternatives, resulting in a net price decrease when averaged across all affected customers, welfare will be enhanced. To the extent that customers value the improved service quality associated with next generation services, they will benefit still further. Both of these effects are quantified below. Customers would benefit additionally to the extent that investment into next-generation infrastructure spurs entry and increases competition among next-generation service providers beyond what would have occurred otherwise. We do not attempt to quantify this last effect, making our analysis conservative.

As explained below, forbearance is projected to have a positive and economically significant effect on job creation, economic growth and consumer welfare:

⁴² The multiplier is a standard principle in the economic literature. See, e.g., RUDIGER DORNBUSCH & STANLEY FISCHER, *MACROECONOMICS* 66 (McGraw Hill 6th ed. 1994). Richard Kahn first introduced the multiplier concept as an “employment multiplier.” See Richard F. Kahn, *The Relation of Home Investment To Employment*, 41 *ECON. J.* 173, 173-98 (1931). John Maynard Keynes expanded upon this concept by introducing the “investment multiplier.” See JOHN MAYNARD KEYNES, *A GENERAL THEORY OF EMPLOYMENT, INTEREST, AND MONEY* 115 (Harcourt Brace & Co. 1964) (1936).

⁴³ See, e.g., <https://data.bls.gov/timeseries/LNS11300000>.

⁴⁴ Nick Timiraos, “Jobs Report Should Keep Fed on Path of Gradual Rate Increases,” *Wall Street Journal* (March 9, 2018) (“The [jobs] report suggests a steadily growing economy is drawing more Americans from the sidelines of the labor force back into jobs. ‘It seems increasingly plausible that the economy is still well short of full employment,’ said Andrew Levin, a Dartmouth College economics professor and former Fed adviser.”)

- Forbearance is projected to directly create between 2,214 and 3,176 jobs annually over ten years.
- When spillover effects are included, forbearance is projected to create between 4,428 and 6,352 jobs annually.
- Forbearance is projected to increase GDP by between \$359 million and \$542 million annually over ten years, or up to \$5.4 billion in the aggregate.
- Forbearance is projected to result in net savings for customers, totaling \$1.0 billion.
- Forbearance is projected to result in higher quality of service for customers, valued at \$29 million over ten years.

Job Impact

Our analysis of employment effects from the proposed forbearance is divided into two parts: (1) “total multiplier effects,” which estimates the number of jobs directly and indirectly created by spending activities in upstream (input) industries, plus induced jobs from greater household income; and (2) “spillover effects,” which accounts for additional spending by related and new downstream industries that benefit indirectly from increased CapEx by next-generation service providers.

Total Multiplier Effects

The employment effects of capital expenditures in the telecom industry extend beyond the company’s direct employees. “Direct effects” are jobs generated from activities such as installing fiber, while “indirect effects” are job gains associated with communication equipment suppliers. “Induced effects” are the jobs created when the employees of an input provider use their additional income to purchase more goods and services in the local economy. These three effects (direct, indirect, and induced)—collectively referred to as the “total multiplier”—are considered to be the key elements of a traditional analysis of economic impact. Four papers in the literature inform our estimate of the total multiplier for fiber-based broadband investment.

Using the Bureau of Economic Analysis job and output multipliers, along with slated broadband investment schedules from the Columbia Institute for Tele-Information, Crandall and Singer (2010) projected an average of 509,546 jobs in the United States would be sustained from 2010 to 2015 as a result of approximately \$30.4 billion of annual broadband investments relative to a world without such investments,⁴⁵ implying a weighted-average multiplier (across all broadband technologies) of 16.8 jobs for every million dollars of broadband investment.

⁴⁵ Robert W. Crandall & Hal J. Singer, *The Economic Impact of Broadband Investment*, Prepared for Broadband for America, Feb. 2010, available at http://internetinnovation.org/files/special-reports/Economic_Impact_of_Broadband_Investment_Broadband_for_America_.pdf.

