



February 19, 2016

**VIA ELECTRONIC FILING**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street SW  
Washington, DC 20554

**Re: *Special Access for Price Cap Local Exchange Carriers; WC Docket No. 05-25, RM-10593***

Dear Ms. Dortch:

Pursuant to the procedures outlined in the *Data Collection Protective Order*<sup>1</sup> in the above-referenced proceedings, Sprint Corporation (“Sprint”) hereby submits a redacted version of the attached reply comments for electronic filing. Confidential and highly confidential treatment of the redacted portions of the attached document is required to protect information derived from data submitted in response to the FCC’s *Data Collection Order*.<sup>2</sup>

In accordance with the *Data Collection Protective Order*, Sprint will file a hard copy of the attached document with the Secretary’s Office, and deliver two additional hard copies to Christopher S. Koves, Pricing Policy Division, Wireline Competition Bureau, without redaction.

Please contact me if you have any questions or require any additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read "J. Bagg".

Jennifer P. Bagg  
*Counsel to Sprint Corporation*

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<sup>1</sup> *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*, Order and Data Collection Protective Order, 29 FCC Rcd. 11,657 (Wireline Comp. Bur. 2014) (“*Data Collection Protective Order*”).

<sup>2</sup> *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*, Report and Order and Further Notice of Proposed Rulemaking, 27 FCC Rcd. 16,318 (2012) (“*Data Collection Order*”).

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of )  
)  
Special Access for Price Cap Local ) WC Docket No. 05-25  
Exchange Carriers )  
)  
AT&T Corporation Petition for ) RM-10593  
Rulemaking to Reform Regulation of )  
Incumbent Local Exchange Carrier Rates )  
for Interstate Special Access Services )

REPLY COMMENTS OF SPRINT CORPORATION

A. Richard Metzger, Jr.  
Emily Daniels  
Lawler, Metzger, Keeney & Logan, LLC  
2001 K Street NW, Suite 802  
Washington, DC 20006  
(202) 777-7700

Paul Margie  
Jennifer Bagg  
Walter E. Anderson  
V. Shiva Goel  
Harris, Wiltshire & Grannis LLP  
1919 M Street NW, 8th Floor  
Washington, DC 20036  
(202) 730-1300

*Counsel for Sprint Corporation*

Charles W. McKee  
*Vice President, Government Affairs  
Federal & State Regulatory*  
Chris Frentrup  
*Director, Senior Economist*  
Sprint Corporation  
900 Seventh Street NW, Suite 700  
Washington, DC 20001  
(703) 433-3205

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**EXECUTIVE SUMMARY**

To escape the inconvenient results of the Federal Communications Commission’s (“FCC” or “Commission”) comprehensive data collection regarding dedicated broadband services, known as “special access services,” the incumbent local exchange carriers (“incumbent LECs”) have ignored the giant elephant in the room of this proceeding: the exceedingly small percentage of special access customer locations that benefit from effective competition. Although they claim that the special access market is highly competitive, the incumbent LECs fail to offer any measure of actual competition to aid the Commission’s review of the data. Instead, the incumbents provide the Commission with a flawed assessment of potential competition that relies on the incorrect assumption that, if a single non-incumbent provider has any fiber facilities of any type in a census block, then there is effective competition for all special access products across the entire block.

This assumption is absurd, and it exposes three fundamental flaws that are fatal to the incumbent LECs’ already limited analysis. First, the incumbent LECs’ analysis utilizes overly broad and misleading market definitions in assessing potential competition. Second, with convenient modeling, it ignores the enormous barriers to last-mile entry that competitive local exchange carriers (“competitive LECs”) face. Third, the analysis wrongly assumes that a duopoly (or, more accurately, a potential duopoly) is sufficient to impose durable competitive constraints that will adequately discipline incumbent behavior.

That the incumbents have resorted to this type of analysis is telling. Indeed, in apparent recognition of the weakness of their methodology, the incumbent LECs criticize the data collection as incomplete. But they ignore that the data set remains remarkably comprehensive, and that it likely understates the extent of incumbent dominance because of the incumbents’ own

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omissions in response to the Commission’s data request. The incumbents then turn to sources other than the data collection in a scramble to show that competition is on the cusp of materializing. A sober assessment of this other evidence, however, yields the same conclusion compelled by the data itself—cable providers and competitive LECs have not ushered in a new era of facilities-based special access competition and are in no position to do so in the near future. This evidence also shows that the ongoing transition to IP networks and growing importance of wireless backhaul are not antidotes that will rapidly cure an ailing special access marketplace, but rather vulnerabilities that threaten to leave the U.S. economy more exposed than ever to the harms of incumbent dominance.

The sensible analyses of the Commission’s data now on the record establish that competition is sorely lacking in the special access marketplace. They confirm that this problem is both pervasive and responsible for high prices for broadband access that inflict extraordinary harms on consumers, innovation, and the U.S. economy at large. The massive record compiled over the course of this extensive proceeding demonstrates the urgency with which the Commission must act as it begins the process of repairing the broken special access marketplace. The record also provides the Commission with the footing it needs to take immediate steps that would promote competition for dedicated broadband services.

Sprint therefore urges the Commission to take action now to provide immediate relief to U.S. broadband markets. Specifically, the Commission should determine that incumbent LEC loyalty plans and lock-up terms and conditions are unenforceable and offer competitive providers a “fresh look” to consider alternatives to incumbent special access services where those alternatives are available. The Commission must also take steps to reduce the exorbitant rates imposed by incumbents by bringing all special access products within the existing price cap

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regime and adopting new “triggers” to identify the limited areas that benefit from effective competition. After doing so, the Commission should establish an appropriate mechanism for making a one-time reduction in price caps that will lower special access prices to lawful levels and then adopt a going-forward X-factor. These initial steps will help to mitigate the ongoing harms inflicted by the incumbent LECs’ dominance of the special access marketplace. Once completed, the Commission can continue to explore the use of mechanisms, including competitive benchmarks and cost models, likely to help ensure that dedicated broadband prices remain just and reasonable in the absence of effective competition.

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Attachment 1 Declaration of David Sappington

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**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Special Access for Price Cap Local Exchange Carriers	)	WC Docket No. 05-25
	)	
AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services	)	RM-10593

**REPLY COMMENTS OF SPRINT CORPORATION**

Sprint Corporation (“Sprint”) hereby submits these reply comments in response to Section IV.B of the Federal Communication Commission’s (“FCC” or “Commission”) Further Notice of Proposed Rulemaking issued on December 18, 2012, in the above-captioned proceedings.<sup>1</sup> As set forth below, these reply comments respond to the incumbent local exchange carriers’ (“incumbent LECs” or “ILECs”) comments regarding the collected special access data, expand upon Sprint’s initial filing with significant support from the submissions of other commenters,<sup>2</sup> and provide suggestions for changes to the regulatory framework governing special access that the Commission should consider based on its review of the collected data.

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<sup>1</sup> *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*, Report and Order and Further Notice of Proposed Rulemaking, 27 FCC Rcd. 16,318, ¶ 1 (2012) (“*2012 R&O and FNPRM*”).

<sup>2</sup> Comments of Sprint Corporation, WC Docket No. 05-25 (filed Jan. 27, 2016) (“Sprint Comments”).

## I. INTRODUCTION AND SUMMARY

The record compiled in response to the Commission’s comprehensive special access data collection is clear: twenty years after the Telecommunications Act opened the market to competition, the incumbent LECs remain the sole provider of special access services in the vast majority of locations where special access is sold. Despite decades of claims that competitive alternatives to special access were just around the corner, the ILECs’ dominance remains firmly entrenched. Based on these findings, it is imperative that the Commission act now to repair the broken special access marketplace and implement remedial measures that will produce desperately needed relief from the incumbent LECs’ marketplace dominance. Such action will spur innovative new services and benefit American consumers and the U.S. economy.

The incumbent LECs’ latest assessments of competition in the special access marketplace are fundamentally flawed. First, the incumbent LECs fail to address the state of actual competition in the marketplace. Instead, they attempt to characterize their potential competition assessment as an analysis of actual competition. While it is clear why the incumbent LEC’s seek to direct attention away from this fundamental starting point, the FCC should note that the lack of actual competition is evidence, in and of itself, that competition is not disciplining this critical marketplace.

Second, the incumbents’ analysis of potential competition is unsound. The incumbent LECs rely on excessively broad product and geographic market definitions which exaggerate the competitiveness of the marketplace by treating different services as substitutes for one another (*e.g.*, a DS1 and the highest-capacity circuit were treated as substitutes) and overstating the size of the geographic areas within which customers have competitive alternatives. The incumbent LECs also incorrectly expand the set of so-called competing participants in the special access marketplace—and the scope of purported competition—by arguing that “best efforts” and fixed

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wireless services are substitutes for the dedicated services that special access customers rely on to meet their rigorous service quality needs. The incumbent LECs then ignore the extensive barriers to potential entry—the core of any sensible assessment of potential competition—to arrive at the ludicrous claim that the mere presence of facilities anywhere in a census block somehow constitutes effective competition at every location in the block.

Finally, even after using all of these techniques to avoid presenting the Commission with an economically sound analysis, the incumbent LECs base their findings of “competition” on the presence of only two possible suppliers. Basic economic theory and FCC precedent make clear that a duopoly is simply incapable of adequately disciplining prices, terms, and conditions.

The properly structured competition and concentration analyses already submitted in the record demonstrate that the special access marketplace is composed primarily of monopolies, and to some extent duopolies, and not “competition, competition, competition.” Specifically, the data demonstrate that the incumbent LEC is the sole provider at most locations. Even in the limited number of locations where an alternative facilities-based provider exists, the data confirm the absence of *effective* competition in all but a minute percentage of locations. Moreover, parties have established in the record that potential competition simply does not constrain the incumbent LECs’ ability to exercise their market power. Perhaps most damningly, commenters have provided significant data and other evidence confirming that the incumbent LECs wield their well-established market power to impose unreasonable rates, terms, and conditions to the detriment of competition and consumers.

The incumbent LECs once again repeat their arguments from years past that current trends in the special access marketplace soon will magically erode their entrenched market power. For decades, ILECs have argued that broadband over power lines or some other new

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offering just over the horizon will create competition in this marketplace. The data, however, demonstrate that no such competition has taken hold. Similarly, more recent offerings by cable providers simply do not presage a new emergence of special access competition. Moreover, Ethernet and other IP-based offerings have not supplanted TDM-based special access services, which continue to be the fundamental building blocks of today's special access marketplace, and the mere use of different technology to provide special access services has not created and cannot create genuine special access competition. Similarly, while wireless backhaul is a key input to competitive wireless services, the incumbent LECs are incorrect that the growing need for backhaul somehow mitigates or eliminates the incumbent LECs' market power in providing special access services.

Perhaps because the incumbent LECs are unable to rebut the overwhelming evidence of their dominance, they resort to attacking the Commission's efforts to compile a comprehensive set of marketplace data. After demanding for years that the FCC collect more data, it is telling that the incumbent LECs now want to avoid the consequence of their own request. These complaints are unfounded, and nothing more than an attempt to divert attention away from the obvious finding that the incumbent LECs hold and exploit market power. Moreover, it is worth noting that a number of the problems within the data set alleged by the incumbent LECs were created by the incumbent LECs' own failure to submit the requested information.

Rather than allow the incumbent LECs to succeed in their campaign to stall forward momentum in this lengthy proceeding, the Commission must respond to the overwhelming evidence that the incumbent LECs continue to dominate the special access marketplace by enacting both interim measures and long-term relief. With respect to interim measures, Sprint recommends that the Commission both find incumbent LEC loyalty and lock-up terms and

conditions unenforceable and offer competitive providers a “fresh look” to consider competitive alternatives where they are available.

To address the unjust and unreasonable rates that the incumbent LECs impose, the Commission also immediately should: (1) bring all special access product markets within the price cap regime; (2) adopt new “triggers” to identify areas that are subject to effective competition; (3) craft an appropriate mechanism for making a one-time reduction that will lower special access prices to reasonable levels; and (4) adopt a going-forward X-factor. Over the longer term, Sprint urges the Commission to explore alternatives for reforming supracompetitive prices going forward, including the use of competitive benchmarks and cost models.

## **II. THE INCUMBENT LECs’ ANALYSIS OF THE DATA IGNORES THE NEED TO ANALYZE ACTUAL COMPETITION**

The incumbent LECs claim to prove that actual and potential competition from alternate suppliers effectively disciplines the special access marketplace. To support this assertion, however, the incumbent LECs must turn the Commission’s well-tested framework for assessing competition on its head. In particular, while the incumbents assert that the Commission’s analysis of the special access marketplace must account for actual competition,<sup>3</sup> they nevertheless fail to produce even one quantitative measure of the competitiveness of today’s special access markets. For example, whereas a traditional competition analysis examines market characteristics, such as market shares and concentration, to determine the level of actual competition,<sup>4</sup> the incumbent LECs disregard these vital components of any comprehensive

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<sup>3</sup> Comments of CenturyLink, Inc. at ii, WC Docket No. 05-25 (filed Jan. 28, 2016) (“Any new regime must, consistent with legal precedent and principles of sound policymaking, account for both existing and potential competition.”) (“CenturyLink Comments”).

<sup>4</sup> *Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix, Arizona, Metropolitan Statistical Area*, Memorandum Opinion and Order, 25 FCC

market power analysis. Their analysis also fails to include any assessment of the revenue or bandwidth-based shares of special access service providers.

To be sure, the incumbent LECs have every reason to avoid a traditional analysis of actual competition. As Drs. Besen and Mitchell explain, actual competition is sorely lacking because, “almost all purchaser locations, \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*  
\*\*\* END HIGHLY CONFIDENTIAL \*\*\*, are served by only one or two suppliers.”<sup>5</sup> As described more fully below, the analyses in the record also demonstrate that the incumbent LECs hold extraordinarily high shares in the provision of special access services and that special access markets are highly concentrated.<sup>6</sup>

Instead of even attempting to counter these facts, the incumbent LECs argue that they have “deduced that ILECs face competition for special access services in areas where competitors have made sunk investments in competitive facilities,” further asserting that “[s]unk investment thrusts rivals into intense price competition.”<sup>7</sup> While the incumbent LECs claim that

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Rcd. 8622, ¶¶ 28, 42 (2010), *aff’d*, *Qwest Corp. v. FCC*, 689 F.3d 1214 (10th Cir. 2012) (“*Qwest Order*” or “*Qwest*”).

<sup>5</sup> Declaration of Stanley M. Besen and Bridger M. Mitchell ¶ 26 (dated Jan. 27, 2016), appended as Attachment 1 to Sprint Comments (“Besen/Mitchell Decl.”).

<sup>6</sup> See discussion *infra* Section IV.A.

<sup>7</sup> Mark Israel, Daniel Rubinfeld, and Glenn Woroch, *Competitive Analysis of the FCC’s Special Access Data Collection*, at 4, 7 (dated Jan. 26, 2016), attached to Letter from Glenn Woroch, Department of Economics, University of California, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 05-25 (filed Jan. 28, 2016) (“ILEC White Paper”); *id.* at 8 (asserting that sunk investment provides a “more accurate and complete assessment of competition” than historical market shares); see also, e.g., Comments of Alaska Communications at 5, WC Docket No. 05-25 (filed Jan. 28, 2016) (arguing that “sunk investment in competitive facilities that can be used for special access is a reliable indicator of the emergence of fundamental, durable, irreversible competition, *regardless* of the number of actual competitors at any given time”) (emphasis added) (“Alaska Communications Comments”).

their “deduction” is consistent with precedent, the definition of “market participants” (*i.e.*, actual competitors) is quite different.

The Commission and Department of Justice define “market participants” as “all firms that currently earn revenues in the relevant market,” as well as firms “committed to entering the market in the near future,” and firms that “would very likely provide rapid supply responses with direct competitive impact in the event of a [small but significant and non-transitory increase in price (SSNIP)], without incurring significant sunk costs.”<sup>8</sup> The agencies “will not presume that an entrant can have a significant impact on prices before that entrant is ready to provide the relevant product to customers unless there is reliable evidence that anticipated future entry would have such an effect on prices.”<sup>9</sup>

Plainly, the incumbent LECs did not bother to analyze those firms that currently provide service at a particular location, or even in a census block. As Drs. Besen and Mitchell demonstrate in explaining the limited utility of facility map-based findings, “in fewer than \*\*\* **BEGIN HIGHLY CONFIDENTIAL \*\*\*** [REDACTED] **\*\*\* END HIGHLY CONFIDENTIAL** \*\*\* of the census blocks in which the FCC reports that at least one [competitive local exchange carrier (“competitive LEC” or “CLEC”)] has fiber does any CLEC actually provide service to a purchaser.”<sup>10</sup> The incumbent LECs’ arguments, therefore, hinge on their baseless assertion that providers with facilities in a census block are likely to rapidly and efficiently enter the special

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<sup>8</sup> *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*, Report and Order, 27 FCC Rcd. 10,557, ¶ 99 (2012) (“2012 Suspension Order”) (quoting U.S. DEP’T OF JUSTICE AND FED. TRADE COMM’N, *Horizontal Merger Guidelines*, § 5.1 (Aug. 19, 2010), <http://www.justice.gov/atr/horizontal-merger-guidelines-08192010> (“*Horizontal Merger Guidelines*”)).

<sup>9</sup> *Horizontal Merger Guidelines* § 9.1.

<sup>10</sup> Besen/Mitchell Decl. ¶ 30.

access marketplace. That is to say, in order to adopt the incumbent LECs’ strained interpretation of actual competition, the Commission would have to believe that *every* company that has fiber traversing a census block is ready, willing, and able to provide service rapidly and inexpensively to every location within that census block. Thus, as former FCC Chief Economist Dr. David Sappington explains, the incumbent LECs’ analysis “effectively assume[s] that a competitive supplier that has deployed fiber in a census block can serve any customer located in that block at low incremental costs[.]”<sup>11</sup> As explained further by Dr. Sappington, and as described in more detail below,<sup>12</sup> marketplace realities disprove this line of reasoning. The possibility of competitive entry at most customer locations is so remote that a provider with no customer locations within a census block should not be considered a potential competitor, much less an actual competitor or market participant.

Accordingly, the incumbents fail to demonstrate how a company with facilities in a census block—but not a single special access customer—is “very likely” to rapidly supply special access services, much less to provide “reliable evidence” that this speculative future entry will discipline prices. Furthermore, the incumbents also fail to demonstrate how a company providing special access services in one portion of a census block is “very likely” to rapidly supply special access service to all locations within the block. As Dr. Sappington concludes, “[i]n simply asserting that nearby CLEC fiber will effectively constrain ILEC pricing of special access services, the ILEC economists fail to meet the requisite burden of proof.”<sup>13</sup>

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<sup>11</sup> Declaration of David Sappington ¶ 13, appended as Attachment 1 hereto (“Sappington Decl.”).

<sup>12</sup> *See infra* Section III.B.

<sup>13</sup> Sappington Decl. ¶ 14.

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Indeed, the pure fiction of the incumbents' account is exposed by their own history of unreliable narration. As Ad Hoc discusses in greater detail,<sup>14</sup> the incumbent LECs have been alleging that “competition is coming” for over a decade. For example, Verizon claimed in 2005 that it faced an “explosion of alternative providers of high-capacity services” that provide “tremendous competition.”<sup>15</sup> Similarly, AT&T alleged that its 2005 analysis demonstrated that it must contend with “substantial and growing actual and potential special access competition” from competitive providers that “constrain AT&T’s prices even in areas where they have not yet deployed facilities.”<sup>16</sup> If effective competition actually had emerged over the years, the Commission can be sure that the incumbent LECs would cite to credible, relevant data about the actual earnings of competitive firms, rather than recycle their tired claims that competition is imminent.

Worse yet, some incumbent LECs engage in linguistic gymnastics to obscure this fundamental flaw in their analysis and give the illusion that they have appropriately accounted for actual competition. For example, AT&T asserts that all firms that have a connection or fiber route in a census block, even in only a discrete area, are actual competitors because they “are actually competing in the marketplace for the right to build (what remain ‘potential’) direct connections to a location.”<sup>17</sup> Others go further by asserting that competition exists where there is none. Alaska Communications, for example, indicates that the incumbent LEC analysis

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<sup>14</sup> Comments of the Ad Hoc Telecommunications Users Committee at 3-4, 6-11, WC Docket No. 05-25 (filed Jan. 28, 2016) (“Ad Hoc Comments”).

<sup>15</sup> Comments of Verizon at 8, WC Docket No. 05-25 (filed June 13, 2005).

<sup>16</sup> Supplemental Comments of AT&T Inc. at 8, WC Docket No. 05-25 (filed Aug. 8, 2007).