Katz and Callorda (2014) studied the effects of repealing a sales tax exemption in Minnesota on the telecommunications industry.⁴⁶ Based on an input-output analysis, they estimate that a \$154 million reduction in broadband investment would destroy 3,323 jobs in the state, implying a total job multiplier of 21.6 jobs per million dollars of broadband investment.⁴⁷ Indirect and induced effects contribute a substantial proportion of that total multiplier.⁴⁸

Sosa and Audenrode (2012) estimated that the effects of reassigning 300 MHz of additional spectrum to mobile broadband would trigger \$15.075 billion in new capital spending per year (although the study pertains to mobile broadband, the authors rely on job multipliers derived from wireline services.)⁴⁹ The authors apply BEA Type II RIMS multipliers to calculate a weighted average of Construction (56%) and Broadcast and Communications Equipment (44%), implying 20.4 jobs for every \$1 million invested.⁵⁰

Finally, using the latest multipliers for telephone apparatus manufacturing (11.8), broadcast and wireless communications equipment (13.8), fiber-optic cable manufacturing (14.4), and construction (26.7),⁵¹ Eisenach, Singer and West (2009) estimated separate multipliers for different types of broadband spending by applying weights to each of the industry multipliers based on the allocation of broadband capital spending to each industry.⁵² They estimated the weighted average employment multipliers for fiber-based technologies of 19.7 jobs per million dollars of FTTP investment and 14.7 jobs per million dollars of cable investment.⁵³

We adopt the conservative fiber- and cable-specific investment multipliers from Eisenach, Singer and West here, using the fiber multiplier for ILECs and the cable multiplier for all other next generation service providers. Because the multipliers are expressed in terms of annual

⁴⁶ Raul Katz & Fernando Callorda, *Assessment of the Economic Impact of the Repeal of the Tax Exemption on Telecommunication Investment in Minnesota* (Feb. 2014), *available at* <http://www.mncca.com/doc/minnesota-study-final-version.pdf>.

⁴⁷ *Id.* at 24.

⁴⁸ *Id.*

⁴⁹ David Sosa and Marc Van Audenrode, *Private Sector Investment and Employment Impacts of Reassigning Spectrum to Mobile Broadband in the United States*, Analysis Group (August 2011), *available at* http://www.analysisgroup.com/uploadedFiles/News_and_Events/News/Sosa_Audenrode_SpectrumImpactStudy_Aug2011.pdf.

⁵⁰ *Id.* at 5.

⁵¹ U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, *Regional Input-Output Modeling System (RIMS II)*, Table 1.5 (2008). Multipliers are based on the 1997 Benchmark Input-Output Table for the Nation and 2006 regional data.

⁵² Jeffrey A. Eisenach, Hal J. Singer & Jeffrey D. West, *Economic Effects of Tax Incentives for Broadband Infrastructure Deployment*, FTTP Council (2008) at 8.

⁵³ *Id.* Table 2 at 8. FTTP weights are 30 percent for telephone apparatus manufacturing, 20 percent for fiber optic cable manufacturing, and 50 percent for construction.

effects, we spread the predicted investment gain equally across ten years. Forbearance is predicted to increase aggregate annual investment for all next generation service providers by between \$117 million per year (in the Conservative case) and \$182 million per year (in the Upside case).

Figure 11. ANNUAL CAPEX CHANGE (ALL FACILITIES BASED PROVIDERS)

Conservative Case - Total CapEx Change	\$117
Upside Case - Total CapEx Change	\$182

Figure 12 shows that, in the Conservative case before considering spillover effects, forbearance could create 2,214 jobs annually over a ten-year period in the Conservative case. In the Upside case, forbearance could create 3,176 jobs annually over a ten-year period. When spillover effects (discussed below) are taken into account, the aggregate annual job gains range from 4,428 to 6,352.

Figure 12. DIRECT, INDIRECT, INDUCED ANNUAL JOB GAIN FROM FORBEARANCE

	Conservative Case	Upside Case
[A] Asset-Light Service Provider Annual Incremental CapEx (\$M)	(\$20.33)	(\$20.33)
[B] ILEC Average Annual Incremental CapEx (\$M)	\$98.84	\$98.84
[C] Other Next-Generation Service Provider Annual Incremental CapEx (\$M)	\$38.15	\$103.38
[D] Asset-Light Service Provider Annual Job Effect = [A] * (14.7)	-300	-300
[E] ILEC Annual Job Effect = [B] * (19.7)	1,952	1,952
[F] Other Next-Generation Service Provider Annual Job Effect = [C] * (14.7)	562	1,524
[G] Net Annual Direct Job Effect = [D] + [E] + [F]	2,214	3,176
[H] Net Annual Spillover Job Effect = [G]	2,214	3,176
[I] Aggregate Annual Job Gain = [G] + [H]	4,428	6,352