<sup>17</sup> Comments of AT&T Inc. at 7-8, WC Docket No. 05-25 (filed Jan. 28, 2016) (“AT&T Comments”).

demonstrates that businesses “located in census blocks where there is demand for special access services are *served* by one or more facilities-based . . . competitive providers.”<sup>18</sup> CenturyLink similarly argues that when “[e]xamined from every plausible perspective, the data show extensive competitor-deployed facilities *providing* and competing for the DS1- and DS3-capacity services at issue here.”<sup>19</sup> But this simply is not what the data show. As noted, the statistics cited by the incumbent LECs to support their claims of a competitive marketplace do not even measure the presence of alternative providers that are actually serving customers today. Indeed, the only measures of actual competition that have been provided in the record show a marketplace dominated by the incumbents and demonstrate that they face *no* competition today at the vast majority of locations where special access service is provided.

### **III. THE INCUMBENT LECs’ POTENTIAL COMPETITION ANALYSIS VASTLY OVERSTATES THE PRESENCE OF COMPETITION**

Unable to show that actual competition disciplines their anti-competitive behavior, the incumbent LECs rely exclusively on the presence of potential competition. But the incumbents analyze potential competition incorrectly and vastly overstate the degree of competition in the special access marketplace. Most notably, the incumbent LECs allege that there is competition throughout every census block where any provider has deployed either (1) fiber facilities in any portion of the census block, even if there is no evidence that a so-called “competitor” is either willing or able to serve a single location or a single additional location in the census block, or (2) best efforts broadband services, despite the fact that these services simply are not a substitute for special access offerings.<sup>20</sup> Thus, the incumbent LECs’ entire analysis rests on the assertion that

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<sup>18</sup> Alaska Communications Comments at 3 (emphasis added).

<sup>19</sup> CenturyLink Comments at 6 (emphasis added).

<sup>20</sup> ILEC White Paper at 16, 20.

the presence of any type of non-incumbent fiber facilities, in any location, amounts to effective competition for all special access products across an entire census block.

As explained below, this assertion contravenes established principles of competition analysis in three respects. First, it relies on incorrect product and geographic market definitions that are unmoored from marketplace realities.<sup>21</sup> Second, instead of considering whether potential entry would be “timely, likely, and sufficient to counteract the exercise of market power,”<sup>22</sup> it ignores the substantial barriers preventing entry in the incumbent-dominated last mile. Finally, it incorrectly assumes that the presence of one competitor creates effective, price- and conduct-disciplining competition in a relevant market.

**A. The Incumbent LECs Rely on Overly Broad Product and Geographic Market Definitions**

Market definition plays two key roles in performing a traditional market power analysis—“specify[ing] the line of commerce and section of the country in which the competitive concern arises,” and allowing the reviewing agency “to identify market participants and measure market shares and market concentration.”<sup>23</sup> The use of excessively broad market definitions inevitably will exaggerate the competitiveness of a marketplace, treating distinct services as substitutes and overstating the size of the geographic areas within which customers have competitive alternatives. The incumbent LECs have a compelling incentive to convince the Commission to adopt such flawed market definitions in order to conceal their continued

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<sup>21</sup> *Qwest Order* ¶¶ 56, 64.

<sup>22</sup> *Id.* ¶ 28.

<sup>23</sup> *Horizontal Merger Guidelines* § 4; see also, e.g., *Implementation of Section 19 of the Cable Television Consumer Protection and Competition Act of 1992 Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, First Report, 9 FCC Rcd. 7442, ¶ 38 (1994) (recognizing that defining product and geographic markets is an “important first step in assessing whether a firm has market power”).

dominance. The Commission should reject this transparent ploy summarily and instead adopt product and geographic market definitions that are consistent with both its own precedent and today's marketplace realities. When the appropriate product and geographic markets are employed, the data demonstrate that the incumbent LECs continue to have market power in the provision of special access services to the vast majority of customer locations across the nation.

**1. The incumbent LECs' product market definition is expansive, misleading, and wrong.**

In analyzing the marketplace for special access services, the incumbent LECs consider only a single "special access" product market, defined broadly to "refer to business data services that include conventional TDM and Ethernet dedicated lines as well as best efforts internet access."<sup>24</sup> The Commission should reject this approach, because the record plainly shows that these transmission services are not substitutes for each other.

The marketplace for special access services includes a variety of separate product markets. First, channel terminations and channel mileage or transport are in distinct product markets because the two services perform fundamentally different functions.<sup>25</sup> As XO notes, both XO and the "industry in general use transport and channel terminations for distinct reasons, even if the two facilities may be cross-connected."<sup>26</sup> Thus, a customer cannot respond to a price increase for a channel termination by purchasing a greater quantity of transport. Second, as Sprint explains in its comments, the FCC should treat special access offerings as belonging to separate product markets if they involve substantially different capacity levels.<sup>27</sup> For example,

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<sup>24</sup> ILEC White Paper n.4.

<sup>25</sup> See Sprint Comments at 10-11.

<sup>26</sup> Comments of XO Communications, LLC at 22, WC Docket No. 05-25 (filed Jan. 27, 2016) ("XO Comments").

<sup>27</sup> See Sprint Comments at 11-12, 14-16.

DS1s and their Ethernet-based equivalents should be assigned to a separate product market than DS3s and their Ethernet-based equivalents. This approach is fully consistent with the Commission’s prior finding that “circuits of differing capacities . . . are likely to constitute separate relevant product markets.”<sup>28</sup> Moreover, this definition appropriately accounts for the fact that Ethernet and TDM services with comparable capacities and prices are substitutes for one another and, thus, part of the same relevant product market. As AT&T itself has noted, “Ethernet is simply a *service* that can be provided over many different types of transport facilities.”<sup>29</sup> Accordingly, “it is the capacity of the connection, rather than the technology used to deliver the capacity, that should drive categorization.”<sup>30</sup>

The Commission also must reject the incumbent LECs’ efforts to sweep services such as best efforts broadband and fixed wireless offerings into the FCC’s analysis.<sup>31</sup> Contrary to the incumbent LECs’ self-serving claims, purchasers simply do not view these offerings to be substitutes for special access services. As a result, these services are not part of *any* special access product market and should be excluded entirely from the Commission’s analysis.

***Best Efforts.*** The incumbent LECs wrongly claim that “best efforts” broadband services are effective substitutes for DS1, DS3, and other special access services. As a result, the incumbents allege that such services act as a “competitive alternative to traditional high-capacity dedicated services like traditional special access.”<sup>32</sup> While the incumbents concede that “best-

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<sup>28</sup> *Qwest Order* ¶ 49.

<sup>29</sup> Reply Comments of AT&T, Inc. at 74, WC Docket No. 05-25 (filed Feb. 24, 2010) (emphasis added).

<sup>30</sup> Sprint Comments at 16.

<sup>31</sup> *See, e.g.*, Comments of Verizon at 20, WC Docket No. 05-25 (filed Jan. 28, 2016) (“Verizon Comments”).

<sup>32</sup> Comments of the United States Telecom Association at 21, WC Docket No. 05-25 (filed Jan. 28, 2016) (“USTelecom Comments”); *see also* Verizon Comments at 38 (alleging that “best

efforts broadband differs in some respects from traditional special access,” they assert that “these differences are not critical for many customers, and also are diminishing.”<sup>33</sup>

To the contrary, the technical and other qualitative differences between best efforts offerings and special access services remain so significant that “services provided on a ‘best-efforts’ basis are not regarded by most purchasers as substitutes for special access dedicated circuits at guaranteed service levels.”<sup>34</sup> Among other distinctions, best efforts services:

- Lack robust service level assurances and the “ability to prioritize traffic among different Quality of Service (‘QoS’) levels for different applications”;<sup>35</sup>
- Do not include the required high level of security;<sup>36</sup>
- May “lack the dedicated bandwidth (in both directions) [that dedicated service] customers require”;<sup>37</sup> *and*
- Cannot be personalized or offer customized customer support, as often is required by dedicated service customers.<sup>38</sup>

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efforts” services “for many customers offer a viable substitute to traditional special access and other high-capacity services”).

<sup>33</sup> Verizon Comments at 39.

<sup>34</sup> Besen/Mitchell Decl. ¶ 16.

<sup>35</sup> Comments of Windstream Services, LLC at 13, WC Docket No. 05-25 (filed Jan. 28, 2016) (“Windstream Comments”); *see also, e.g., id.* (“The dedicated services offerings of both incumbents and competitors recognize customers’ needs for higher performance levels and traffic prioritization as a significant characteristic of their services.”); XO Comments at 26; Declaration of Chris McReynolds on Behalf of Level 3 Communications, LLC ¶ 20, appended as Appendix A to Joint CLEC Comments (“McReynolds Decl.”); Declaration of Dan Deem, Douglas Derstine, Mike Kozlowski, Arthur Nichols, Joe Scattareggia, and Drew Smith ¶ 39, appended as Attachment A to Windstream Comments (“Deem *et al.* Decl.”).

<sup>36</sup> *See, e.g.,* Baker Decl. ¶ 31; McReynolds Decl. ¶ 20; Windstream Comments at 12 (“Customers who require dedicated services typically need very reliable connections and sophisticated integration of their communications and information technology networks—including not just transport capacity but also equipment, network security, and remote management of network infrastructure, among others.”).

<sup>37</sup> Baker Decl. ¶ 31; *see also, e.g.,* XO Comments at 26 (“Ethernet services provide high speed symmetrical transmission capabilities; Best Efforts services’ speeds tend to be lower and vary considerably and generally are not symmetrical.”); McReynolds Decl. ¶ 20.

<sup>38</sup> *See, e.g.,* Deem *et al.* Decl. ¶ 40; Baker Decl. ¶ 31; Windstream Comments at 16-17.

## REDACTED – FOR PUBLIC INSPECTION

Taken together, these characteristics make it easy to understand why Sprint, as a wholesale purchaser of Ethernet, does not purchase best efforts Ethernet service, including those offered by cable companies.<sup>39</sup> Similarly, Level 3 notes that it “generally cannot rely on the cable companies’ standard best-efforts broadband Internet access in order to reach its customers,”<sup>40</sup> and “generally does not monitor or respond to the cable companies’ rates, terms, and conditions for these services.”<sup>41</sup> As Windstream succinctly concludes:

The bottom line of all these data is consistent: dedicated services and best efforts services are in separate product markets serving separate needs. Contrary to the large ILECs’ assertions, cable providers have focused on providing best effort services to those business customers that do not need the additional functionalities of, and are not willing to pay the premium for, dedicated services.<sup>42</sup>

Consequently, as Dr. Baker, a former FCC Chief Economist and Director of the Bureau of Economics at the Federal Trade Commission, finds, best efforts services fail the litmus test for including different offerings in the same relevant product market: “most customers of dedicated services would not substitute . . . a service provided over best efforts broadband in response to a small increase in the price of dedicated services, and few would substitute from best efforts broadband to dedicated services in response to a small decrease in the price of dedicated

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<sup>39</sup> Sprint Comments at 13.