Spillover Effects

The total-multiplier-based jobs estimate above does not account for additional spending in related downstream industries except for those industries that directly benefit from increased spending by broadband input providers. Yet broadband investment and higher broadband penetration have been shown to create additional, or “spillover” effects in myriad downstream

industries, including in healthcare,⁵⁴ education,⁵⁵ and energy,⁵⁶ whose ability to enrich and enhance their service offerings is increased by greater availability of broadband internet access.⁵⁷ Broadband spillover effects tend to concentrate in service industries such as financial services and healthcare, yet some have identified an effect in manufacturing as well.⁵⁸

In light of the recognized limitations of the multiplier approach for capturing the full economic effect of investment activities, economists have developed alternative methods and tools to estimate the full effects of broadband investment and use. Four studies inform our estimate of the spillover effect here.

Crandall and Singer (2010) estimate spillover effects by examining how added spending in related upstream markets could impact employment.⁵⁹ Using industry-specific employment multipliers and an assumed five percent increase in capital expenditure, they estimate an additional 452,081 jobs on top of the 509,546 jobs created via the total multiplier, implying a spillover multiplier of 0.89.

Katz and Suter (2009) describe how “network-effect-driven” job gains flow from three trends: innovation leading to the creation of new services, attraction of jobs (from either other U.S.

⁵⁴ M. Meyer, R. Kobb, & R. Ryan, *Virtually healthy: Chronic disease management in the home*, 5 DISEASE MANAGEMENT 87-94 (2002).

⁵⁵ Working Party on Communication Infrastructures and Services Policy, Network Developments in Support of Innovation and User Needs, Organization for Economic Cooperation and Development Dec. 2009 at 5 (Broadband is having a significant impact on education and e-learning by improving access to digital learning resources; encouraging communication among schools, teachers and pupils; promoting professional education for teachers; and linking local, regional, and national databases for administrative purposes or supervision.) available at [http://www.oelis.oecd.org/olis/2009doc.nsf/LinkTo/NT0000889E/\\$FILE/JT03275973.PDF](http://www.oelis.oecd.org/olis/2009doc.nsf/LinkTo/NT0000889E/$FILE/JT03275973.PDF).

⁵⁶ See, e.g., Justin Horner, Telework: Saving Gas and Reducing Traffic from the Comfort of your Home, Mobility Choice, available at <http://www.mobilitychoice.org/MCTelecommuting.pdf> (“By taking more than 4.7 million cars off the road every day, telecommuting already has a positive effect on congestion.”); Ted Balaker, The Quiet Success: Telecommuting’s Impact on Transportation and Beyond, Reason, Nov. 2005, available at <http://reason.org/files/853263d6e320c39bfcedde642d1e16fe.pdf> (“In fact, an analysis of Washington D.C. commuting by George Mason University’s Laurie Schintler found that traffic delays would drop by 10 percent for every 3 percent of commuters who work at home.”); Joseph Fuhr and Stephen Pociask, Broadband and Telecommuting: Helping the U.S. Environment and the Economy, Low Carbon Economy, 2011, 41-47, available at <http://file.scirp.org/Html/4227.html> (“Studies show that telecommuters reduce daily trips on days that they telecommute by up to 51% and automobile travel by up to 77%.”).

⁵⁷ For example, using online help-wanted ads as a guide to the location of app-related jobs, Mandel and Scherer estimated the number of app-related jobs per U.S. state as of April 2012. Mike Mandel & Judith Scherer, The Geography of the App Economy, Sept. 2012 (prepared for CTIA), available at http://files.ctia.org/pdf/The_Geography_of_the_App_Economy.pdf.

⁵⁸ Crandall, Lehr, & Litan, *supra*.