<sup>40</sup> Declaration of Gary Black, Jr. on Behalf of Level 3 Communications, LLC ¶ 16, appended as Appendix C to Joint CLEC Comments (“Black Decl.”).

<sup>41</sup> McReynolds Decl. ¶ 20.

<sup>42</sup> Windstream Comments at 22-23.

services.”<sup>43</sup> As a result, the Commission should exclude best efforts services from special access product markets.<sup>44</sup>

*Fixed Wireless.* Incumbent LECs urge the Commission to include fixed wireless offerings in its analysis of competition on the basis that the well-documented service quality drawbacks of those services have been eliminated.<sup>45</sup> Specifically, they claim that the line-of-sight limitation related to fixed wireless offerings is “long gone,”<sup>46</sup> and that roof access and interference are no longer viewed “as practical concerns with providing [this type of] service.”<sup>47</sup> The incumbents further allege that there are no “valid remaining concerns about the reliability of fixed wireless.”<sup>48</sup> The record flatly contradicts these claims.

Dr. Baker notes, for example, that fixed wireless “is not generally viewed as a substitute” for retail customers in buildings “because of reliability issues arising from congestion, interference and rain fade; the necessity of locating equipment with a clear line of sight; and building access problems.”<sup>49</sup> Other commenters echo these findings, including several of the

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<sup>43</sup> Baker Decl. ¶ 31. Dr. Baker further noted that “the growth in demand for best efforts broadband by small retail customers and some mid-sized customers does not justify expanding a dedicated services product market to include best efforts broadband.” *Id.* ¶ 32.

<sup>44</sup> Besen/Mitchell Decl. ¶ 16; *see also* Black Decl. ¶¶ 16, 19 (finding that, “if providers of dedicated services were to increase the price of those services by \*\*\* **BEGIN HIGHLY CONFIDENTIAL** \*\*\* [REDACTED] \*\*\* **END HIGHLY CONFIDENTIAL** \*\*\*, Level 3 would be unable to shift a significant number of its dedicated services purchases from the incumbent LEC’s dedicated services to” the cable companies’ best efforts broadband Internet access services or Ethernet-over-HFC services).

<sup>45</sup> Verizon Comments at 64 (“The Commission’s analysis of competition must also include fixed wireless, use of which is surging.”).

<sup>46</sup> USTelecom Comments at 12.

<sup>47</sup> Verizon Comments at 50.

<sup>48</sup> USTelecom Comments at 13.

<sup>49</sup> Baker Decl. ¶ 34.

very providers that the incumbent LECs allege use fixed wireless services as substitutes for traditional special access services. For example, Windstream, which Verizon claims is particularly “bullish on this technology,”<sup>50</sup> emphasizes that “[f]ixed wireless may face various limitations, including congestion, interference, rain fade, and need for line-of-sight, depending on the technology and frequencies used—such that it cannot be assumed to work at every location within an area covered by specific spectrum.”<sup>51</sup> Windstream also directly challenges the incumbent LECs’ suggestion that the “inability to receive service [using fixed wireless service is] a rare exception, particularly in urban settings,”<sup>52</sup> finding that \*\*\* BEGIN HIGHLY

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\*\*\* END HIGHLY CONFIDENTIAL \*\*\*<sup>53</sup>

Similarly, USTelecom describes XO as a competitive provider that is “using fixed wireless to extend [its] network[.]”<sup>54</sup> XO, however, states that, “while [it] holds wireless licenses and provides fixed wireless services, it does not consider wireless media to have the performance capabilities or sufficient reliability for the provision of its Dedicated Services.”<sup>55</sup> Level 3 similarly concludes that “fixed wireless services play only a fringe role in the marketplace,” noting that the company “does not respond to the rates, terms, and conditions offered by

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<sup>50</sup> Verizon Comments at 47.

<sup>51</sup> Deem *et al.* Decl. ¶ 35.

<sup>52</sup> Verizon Comments at 49.

<sup>53</sup> Deem *et al.* Decl. ¶ 35. Windstream also rebuts the incumbents’ claim that access issues no longer impede entry, finding that the need for a “fixed wireless provider [to] obtain building access . . . erects a significant barrier because access must be negotiated with each building owner.” *Id.* ¶ 36.

<sup>54</sup> USTelecom Comments at 14.

<sup>55</sup> XO Comments at 25.

providers of these services.”<sup>56</sup> In sum, the incumbent LECs’ claims that fixed wireless services have overcome their historical shortcomings and are viewed today as effective substitutes for special access is baseless.

**2. The incumbent LECs erred in defining the relevant geographic market for purposes of analysis.**

The incumbent LECs erroneously employed an overly broad definition of the relevant geographic market as the basis for their competitive analysis. Specifically, the incumbent LECs’ economists “quantif[ied] competition at the census block level because they are small, such that presence anywhere in a census block is a good indication that competition prevails throughout the areas of the census block where there is special access demand.”<sup>57</sup> This view is plainly wrong—both the comments and FCC precedent demonstrate that the appropriate geographic market for purposes of the Commission’s special access market power analysis is the individual customer location (*i.e.*, a building or cell tower) or route.

Specifically, the relevant geographic area for analyzing special access services is the area in which a special access customer would shift to a different supplier in reaction to a small, but significant and non-transitory, increase in the price of the services in question.<sup>58</sup> Consistent with this test, Dr. Baker noted that:

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<sup>56</sup> McReynolds Decl. ¶ 23; *see also, e.g., id.* (“These services are subject to well-known limitations, including line-of-sight restrictions and limited range. Because of these limitations, these services generally do not offer the level of speed and reliability that Level 3’s customers demand.”); Black Decl. ¶ 20 (“[I]n my experience, this connectivity alone is not sufficient to meet the needs of most customers that demand dedicated services.”).

<sup>57</sup> ILEC White Paper at 4; *see also id.* at 11 (“[W]e focus our measure of competition on census blocks, asking how frequently ILECs face competition from other facilities-based providers in the same census block.”).

<sup>58</sup> *See, e.g., Qwest Order* n.142 (“A relevant geographic market has been defined ‘as the region where a hypothetical monopolist that is the only producer of the relevant product in the region would profitably impose at least a ‘small but significant and nontransitory’ increase in

Customers of dedicated services provided over wireline, wholesale and retail, are tied to specific locations, and cannot substitute services located elsewhere. Nor would they relocate in response to a small increase in dedicated services prices at their existing location. . . . Small differences in the price of dedicated services are similarly unlikely to matter materially to firms choosing initial locations . . . . Accordingly, service to each customer location served by a dedicated connection – whether a specific office suite within a building, a particular cell tower, or the location of the channel term or local transport facility sought by a CLEC – is appropriately defined as a geographic market.<sup>59</sup>

Dr. Mitchell similarly has concluded that the “Merger Guidelines’ test suggests that the relevant special access geographic market for channel termination service is the building in which the customer is located.”<sup>60</sup> These findings serve to confirm what the Commission already has stated on numerous occasions— “[c]ompetition in the provision of special access appears to occur at a very granular level.”<sup>61</sup>

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the price of the relevant product, assuming that the prices of all products provided elsewhere do not change.”).

<sup>59</sup> Baker Decl. ¶ 35; *see also* XO Comments at ii (“The Commission should find the relevant geographic market for purposes of analyzing the Dedicated Services market is the individual commercial building.”).

<sup>60</sup> Declaration of Bridger M. Mitchell ¶ 35, appended as Attachment A to Comments of Sprint Nextel Corporation, WC Docket No. 05-25 (filed Jan. 19, 2010) (“Sprint 2010 Comments”); Besen/Mitchell Decl. ¶ 19.

<sup>61</sup> *2012 R&O and FNPRM* ¶ 22. For example, in the *SBC/AT&T Merger Order*, the Commission found that “the relevant geographic market for wholesale special access services is a particular customer’s location.” *AT&T Inc. and BellSouth Corporation Application for Transfer of Control*, Memorandum Opinion and Order, 22 FCC Rcd. 5662, ¶ 31 (2007) (“*AT&T/BellSouth Order*”). In the *Qwest Order*, the Commission also “reaffirm[ed] that each customer location constitutes a separate relevant geographic market, given that a customer is unlikely to move in response to a small, but significant and nontransitory increase in the price of the service.” *Qwest Order* ¶ 64; *see also, e.g., Wavecom Solutions Corporation, Transferor, and Hawaiian Telcom, Inc., Transferee, Applications for Consent to Transfer Control*, Memorandum Opinion and Order and Declaratory Ruling, 27 FCC Rcd. 16,081, ¶ 12 (2012) (“[I]t would be prohibitively expensive for an enterprise customer to move its office location in order to avoid . . . increases in the price of special access services, and . . . there are significant entry barriers to putting competitive last-mile facilities into place.”); *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange*

**B. The Incumbents Ignore the Substantial Barriers to Entry to Providing Competing Last-Mile Services**

In addition to using incorrect market definitions, the incumbents assert that if a single non-incumbent provider has any fiber facilities of any type in a census block, then there is effective competition for *all* special access products in *every* building location in the census block.<sup>62</sup> The Commission should reject this assertion because it both disregards the significant barriers that providers face when seeking to deploy last-mile facilities to customer locations and unjustifiably conflates different capacity-based product markets.<sup>63</sup>

To determine whether potential competition imposes genuine constraints on the relevant market, the Commission focuses primarily on whether “significant barriers to entry” would prevent new providers from offering service quickly enough to counteract supracompetitive pricing and other practices of competitive concern.<sup>64</sup> In evaluating the significance of barriers to entry, the Commission will typically presume that potential “entry is costly and difficult” if existing facilities-based competition is limited or sporadic,<sup>65</sup> and will reject sweeping, cross-market generalizations about the ease of entry on the basis that competition exists elsewhere or for other services. Specifically, the Commission will not conclude that “a potential entrant

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*Carriers, et al.*, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, 18 FCC Rcd. 16,978, ¶ 495 n.1536 (2003) (“[W]e define the relevant geographic market for transport as route-by-route[.]”).

<sup>62</sup> Moreover, as outlined in Section III.C, even assuming *arguendo* that this claim is true, the incumbent LECs still fail to demonstrate the existence of *effective* competition.

<sup>63</sup> See *Unbundling Access to Network Elements; Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, Order on Remand, 20 FCC Rcd. 2533, ¶ 153 (2005) (“[T]he barriers to entry impeding competitive deployment of loops are substantial”) (“*TRRO*”).