⁵⁹ Robert W. Crandall & Hal J. Singer, The Economic Impact of Broadband Investment, Prepared for Broadband for America, Feb. 2010, available at http://internetinnovation.org/files/special-reports/Economic_Impact_of_Broadband_Investment_Broadband_for_America_.pdf.

regions or overseas), and productivity enhancement.⁶⁰ They calculate the impact of innovation on the professional services sector, by applying the ratio of productivity gains to the creation of new employment, and applying this effect to the economy of the states with the lowest relative broadband penetration. The underlying assumption of this estimate is that “the economy can generate enough jobs through innovation in a rate comparable to productivity gains.”⁶¹ From these gains, they subtract: (1) the net jobs lost due to accelerated outsourcing from increased broadband penetration, and (2) the jobs lost due to more efficient processes enabled by broadband. They estimate that this (net) spillover multiplier can range from 0.07 to 7.28 of the direct effects, with a mid-point estimate of 3.65.⁶² Expressed as a multiple of the total multiplier effect (direct, indirect, and induced effects combined), their midpoint estimate is slightly above one.

Atkinson, Castro and Ezell (2009) also examine the impact of spillover effects.⁶³ They explain how broadband investment facilitates: (1) innovative applications such as telemedicine, e-commerce, online education and social networking; (2) new forms of commerce and financial intermediation; (3) mass customization of products; and (4) marketing of excess inventories and optimization of supply chains. They explain that network externalities should not decline with the build out of networks and maturing technology over time, because penetration has not reached 100 percent and because faster connections should permit a new round of application innovation. Based on a \$10 billion broadband investment program, they estimate 268,480 jobs via spillover effects, implying a spillover multiplier of 1.17.

Finally, a 2013 study by The Wireless Infrastructure Association (PCIA) explains how new technologies have been made possible as wireless broadband exceeded a critical threshold where innovators and users of new technologies “can move forward with their business plans with the knowledge that the underlying infrastructure will be there to serve them.”⁶⁴ For example, the technology for mobile payments has been growing due to the pervasiveness of wireless broadband infrastructure.⁶⁵ The study estimates that projected mobile broadband

⁶⁰ Raul Katz & Stephan Suter, Estimating the Economic Impact of the Broadband Stimulus Plan, at 20.

⁶¹ *Id.* at 21.

⁶² *Id.* at 26.

⁶³ Robert D. Atkinson, Daniel Castro and Stephen J. Ezell, *The Digital Road to Recovery: A Stimulus Plan to Create Jobs, Boost Productivity and Revitalize America*, INFO. TECH. & INNOV. FOUND. (Jan. 2009), available at <http://www.itif.org/files/roadtorecovery.pdf>.

⁶⁴ Alan Perce, Richard Carlson, and Michael Pagano, Wireless Broadband Infrastructure: A Catalyst for GDP and Job Growth 2013-2017, PCIA (Sep. 2013), 9, available at http://www.pcia.com/images/IAE_Infrastructure_and_Economy_Fall_2013.PDF.

⁶⁵ Gartner, Gartner Says Worldwide Mobile Payment Transaction Value to Surpass \$171.5 Billion, Press Release, May 29, 2012, available at <http://www.gartner.com/newsroom/id/2028315>.

investments of roughly \$35.5 billion per year will increase GDP by 1.6 percent to 2.2 percent, and will create 303,740 jobs in the first year of the study. Although their study focuses on the impact of wireless broadband investments, it nevertheless offers another application of the spillover effect. Figure 13 summarizes the relevant economic literature on spillover effects.

Figure 13. SUMMARY OF SPILLOVER EFFECTS FROM BROADBAND INVESTMENT

Study	Annual Investment (\$B)	Projected Total Jobs (000s)	Spillover Jobs (000s) (Spillover Multiplier)
Crandall & Singer (2010)	30.4	961.0	452 (0.89)
PCIA (2013)	35.5	303.7	194.9 (1.79)
Katz & Suter (2009)	6.4	263.9	136.1 (1.06)
Atkinson, Castro & Ezell (2009)	10.0	498.0	268.5 (1.17)

Given the consistency with which various researchers have used a spillover multiplier of slightly over one additional network-induced job per every job created via the total multiplier, we adopt the spillover estimate of one. Figure 12 above shows the results from combining the job gains when spillover effects are included.

As seen in Figure 12, when spillover effects are taken into account, the aggregate annual jobs created in the Conservative case come to 4,428 per year and 6,352 in the Upside case.

Economic Output

Finally, one can measure the multiplicative effect of broadband investment on economic output. This occurs because higher expenditures on broadband equipment—equivalent to higher demand for the products of equipment manufacturers—cause equipment manufacturers to hire more employees to meet the increased demand. The equipment manufacturers' incomes increase as well due to the increased expenditures, which, according to the consumption function, will increase their consumption as well. The increased consumption of equipment manufacturers will in turn increase the income and employment of their suppliers. The income and employment of those suppliers will then increase, triggering another round of spending.

Eisenach, Singer, and West estimate the weighted average output multipliers for FTTP investment (3.1293),⁶⁶ and for Cable investment (2.8063).

⁶⁶ Eisenach, Singer, West, *supra*, at 8.

Figure 14. Annual Output Increase from Forbearance (\$ millions)

	Conservative Case	Upside Case
[A] Asset-Light Service Provider Annual Incremental CapEx (\$M)	(\$20.33)	(\$20.33)
[B] ILEC Annual Incremental CapEx (\$M)	\$98.84	\$98.84
[C] Other Next-Generation Service Provider Annual Incremental CapEx (\$M)	\$38.15	\$103.38
[D] Asset-Light Service Provider Annual GDP Impact (\$M) = [B] * (2.8)	-\$57	-\$57
[E] ILEC Annual GDP Impact (\$M) = [A] * (3.1)	\$309	\$309
[F] Other Next-Generation Service Provider Annual GDP Impact (\$M) = [B] * (2.8)	\$107	\$290
[G] Aggregate Annual GDP Impact = [D] + [E] + [F]	\$359	\$542

Based on these estimates, in the Conservative case, forbearance could increase economic output by roughly \$359 million per year over a ten-year period. In the Upside case, forbearance could increase economic output by \$542 million per year over a ten-year period. Thus, forbearance is projected to increase GDP by up to \$5.4 billion over ten years.

Consumer Welfare Effects

Consumer surplus is the difference between a customer's willingness-to-pay and the price actually paid for a good or service.⁶⁷ If a customer pays \$40 per month for Internet connection worth \$100, the customer enjoys surplus of \$60 per month. An increase in surplus can result from lower prices, higher quality, or (in the case of forbearance) both.

Forbearance can generate an increase in consumer surplus through three channels. *First*, migration to next-generation services will allow customers to pay lower prices. *Second*, customers will benefit from enhanced quality of next-generation services, such as faster connection speeds. *Third*, forbearance may increase competition in underserved markets, resulting in additional price competition and additional surplus gains. In this section, we quantify the first two effects (because the third effect is not quantified, our estimates are conservative).

⁶⁷ See, e.g., ROBERT S. PINDYCK & DANIEL L. RUBINFELD, MICROECONOMICS 122 (Prentice-Hall 4th ed. 1997). DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 70 (Pearson Addison Wesley 4th ed. 2005); N. GREGORY MANKIW, PRINCIPLES OF MICROECONOMICS 135 (Dryden Press, 1st ed. 1997).

Consumers Will Pay Less on Net Due to Forbearance

As explained above, asset-light service providers may respond in different ways to forbearance. Some may accept a lower profit margin and maintain the same prices to end-customers (implying no change in consumer surplus); others may pass through the cost increase (implying a loss in consumer surplus); still others may discontinue services or lose consumers to next-generation services (implying increased consumer surplus from higher-quality services at lower price points). Our analysis yields estimates of the welfare effects associated with each of these three categories.

In the status quo scenario, the estimated weighted-average price of legacy services is \$74 per month. If forbearance is granted and end-customers gradually migrate, the weighted-average price of legacy services increases to \$92 per month in Year 1 for customers of asset-light service providers that pass on 100 percent of the wholesale cost increase to their customers. Finally, the weighted average price for next-generation services is estimated at \$40 per month.