<sup>64</sup> See *Qwest Order* ¶¶ 72-73, 90.

<sup>65</sup> *Id.* ¶ 73.

economically could deploy its own fiber on a particular route in a timely manner in response to a small but significant and non-transitory increase in the price” simply because “present competitors have deployed limited amounts of fiber in a larger geographic area.”<sup>66</sup> The Commission will also require incumbents to present “persuasive record evidence” that any services identified as a source of potential competition “are in the same relevant product markets as those at issue” in the proceeding.<sup>67</sup> Finally, the Commission will consider the economics and business rules governing the “entry and exit decisions” of competitive providers,<sup>68</sup> and will only consider potential competition to function as a genuine competitive constraint if “entry is likely in . . . [a] reasonable timeframe.”<sup>69</sup>

The Merger Guidelines complement the Commission’s approach to analyzing potential competition. In particular, the Merger Guidelines require agencies to examine “the timeliness, likelihood, and sufficiency of the entry efforts an entrant might practically employ” in determining the competitive effects of a horizontal merger.<sup>70</sup> To be “timely” and “likely,” potential entry must (1) “be rapid enough” to render incumbent pricing unprofitable,<sup>71</sup> and (2) remain economic after accounting for the “capital needed,” “the risks involved,” and “the cost per unit the entrant would likely incur, which may depend upon the scale at which the entrant would operate.”<sup>72</sup> And to be “sufficient,” potential entry must have the ability to “deter or

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<sup>66</sup> *Id.* ¶ 78.

<sup>67</sup> *Id.* ¶ 89.

<sup>68</sup> *See id.* ¶ 74.

<sup>69</sup> *See id.* ¶ 90.

<sup>70</sup> *Horizontal Merger Guidelines* § 9.

<sup>71</sup> *Id.* § 9.1.

<sup>72</sup> *Id.* § 9.2.

counteract” incumbent pricing behavior, which requires that the “products offered by” the new entrant be “close enough substitutes to the products offered by the [incumbent] to render a price increase by the [incumbent] unprofitable.”<sup>73</sup> Like the Commission, the antitrust agencies also presume that potential “entry is slow or difficult” if there has been a “[l]ack of successful and effective entry” to date.<sup>74</sup>

When considered within the context of these frameworks, the incumbent LECs’ argument that a single non-incumbent fiber facility of any kind in a census block represents effective competition for all locations in the block fails at every turn. As an initial matter, the incumbents’ argument relies on the very abstractions that the Commission discredited in its prior assessments of potential competition. As the Commission has recognized, the fact that competitive facilities exist in limited locations does not imply that entry is possible everywhere, and the potential provision of service at one capacity will not adequately constrain pricing for services of another capacity where the two services are not effective substitutes for a typical consumer.<sup>75</sup> Moreover, because the incumbent LECs have failed to explain the dearth of competitive last-mile facilities to the vast majority of building locations across the country, they have also failed to rebut the presumption applied by both the Commission and the antitrust agencies that entry is difficult.<sup>76</sup> Indeed, Dr. Sappington calls into question “[t]he credibility of the ILEC economists’ assertion that fiber deployment implies effective competition” due to “their failure to provide a compelling explanation for why so little CLEC fiber is actually employed to serve nearby customers.”<sup>77</sup>

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<sup>73</sup> *Id.* § 9.3.

<sup>74</sup> *Id.* § 9.

<sup>75</sup> *See Qwest Order* ¶¶ 73, 78-79.

<sup>76</sup> *See Sappington Decl.* ¶ 24.

<sup>77</sup> *Id.*; *see also id.* ¶ 25.

More fundamentally, however, the incumbent LECs’ analysis ignores substantial direct evidence that establishes that the barriers to rapid last-mile entry in the special access marketplace often are insurmountable. As explained in detail below, the combination of construction expenses, transaction costs, and suppressed demand stemming from incumbent loyalty agreements means that “potential competitors” cannot easily, quickly, or sufficiently enter a specific special access product market at a specific building location in a way that would effectively discipline incumbent behavior. In fact, these challenges typically make deployment of last-mile facilities entirely uneconomic—regardless of where the competitor’s transport facilities or fiber rings are located. This is true even over lengthy time scales. Indeed, the record in this proceeding firmly establishes that these so-called “potential competitors,” despite many years of substantial investment in backbone facilities, have barely made a dent in the incumbents’ dominance of the last-mile.

**1. The incumbent LECs ignore the substantial costs providers with fiber facilities must incur to extend last-mile facilities.**

The incumbent LECs assert that once a provider has built backbone facilities such as long-haul fiber and metro fiber rings, it can quickly and effectively offer every special access product to every customer, at every location within the census block, where the fiber is located. To offer service to a customer location, a competitor must build last-mile facilities, develop access to conduit, and obtain permission to enter facilities within a building. The incumbents and their economists acknowledge, in passing, the need for crucial last-mile facilities or “laterals.”<sup>78</sup> But they curiously assert, without elaboration, that such last-mile facilities are

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<sup>78</sup> CenturyLink Comments at 3, 27-28; ILEC White Paper at 10.

“inexpensive,” “economic to deploy,” and “a relatively low-cost expansion.”<sup>79</sup> These assertions clearly are incorrect.

*First*, though the incumbent LECs indiscriminately assert that any fiber facility is evidence of the ability to compete for special access customers rapidly and effectively, the required last-mile lateral cannot extend from any location on a fiber ring. Rather, a provider with fiber facilities must have a node or a splice point available for connection to the competitor’s fiber.<sup>80</sup> When the relevant facility is long-haul fiber merely transiting a census block, the nearest node or splice point could be as much as a mile and a half away from the customer location, even if the fiber itself is very close to a potential customer location.<sup>81</sup> In addition, a number of obstacles could impede the ability of the provider with fiber facilities to reach even a nearby node—such as the need to build or access conduit, cross highways, or cross railroad tracks—and therefore makes it prohibitively difficult or expensive to extend a lateral.<sup>82</sup> As a result, it is improper to calculate a location’s proximity to competitive facilities based only on the distance between a customer location and a fiber optic cable.

*Second*, if the provider with facilities can feasibly reach a node from a customer location, the provider’s ring must have fibers available for the connection. If no fibers are available, the provider must either pull new fibers, or else it must add dense wave division multiplexing (“DWDM”) equipment to the ring, which enables the transmission of multiple wavelengths of

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<sup>79</sup> CenturyLink Comments at 27-28; *see also* ILEC White Paper at 10.

<sup>80</sup> *See* Declaration of Ed Carey ¶ 8 (“Carey Decl.”), attached as Exhibit A to Opposition to ILEC Direct Cases of Sprint Corporation, WC Docket No. 15-247 (filed Feb. 5, 2016) (“Sprint Direct Case Opp.”); *TRRO* ¶ 153 n.426 (“Even if a fiber-optic facility passes directly next to a building, a competitor cannot attach a lateral wherever the ring passes a building but rather must attach its lateral at a splice point along the ring.”).

<sup>81</sup> Carey Decl. ¶ 9(a).

<sup>82</sup> *Id.* ¶ 8(b).

light over a single fiber or pair, thereby increasing the number of connections available on the existing fiber.<sup>83</sup> Low-end DWDM equipment can cost \$20,000 to \$50,000, and can reach into the hundreds of thousands of dollars, depending on the capacity the provider needs to install.<sup>84</sup>

*Third*, the provider with fiber facilities must consider the costs of the actual construction, which can rise as high as \$400 per foot.<sup>85</sup> In cases where a customer, such as a bank, medical provider, data center, or public-safety organization demands a redundant or dual lateral configuration, construction costs can increase by 120 percent.<sup>86</sup> Thus, construction costs to reach a single customer located 500 feet from an available node or splice point can, in some cases, exceed \$400,000. In addition to construction costs, the provider must install electronics at the customer's location, which can cost between \$20,000 and \$50,000 or more depending on the services needed at the location.<sup>87</sup>

*Fourth*, the provider with fiber facilities must obtain building permits, gain access to rights of way, and secure permission to install facilities at the customer's location.<sup>88</sup> The costs of securing these approvals can vary widely, but they can be expensive. Some railroads, for

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<sup>83</sup> *Id.* ¶ 9(d).

<sup>84</sup> *Id.*

<sup>85</sup> *Id.* ¶ 9(a); *see also* *TRRO* ¶ 150 (“The most significant portion of the costs incurred in building a fiber loop results from deploying the physical fiber infrastructure into the underground conduit to a particular location . . . .”); Joint CLEC Comments at 33-34; Windstream Comments at 37; Baker Decl. ¶ 40.

<sup>86</sup> Carey Decl. ¶ 9(b).

<sup>87</sup> *Id.* ¶ 9(c).

<sup>88</sup> *Id.* ¶¶ 9(e), 10; *see also* *TRRO* ¶ 151 (“Often . . . delays are attributable to problems in securing rights-of-ways from local authorities in order to dig up streets prior to laying fiber, including lengthy negotiations with local authorities over the ability to use public rights-of-way and obtaining building and zoning permits.”); Joint CLEC Comments at 33; Windstream Comments at 37; Baker Decl. ¶ 40.

example, may charge \$20,000 to \$30,000 per year just to cross their tracks.<sup>89</sup> Moreover, these approvals are not guaranteed. Entities such as local governments, railroads, and property owners are not required to grant other providers access to their property, and if the provider cannot secure proper approvals, perhaps because the local government imposes a construction moratorium during a holiday season, it cannot deploy the lateral.<sup>90</sup>

*Fifth*, even if a potential competitor is willing and able to extend its network to a location despite the costs and obstacles noted above, wholesale providers like Sprint must have a customer who is willing to wait for the competitor to construct the lateral.<sup>91</sup> In the best case scenario, construction will take two to three months.<sup>92</sup> More typically, construction will take four to nine months, and it can take as long as eighteen months or more, depending on uncontrollable factors such as severe weather.<sup>93</sup> Sprint’s customers, however, often will not wait that long, as sales cycles can be as short as thirty days.<sup>94</sup> In those cases, Sprint must order wholesale special access services from a provider that has already deployed facilities to the location, which is almost always the incumbent LEC.<sup>95</sup>

*Finally*, wholesale purchasers like Sprint frequently purchase special access services to service enterprise-services customers that need to connect multiple locations. If a potential

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<sup>89</sup> Carey Decl. ¶ 9(e).

<sup>90</sup> *Id.* ¶¶ 9(e), 10; *see also* TRRO ¶ 151 (“[M]any local jurisdictions impose construction moratoriums which prevent the grant of a franchise agreement to construct new facilities in the public rights-of-way.”); Joint CLEC Comments at 33; Windstream Comments at 35.