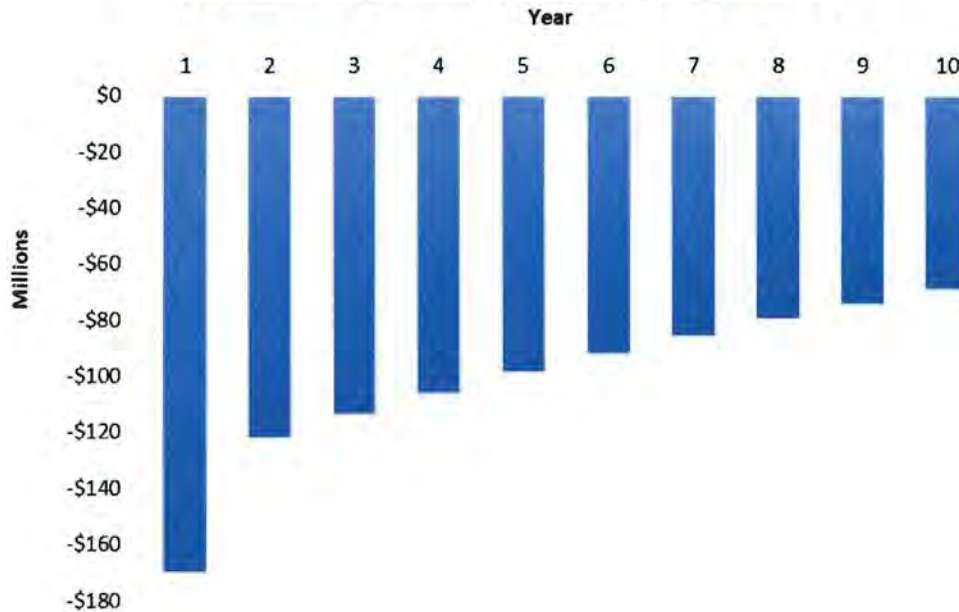
Because our model conservatively assumes gradual migration, 60 percent of customers initially remain with their legacy services. Of these, half (equal to 30 percent) continue to pay the same price, and half (equal to 30 percent) pay a higher price due to pass-through from the asset-light service provider. Finally, the remaining 40 percent of customers migrate to next-generation service, achieving substantial savings in the process.⁶⁸ Averaging across all customers, the net change in expenditure under this scenario is a decrease of approximately \$8 per customer per month (equal to $0.30 \times 0 + 0.30 \times (\$74 - \$92) + 0.40 \times (\$74 - \$40)$).

Figure 15 displays the net annual increase in surplus under the two scenarios. The welfare benefits taper off in later years, as some customers would have eventually migrated to next generation services even in the absence of forbearance. Aggregating across all ten years, customers are estimated to benefit by \$1 billion, relative to the status quo.⁶⁹

⁶⁸ This implies that, by failing to migrate to lower-price, higher-quality next generation services so far, at least some of the approximately 2.1 million remaining UNE lines are being used to serve legacy customers that are, in effect, overpaying for their service. That some customers would, at the margin, be nudged into superior alternatives by forbearance is consistent with both the behavioral economics literature, and with prior experience in the telecommunications industry, which has been characterized by substantial customer inertia even when unambiguously superior alternatives become available. See, e.g., STEPHEN MARTIN, *INDUSTRIAL ORGANIZATION IN CONTEXT* (Oxford University Press 2009), at 161. See also Andrew Card & Hal Singer, *Lessons From Kahneman's Thinking, Fast and Slow: Does Behavioral Economics Have a Role In Antitrust Analysis* ANTITRUST SOURCE 1-9 (August 2012).

⁶⁹ As explained in Part 2 above, consumer savings could approach \$5.9 billion over ten years if migration to next generation services proceeds at a more accelerated pace).

Figure 15. Total Annual Change in Consumer Expenditure



Enhanced Service Quality from Migration to Next Generation Services

Connection speed is a key dimension of broadband and wide area network service quality.⁷⁰

High-speed Internet connections enable business to leverage cloud services, and to support advanced web-based services, video conferencing, and data security⁷¹ while high-speed, high-availability dedicated services can also be used for point-to-point WAN connections.

A study published by Nevo, Turner, and Williams (2016) estimates a flexible distribution of willingness to pay (“WTP”) for various dimensions of broadband service.⁷² Based on their model, the authors estimate an average WTP of approximately \$2 per month for every 1Mbps increase in connection speed.⁷³ Nevo et al. derive this estimate by analyzing residential broadband demand. If anything, the corresponding WTP for increased speed is likely higher among business customers, given businesses’ higher overall WTP for broadband services.

⁷⁰ According to the FCC, speed actual download and upload speeds remain the network performance metric of greatest interest to customers. See FCC, *Measuring Fixed Broadband Report* (2016), available at: https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-fixed-broadband-report-2016#_Toc464398833

⁷¹ CenturyLink, 5 Reasons High-Speed Internet Is Crucial for Business, May 7, 2014, available at <http://www.centurylinkbrightideas.com/five-reasons-why-high-speed-internet-is-crucial-for-business/>

⁷² Nevo, Aviv, John L. Turner, and Jonathan W. Williams. *Usage-Based Pricing and Demand for Residential Broadband* 84(2) *Econometrica* 411-443 (2016), at 2.

⁷³ *Id.* at 2.

Accordingly, we use \$2 month per 1Mbps as a conservative estimate of the welfare gains to customers from the enhanced service quality of next generation services.

Next-generation services offer significantly higher speeds relative to legacy services. The average connection speed for Next-generation services is approximately 8.84Mbps, while the average connection speed for legacy services is approximately 7.17Mbps. The welfare gains to customers from enhanced service quality can be estimated by calculating the marginal gain in service speed from switching to Next-generation services, relative to the status quo switching rate, multiplied by a rate of \$2 per month for every Mbps gained. The aggregate ten-year welfare gain from improved connection speeds is estimated at \$29 million.

Increased Competition in Underserved Markets

To the extent that forbearance will increase the number of competitors offering next-generation residential services in under-served markets—that is, markets served by a single wireline provider at 25Mbps down—customers will benefit even further. Prior economic studies quantified the extent to which incumbent wireline broadband providers tend to drop their prices in response to entry by competitors. Using a regression model on an FCC dataset at the census tract level, Wallsten and Mallahan (2010) demonstrated that prices for cable modem service were between \$1.25 to \$4.84 per month lower where cable faced an overbuilder (a firm that builds a rival broadband delivery system for the same set of consumers).⁷⁴ More recently, Mahoney and Rafert (2016) estimated that an increase of one competitor serving a Designated Market Area is associated with a \$1.50 decline in the monthly standard broadband price for Internet plans with speeds ranging from 50Mbps to less than 1 Gbps.⁷⁵ If the entrant offers faster speeds, the price declines are more dramatic: The presence of gigabit internet is associated with a decline in the monthly standard broadband price of between approximately \$13 and \$18 for plans for download speeds between 25Mbps and 1 Gbps.⁷⁶ Although we cannot quantify the extent to which forbearance may result in new

⁷⁴ Scott Wallsten and Colleen Mallahan, “Residential Broadband Competition in the United States,” BE Press Working Paper, March 2010, p. 32, table 7, *available at*: http://works.bepress.com/cgi/viewcontent.cgi?article=1105&context=scott_wallsten The authors found that cable modem prices declined between \$1.25 (cable speed tier 6) and \$4.84 (cable speed tier 5) per month when cable modem providers faced an overbuilder. Coefficients were estimated at the 1 percent significance level. In contrast, the authors found that cable modem prices did not decline significantly when cable providers faced DSL or FTTP providers (their “two-provider” results), suggesting either that DSL did not constrain the price of cable modem service, thereby neutralizing the impact of fiber competition, or that neither DSL nor fiber constrained the price of cable modem service. Unfortunately, the authors did not estimate the incremental price-constraining effect of fiber only.

⁷⁵ Dan Mahoney and Greg Rafert, “Broadband Competition Helps to Drive Lower Prices and Faster Download Speeds for U.S. Residential Consumers,” Analysis Group, November 2016, at 1.

⁷⁶ *Id.*

investment and entry in under-served markets (as opposed to markets that are already served by two or more wireline providers at 25Mbps down), the benefits to customers in under-served markets could be quite substantial.

Conclusion

Granting ILECs forbearance from the requirements of Section 251(c)(3) will eliminate a market-distorting pricing mechanism that retards progress from legacy telecommunications services to next-generation services in two ways: one, it distorts end-customer and service provider incentives to migrate to next-generation services by forcing UNEs to be sold at below-market rates; two, it transfers excess value to asset-light service providers, who do not invest in next-generation networks at the same level of capital intensity as facility-based service providers. By introducing market rationality to the sale of ILEC unbundled network elements, the FCC can initiate a virtuous feedback loop that will bring savings and welfare gains to consumers, additional capital investment in next-generation networks, new direct and indirect jobs due to the capital investment and general benefits to the economy as a whole.