<sup>91</sup> Carey Decl. ¶ 11; *see also* TRRO ¶ 151 (“[T]he construction of local loops generally takes between six to nine months absent unforeseen delay.”); Windstream Comments at 37.

<sup>92</sup> Carey Decl. ¶ 11(b).

<sup>93</sup> *Id.*

<sup>94</sup> *Id.* ¶ 11(c).

<sup>95</sup> *Id.*

competitor, or multiple such competitors, must build new facilities to reach each of a customer's locations, then the cost, complexity, and time of the project will multiply. As a result, to serve multi-location customers in a timely and efficient manner, Sprint frequently must default to purchasing services from the incumbent LEC, which in most cases has already deployed facilities to each of the customer's locations.<sup>96</sup>

As these factors demonstrate, the deployment of competitive last-mile facilities is, in direct contrast to the incumbents' claims, anything but "inexpensive" or "economic"—a fact corroborated by econometric analyses of the Commission's special access data. As Dr. Sappington explains, the regression analysis performed by Dr. Baker demonstrates that the presence of non-incumbent fiber near a given location has a much weaker impact on special access pricing than the presence of a non-incumbent entity that "actually serve[s] customers in [the] specified location."<sup>97</sup> These "findings raise significant questions regarding the ILEC economists' assertion that any CLEC that has deployed fiber nearby can impose strong competitive discipline on an incumbent supplier of special access services."<sup>98</sup> Dr. Sappington also observes that the evidence in the record demonstrates that "the presence of nearby CLEC fiber often is inadequate to impose strong competitive pressure" on incumbent special access providers.<sup>99</sup> Sappington further notes that in assessing industry conditions, the antitrust regulators "consider the actual history of entry into the relevant market and give substantial

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<sup>96</sup> *Id.* ¶ 12.

<sup>97</sup> Sappington Decl. ¶ 19; *see also id.* ¶¶ 19-23.

<sup>98</sup> *Id.* ¶ 23.

<sup>99</sup> *Id.* ¶ 25.

weight to this evidence. Lack of successful and effective entry ... tends to suggest that successful entry is slow or difficult.”<sup>100</sup>

Of course, the incumbent LECs almost certainly do not face the same obstacles that the providers which the incumbents deem to be “potential competitors” face to deploy last-mile facilities. For example, incumbents can rely on their first-mover advantages—such as widespread deployment of existing infrastructure that was deployed while they enjoyed government-sanctioned monopoly status and existing access to rights of way and buildings—to lower the cost and complexity of reaching new locations.<sup>101</sup> Indeed, both Windstream and TDS Metrocom acknowledge that their incumbent LEC entities have lower deployment costs than their competitive LEC entities.<sup>102</sup> Thus, even if the incumbents’ proclamations reflect their own experience deploying new last-mile facilities, they are irrelevant to the deployment of competitive facilities.

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<sup>100</sup> *Id.* (quoting the *Horizontal Merger Guidelines* § 9).

<sup>101</sup> *Id.* ¶ 9(g); Joint CLEC Comments at 37 (“[I]ncumbents can ‘increase capacity on many special access routes at a relatively low incremental cost (relative to the total cost of trenching and placing poles, manholes, conduit, fiber, and copper, and securing rights and access) by adding or upgrading terminating electronics.’”) (quoting *Special Access Rates for Price Cap Local Exchange Carriers; AT&T Corp. Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, Order and Notice of Proposed Rulemaking, 20 FCC Rcd. 1994, ¶ 26 (2005)).

<sup>102</sup> See Joint CLEC Comments at 38 n.107 (“‘To support a build-out, CLECs must recover the costs for new infrastructure, including buried conduit, rights of way and pole access, and building entry portals and equipment rooms’ (which the incumbents already possess) and ‘also may be charged for building entries in instances where the ILEC is not.’”) (quoting Declaration of James Butman ¶ 7, attached to Letter from Thomas Jones & Matthew Jones, Counsel, TDS Telecommunications Corporation, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 05-25 (filed Mar. 26, 2015) and Letter from Jennie B. Chandra, Vice President - Public Policy and Strategy, Windstream Corporation, to Marlene H. Dortch, Secretary, FCC, at 2, 6, WC Docket No. 05-25 (filed June 8, 2015) (“Windstream Submission”)).

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In addition to explaining why a provider with nearby facilities is not a potential competitor at most customer locations, these first-mover advantages also suggest that disciplining competition is unlikely to emerge even as demand for broadband services increases. This is because the need for special access services at previously unserved locations will often provide incumbent LECs with new service opportunities without increasing the size of the market addressable by a competitive LEC. In fact, because many enterprise customers prefer to purchase special access services from a provider that can serve all of their locations, new demand can work to decrease existing competition in some cases. Indeed, in Sprint’s experience, large customers that move or expand to new locations where only an incumbent LEC can serve face increasing pressure to transfer all of their service to that incumbent.

Moreover, it bears noting that the incumbent LECs’ own corporate experience reflects the differences that incumbent and competitive LECs face in their efforts to construct last-mile facilities. Indeed, AT&T has had considerable direct experience with the challenges of overbuilding incumbent networks as a competitive LEC. In previous filings made before it disappeared into the maw of an incumbent LEC, AT&T intimately described the barriers preventing competitive entry, contradicting each assertion about the ease of entry that it now makes as an incumbent. For example, AT&T agreed that incumbent LECs have substantially lower deployment costs than competitive LECs,<sup>103</sup> and that incumbents “enjoy a first mover

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<sup>103</sup> See Comments of AT&T Corporation at 33-40, WC Docket No. 04-313, CC Docket No. 01-338 (filed Oct. 4, 2004) (“2004 AT&T Comments”). AT&T stated:

It is also important to emphasize that the incumbents are *not* ‘similarly situated’ with competitors respect to loop deployment [*sic*]. Even in the relatively uncommon cases where the incumbent does not already serve a particular building with fiber, its ubiquitous fiber network generally has accessible fiber located very close to the customer’s building. Accordingly, the incumbent can generally self-provide such facilities at costs far lower than a rival. The competitor’s costs to construct a new

advantage over any CLEC that is often dispositive.”<sup>104</sup> AT&T also agreed that the relevant distance in determining competition is from building location to splice point, and not from building location to any presence of fiber,<sup>105</sup> expressly concluding that competitors can serve, at most, very few locations within proximity to competitive fiber.<sup>106</sup> And it agreed that the presence of one competitor at a location does not mean other providers will be willing to serve that location.<sup>107</sup> The Commission should take it from AT&T’s own account as a competitive

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loop facility are not only fixed and sunk, they are also incremental, in that the competitor cannot provide the service without incurring them. In contrast, in most cases, the incumbent is already serving the location with its own fiber, which means that it can match a competitive offer without incurring any incremental cost to provide the services the competitor is proposing – it is already doing so and has substantial room between its price and marginal cost to do so. At worst, the incumbent would only need to augment its existing terminal multiplexers by inserting plug-in cards (into a pre-provisioned empty slot) at each end of the new circuit for a total investment on the order of \$10,000 to \$15,000 – an investment far less than the competitor’s.

*Id.* at 40.

<sup>104</sup> Petition for Rulemaking of AT&T Corporation at 35, RM-10593 (filed Oct. 15, 2002) (“AT&T Petition”).

<sup>105</sup> 2004 AT&T Comments at 33-34 (“[A] competitor may have fiber on a street, but if the nearest splice point on its facility is down the street at the next intersection, the additional distance (which requires additional outside plant costs) may render the investment uneconomical.”).

<sup>106</sup> *Id.* at 36-37 (“[A] carrier could not economically deploy a loop to serve only two DS3s of capacity unless it literally has an access point to its metro fiber *immediately outside the front door* of a building location . . . . The likelihood of this occurring in any individual case (and thus being predictable in advance, which is necessary to implement a regulatory rule) is practically zero, since splice points on competitive networks are typically placed about 2,000 feet apart.”).

<sup>107</sup> *Id.* at 39 (“While one competitor may find it economically feasible to construct a lateral from its metro fiber to a particular location – because of its unique circumstances with regard to committed traffic and a short distance of the customer location from its fiber network – that does not mean that any other carrier whose nearest pre-designed access points is farther away could deploy loops to that same location at the same capacity level.”).

LEC, and acknowledge the “enormous real-world entry barriers” faced by potential competitors.<sup>108</sup>

**2. Incumbent LEC loyalty plans further impede the deployment of competitive last-mile facilities.**

Beyond the costs and obstacles described above, competitive LECs must overcome yet another formidable barrier to their ability to serve a new customer: unreasonable incumbent LEC terms and conditions. As Sprint and others have demonstrated throughout this proceeding,<sup>109</sup> and in the separate tariff investigation the Commission recently initiated,<sup>110</sup> these terms and conditions undermine competition in both the special access marketplace and in the provision of retail fixed and wireless broadband services.

Contrary to the incumbent LECs’ recent and repeated assertions,<sup>111</sup> the incumbents’ loyalty plans are *not* traditional term or volume discount plans with legitimate business justifications.<sup>112</sup> Rather, the loyalty plans are an interlocking set of unreasonable provisions that both cement incumbent LECs’ special access dominance and raise the costs of the incumbents’ fixed and wireless broadband rivals. By exploiting purchasers’ need to avoid the incumbents’ exorbitant rack rates and to obtain vital circuit portability, incumbent LECs force purchasers into plans that require them to commit all or nearly all of their historical special access demand to the incumbent LEC.<sup>113</sup> Then, the incumbents impose harsh shortfall and buy-down penalties to

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<sup>108</sup> *Id.* at 31 (emphasis omitted).

<sup>109</sup> *See generally* Sprint Comments at 45-70.

<sup>110</sup> *See generally* Sprint Direct Case Opp. at 22-40.

<sup>111</sup> Verizon Comments at 63-65.

<sup>112</sup> Sprint Comments at 61-64; Sprint Direct Case Opp. at 22-24.

<sup>113</sup> Sprint Comments at 47-50; Sprint Direct Case Opp. at 40-47.

ensure that customers remain loyal,<sup>114</sup> and overage penalties to ensure that the incumbent captures any incremental growth in customer demand.<sup>115</sup>

Over the course of many years, the incumbent LECs' scheme pushes significant amounts of special access demand into these lock-up plans. As a result, even if a competitive LEC can overcome the barriers to entry discussed above—finding available nodes and fibers; managing construction costs; securing building permits, right-of-way access, and building access; and locating customers who are willing to wait for deployment—it still must find customers who can free their demand from incumbent LEC lock-up arrangements in a reasonable amount of time for a large enough number of lines to make entry economic. This added limitation puts competitive LECs in an impossible situation. It can be difficult to find circuits that are not subject to a loyalty commitment, and it may be uneconomic for potential competitors to build facilities to serve the paltry number of available circuits. Yet, to free circuits that are committed to incumbent loyalty plans, potential competitors must cut their rates to overcome the penalties the purchasers will suffer, which also can render the decision to build facilities uneconomic. Thus, competitive providers are doubly disadvantaged—they face higher costs of entry, and their

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<sup>114</sup> Sprint Comments at 50-51; Sprint Direct Case Opp. at 27-30.

<sup>115</sup> Sprint Comments at 51-52; Sprint Direct Case Opp. at 30-34.

addressable market is artificially constrained by these loyalty plans.<sup>116</sup> Either way, loyalty plans undermine competitive entry at a significant number of locations across the country.<sup>117</sup>

**3. The lack of competitive entry confirms that potential competitors face extraordinarily high barriers in deploying last-mile facilities, regardless of where fiber is located.**

Potential competitors will deploy new facilities only if they have a reasonable expectation that they will recover their investment within a reasonable time frame.<sup>118</sup> If the cost of deployment exceeds expected revenues—whether because deployment costs are high, a location contains too few customers, customers order low-margin services, or too few customers can

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<sup>116</sup> This is in addition to the restrictions of the addressable market that competitive LECs face because of (1) the first-mover advantages enjoyed by incumbents, and (2) the fact that interexchange and wireless carrier affiliates of the incumbent LECs remain large purchasers of special access services and rarely use competitive providers for their special access needs. Indeed, affiliates of the three largest incumbent LECs purchase approximately **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** in special access services per year, **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of which is supplied by an incumbent. See Declaration of Susan M. Gately ¶ 13, appended to Ad Hoc Comments (“Gately Decl.”).

<sup>117</sup> See Sprint Comments at 37 (citing Reply Comments of the National Association of State Utility Consumer Advocates and the New Jersey Division of Rate Counsel at 17, WC Docket No. 05-25 (filed Mar. 12, 2013)) (“By essentially freezing demand through the imposition of hefty penalties for failure to meet volume or term discounts, ILECs prevent the very competition they contend is imminent or ‘potential.’”).

<sup>118</sup> See Carey Decl. ¶ 9(f); *TRRO* ¶ 150 (“The economics of deploying loops are determined by the costs associated with such deployment and the potential revenues that can be recouped from a particular customer location.”); Besen/Mitchell Decl. ¶ 30 (“[A] CLEC’s network facilities often may be located at such a distance from the customer that the CLEC would be unable to recoup the costs of extending its network facilities from future sales.”); Windstream Comments at 35 (“The barriers to building and extending fiber networks are high, including when a carrier may have an extensive fiber network in a metro area or within the geographic bounds of a single zip code. Even then, the carrier frequently lacks a sufficient prospect of generating the revenues necessary to sustain last-mile deployment. . . .”); *id.* at 37 (**\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\***).

escape incumbent LEC loyalty plans—providers with facilities in an area will not deploy last-mile facilities, and they do not provide any actual or potential competition to the incumbent.

The record in this proceeding is clear: the opportunities for so-called “potential competitors” to make economically viable investments in last-mile special access facilities have been few and far between. As noted above, in only \*\*\* **BEGIN HIGHLY CONFIDENTIAL** \*\*\* [REDACTED] \*\*\* **END HIGHLY CONFIDENTIAL** \*\*\* of the census blocks that contain competitive LEC fiber does any competitive LEC actually provide special access service to a purchaser—a figure that amply demonstrates that the incumbent LECs’ attempt to manipulate the data request to conjure competition is nothing but smoke and mirrors.<sup>119</sup>

The reports of the competitive LECs are consistent with this finding. For example, the incumbents proudly cite marketing materials from Level 3 and Windstream that advertise those companies’ business-broadband capabilities.<sup>120</sup> The very materials the incumbents cite, however, show that Level 3 claimed only 100,000 buildings within 500 feet of its network (without regard to how many of those buildings Level 3 actually serves), and Windstream made only a general claim that it *could* deploy services at locations throughout the United States. Moreover, in its data-collection comments, Level 3 reveals that after “years of aggressively deploying loop facilities,” it has deployed last-mile facilities only to “approximately 34,000 commercial buildings nationwide.”<sup>121</sup> In addition, Level 3 reports a goal of reaching “approximately 3,000 to 4,000 commercial buildings in the U.S. each year.”<sup>122</sup> And Windstream reports that \*\*\* **BEGIN HIGHLY CONFIDENTIAL** \*\*\* [REDACTED]

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<sup>119</sup> Besen/Mitchell Decl. ¶ 30.

<sup>120</sup> *See, e.g.*, Verizon Comments at 42-43; CenturyLink Comments at 16.

<sup>121</sup> Joint CLEC Comments at 33.

<sup>122</sup> *Id.* at 34.



and a competitor’s fiber facilities. This is incorrect. The incumbent LECs ignore the fact that the Department of Justice based its screens on “revenue opportunity . . . and the distance to the closest CLEC fiber,” which were designed to account for the likely cost of construction and other barriers to entry—all factors that the incumbent LECs have conveniently ignored.<sup>126</sup> In fact, the Department of Justice screens apply the same sort of analysis that a provider with facilities in an area would use: the screens are an attempt to determine whether a competitor could generate sufficient revenue to justify the costs of serving a new location.<sup>127</sup> Contrary to the incumbents’ claims and as discussed above, proximity to fiber can be very misleading and is only one of many factors in that analysis.

*Second*, in merger reviews, the Commission has conducted a building-by-building analysis to determine whether potential competitors are likely to deploy service at a location quickly and efficiently enough to discipline incumbent LEC behavior. These reviews tend to cover small numbers of buildings spread across limited geographic areas. For example, when it reviewed AT&T’s merger with BellSouth, the Commission considered the parties’ application of the Department of Justice screens to a mere seventy-two buildings, all located in BellSouth territory.<sup>128</sup> By contrast, here the incumbents want the Commission to find that special access competition exists at all locations nationwide based solely on the presence of fiber located within some census blocks and without performing any potential entry analysis. Thus, the incumbents both reject building locations in favor of census blocks as the proper geographic unit of analysis, and also presume the ease of entry on a nationwide basis with no underlying analysis of each

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<sup>126</sup> *AT&T/BellSouth Order* ¶ 42 n.114.

<sup>127</sup> *See id.*

<sup>128</sup> *Id.* ¶ 44.

particular, and already overbroad, geographic market. This is an unjustifiable expansion of the Commission's standards for analyzing competition in other contexts.

*Third*, it also is noteworthy that the applicants in the AT&T and BellSouth transaction admitted that 31 out of 72 buildings failed the Department of Justice screens, meaning that competitive entry was unlikely at those locations.<sup>129</sup> Here, the incumbents remarkably ask the Commission to conclude that there are competitive alternatives to the incumbents' special access offerings at every building in a geographic area by simply looking at fiber maps, when the incumbents' own prior advocacy admits that competitive entry is unlikely at a significant number of locations.

Accordingly, the Commission should disregard the incumbents' efforts to misapply Department of Justice and Commission precedent to hide what the data so clearly demonstrate: incumbents are the dominant providers of special access services at the vast majority of locations nationwide, and the mere presence of competitive fiber within a census block does not offer any meaningful constraint on the incumbents' behavior. Moreover, the incumbent LECs also ignore other relevant Department of Justice guidance, which counsels that evidence regarding "the actual history of entry into the relevant market" deserves "substantial weight," because "[l]ack of successful and effective entry in the face of non-transitory increases in the margins earned on products in the relevant market tends to suggest that successful entry is slow or difficult."<sup>130</sup> Despite many years of significant investment, the "potential competitors" have barely made a dent in the incumbents' dominance. Put simply, "actual history" confirms that "successful

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<sup>129</sup> *Id.*

<sup>130</sup> *Horizontal Merger Guidelines* § 9.

entry” on a scale sufficient to discipline the incumbents’ behavior is unlikely to occur in the near future, regardless of where competitive fiber is located.

**5. The Commission should apply the lessons learned from the failure of the pricing flexibility triggers.**

In essence, the incumbents advance the presence of competitive fiber as an “evidentiary proxy” for effective special access competition.<sup>131</sup> The Commission, however, has been down this road before. Indeed, the now-suspended triggers for Phase I and Phase II pricing flexibility relied on only a single component of the sunk investment necessary to offer special access services—collocation in incumbent LEC wire centers—without regard to the deployment of actual competitive last-mile facilities.

When a previous Commission adopted the triggers, it made a “prediction that collocators would eventually build their own channel terminations to end users.”<sup>132</sup> Those build-outs never materialized, and, as a result, the incumbents remain dominant and free to exercise their market power to charge exorbitant rates and impose unreasonable terms and conditions on purchasers.<sup>133</sup> When it suspended the triggers, the Commission correctly recognized that evidence in the record in this proceeding “suggests our predictions were inaccurate . . . .”<sup>134</sup> The Commission should not make the same mistake twice by freeing the incumbents from proper pricing regulations in wide swaths of the country based on an unfounded prediction that “potential competitors” will

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<sup>131</sup> AT&T Comments at 3.

<sup>132</sup> *2012 Suspension Order* ¶ 68.

<sup>133</sup> *See id.* (cataloging MSAs where only the incumbent LEC was providing service several years after receiving Phase II pricing flexibility).

<sup>134</sup> *Id.* ¶ 71.

*eventually* extend last-mile facilities from their fiber rings in volumes sufficient to provide effective competition.

**C. The Incumbent LECs’ Analysis Incorrectly Assumes that a Duopoly Provides Effective Competition**

As outlined above, the incumbent LECs’ analysis of the special access marketplace fails entirely to consider actual competition, relies on preposterously expansive product and geographic markets, and rests on an implausible theory of what constitutes potential competition. Each of these fundamental flaws clearly enabled the incumbent LECs to paint a rosier picture of competition than the bleak reality that purchasers actually face. And yet, the incumbent LECs still fail to demonstrate that *effective* competition is present in the special access marketplace. Instead, the incumbent LECs erroneously suggest that the presence of a single actual or “potential” additional provider—a so-called “competitor” or “competitive facility”—in a census block is sufficient to ensure an effectively competitive marketplace for special access services and, consequently, should result in wholesale deregulation of their offerings.<sup>135</sup>

Basic economic theory and common sense thoroughly debunk any notion that a duopoly provides competition sufficient to prevent the incumbent LECs from imposing unjust and unreasonable prices, terms, and conditions. For example, Dr. Besen has established that “a wide variety of theoretical models recognize, and even predict, that a duopoly more typically leads to higher prices than would prevail in a market with a larger number of firms and that the entry of

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<sup>135</sup> While the incumbent LECs generally refer to the presence of competitive “providers,” their results plainly do not report whether more than a single “competitor” is present in an area they deem competitive. *See, e.g.*, ILEC White Paper at 20 (identifying census blocks “where the data show that *at least one* CLEC has deployed facilities”) (emphasis added); CenturyLink Comments at 38 (arguing that the incumbent LECs should receive “relief from price caps where there is *one* or more actual competitor providing the same service in the relevant geographic unit using its own facilities, third-party facilities, or UNEs”) (emphasis omitted).

additional firms would result in lower prices.”<sup>136</sup> Similarly, Dr. Baker indicates that “[m]arkets with two providers . . . are . . . unlikely to perform competitively,” further noting that “the economics literature recognizes that markets with more than one significant firm do not necessarily perform competitively, and that firms will likely exercise market power in markets with few market participants.”<sup>137</sup> Indeed, Chairman Wheeler himself noted that a duopoly is “a marketplace that is typically characterized by less than vibrant competition.”<sup>138</sup>

These findings apply with even more force to the special access marketplace. As Drs. Besen and Mitchell have established, likely “four—and certainly more than two” suppliers that actually compete with one another in a limited geographic area “are needed to give a competitive outcome in the special access markets under consideration in this proceeding.”<sup>139</sup> Indeed, as Dr. Baker recognizes, a duopoly is insufficient because, “in many cases, one of the two firms will provide no more than a limited constraint on the prices charged by the other.”<sup>140</sup> In particular, Dr. Baker correctly notes that:

Most duopoly markets are served by an ILEC and a CLEC. Many CLECs experience substantial impediments to expanding output, including high marginal costs of serving another customer in a building . . . . Under such circumstances, the CLEC would not have an incentive to compete aggressively with the ILEC on price. For

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<sup>136</sup> Declaration of Dr. Stanley M. Besen at 2, attached to Letter from Andrew L. Lipman, Counsel, TDS Metrocom et al., and Thomas Jones, Counsel, Cbeyond et al., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 08-24 (filed Apr. 23, 2009).

<sup>137</sup> Baker Decl. ¶ 48.

<sup>138</sup> Tom Wheeler, Chairman, FCC, at 4, The Facts and Future of Broadband Competition, Prepared Remarks at the 1776 Headquarters, Washington D.C. (Sept. 4, 2014).

<sup>139</sup> Besen/Mitchell Decl. ¶ 47; *see also, e.g., id.* ¶¶ 43-47 (outlining numerous studies that “all support the unsurprising conclusion that multiple providers are needed to ensure that a competitive outcome is achieved”). As Drs. Besen and Mitchell further note, given the dearth of competition that the data disclose, there would be little difference between using a “three competitor” standard and a “four competitor” standard. *Id.* ¶ 31.

<sup>140</sup> Baker Decl. ¶ 49.

the same reason, some or all of the CLECs participating in the markets served by more than two providers may have limited incentive to compete aggressively in those locations.<sup>141</sup>

The expert analyses submitted by Sprint and other commenters demonstrate that the vast majority of customer locations are served by only the incumbent LEC, or the incumbent LEC and one competitive provider. Specifically, Drs. Besen and Mitchell conclude that there are three suppliers at only **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of locations and four or more suppliers at only **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of locations.<sup>142</sup> Mirroring these findings, Dr. Baker finds that **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\***

**\*\*\* END HIGHLY CONFIDENTIAL \*\*\***.<sup>143</sup> Put simply, there can be no doubt that, as Dr. Baker observes, the “structure of [the relevant special access] markets raises competitive concerns.”<sup>144</sup>

#### **IV. APPROPRIATE ANALYSES OF THE DATA CONFIRM THAT INCUMBENT LECS POSSESS AND EXERCISE MARKET POWER IN THE PROVISION OF SPECIAL ACCESS SERVICES**

##### **A. The Analyses Submitted in the Record Confirm that Incumbent LECs Remain Dominant in the Provision of Special Access Services**

The results of the properly structured competition and concentration analyses now in the record overwhelmingly demonstrate that incumbent LECs dominate the special access marketplace “by any measure.”<sup>145</sup> Indeed, these results are consistent whether one examines the

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<sup>141</sup> *Id.*

<sup>142</sup> Besen/Mitchell Decl. ¶¶ 25 (Table 1), 26.

<sup>143</sup> Baker Decl. ¶ 44.

<sup>144</sup> *Id.* ¶ 47.

<sup>145</sup> Ad Hoc Comments at 4.

number of competitive suppliers in the relevant geographic and product markets or the market shares that competing suppliers have captured.

*Presence of Facilities-Based Competitors.* As Sprint explains in its comments, the analysis performed by Drs. Besen and Mitchell reveals that, at the vast majority of buildings and cell towers, the incumbent LEC is the only facilities-based provider of special access services. In particular, the incumbent LEC is the sole provider of special access service in **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\***.<sup>146</sup>

The analyses submitted by other experts reach the same conclusions. Notably, Dr. Baker concludes that **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\***.<sup>147</sup>

Susan M. Gately, an economic and policy expert in the telecom arena, similarly finds that, “[u]sing assumptions that result in the most conservative estimate of the percent of locations at which the ILEC is the only provider of facilities-based services, the data indicate that ILEC-only locations represent between **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of total locations nationwide with special access demand.”<sup>148</sup>

These quantitative findings also are consistent with the marketplace experiences described in declarations filed with the initial round of comments. For example, Level 3’s Vice

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<sup>146</sup> Besen/Mitchell Decl. ¶¶ 25 (Table 1), 26.

<sup>147</sup> Baker Decl. ¶ 44.

<sup>148</sup> Gately Decl. ¶ 4; *see also id.* ¶ 3 (“[M]ost customers—be they other wireline carriers (wireline CLECs, and IXC), mobile wireless carriers, or end users—have but one provider to choose from at the locations where they need to buy service—and that one provider is the ILEC.”).

President of Carrier Relations notes that “Level 3 purchases a significant majority of its dedicated services requirements from the incumbent LECs” due to “the lack of competition at many locations and the constraints associated with the terms and conditions in incumbent LEC discount plans.”<sup>149</sup> Similarly, Windstream officials note that, \*\*\* BEGIN HIGHLY

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The commenting parties also note that market analysts have concluded that the special access marketplace remains dominated by the incumbent LECs. For example, Windstream cites a recent Sanford Bernstein report estimating that, in aggregate, “competitive carriers, as well as cable, have built facilities to a small portion (less than 5 percent) of towers and business locations.”<sup>151</sup> Finally, all of these analyses are consistent with the Commission’s own preliminary conclusion that the special access data “show that incumbent LECs remain the sole facilities-based provider of TDM-based special access services to a majority of business locations that demand or are likely to demand business data services nationwide.”<sup>152</sup>

Moreover, the data demonstrate that the small percentage of buildings at which the incumbent is not the sole supplier almost always are served by only two providers. For example,

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<sup>149</sup> Black Decl. ¶ 8.

<sup>150</sup> Deem *et al.* Decl. ¶ 80 (further noting that \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*  
[REDACTED] \*\*\*  
END HIGHLY CONFIDENTIAL \*\*\*).

<sup>151</sup> Windstream Comments at 33.

<sup>152</sup> See *Investigation of Certain Price Cap Local Exchange Carrier Business Data Services Tariff Pricing Plans*, Order Initiating Investigation and Designating Issues for Investigation, 30 FCC Rcd. 11,417, ¶ 4 (2015) (“*Designation Order*”).

Drs. Besen and Mitchell find that there are two suppliers—the incumbent LEC and a competing carrier—at \*\*\* **BEGIN HIGHLY CONFIDENTIAL** \*\*\* [REDACTED] \*\*\* **END**

**HIGHLY CONFIDENTIAL** \*\*\* of locations.<sup>153</sup> Dr. Baker similarly concludes that \*\*\*

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[REDACTED] \*\*\* **END HIGHLY CONFIDENTIAL** \*\*\*.<sup>154</sup> In other words, virtually all locations—\*\*\* **BEGIN HIGHLY CONFIDENTIAL** \*\*\* [REDACTED] \*\*\* **END HIGHLY**

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*Bandwidth-Based Concentration.* Calculations based on bandwidth-based market shares further confirm the incumbent LECs’ dominance. For example, Drs. Besen and Mitchell calculate Herfindahl-Hirschman Index (“HHI”) values using these data, concluding that the HHI exceeds the level characterized by the antitrust agencies as “Highly Concentrated” in \*\*\*

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**CONFIDENTIAL** \*\*\* of both census blocks in which only an incumbent LEC provides special access services and those in which the incumbent LEC is not the sole supplier of special access services.<sup>156</sup> Using bandwidth-based information to perform a share analysis, Drs. Besen and

Mitchell further find that the incumbent LECs are the sole providers of special access services “in \*\*\* **BEGIN HIGHLY CONFIDENTIAL** \*\*\* [REDACTED] \*\*\* **END HIGHLY**

**CONFIDENTIAL** \*\*\* of all census blocks in which they provide service.”<sup>157</sup> Moreover, Dr.

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<sup>153</sup> Besen/Mitchell ¶¶ 25 (Table 1), 26.

<sup>154</sup> Baker Decl. ¶ 44.

<sup>155</sup> Besen/Mitchell ¶¶ 25 (Table 1), 26; *see also, e.g.*, Baker Decl. ¶ 44 (“[A]most all buildings \*\*\* **BEGIN HIGHLY CONFIDENTIAL** \*\*\* [REDACTED] \*\*\* **END HIGHLY CONFIDENTIAL** \*\*\* have no more than two providers.”).

<sup>156</sup> Besen/Mitchell Decl. ¶¶ 36 (Table 3), 37-38.

<sup>157</sup> *Id.* ¶ 28 n.45.

Baker finds that, \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED]

[REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\*<sup>158</sup>

*Revenue-Based Shares.* The analyses of the revenue data made available for review again reach the same conclusion: incumbent LECs continue to possess market power in the provision of special access services. Drs. Besen and Mitchell calculate revenue-based market shares for each of the major incumbent LECs, both for all special access services sold and for special access offerings of differing capacities. Notably, “the weighted-average ILEC share of revenues of all special access services combined is \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\* with a relatively small variation among carriers.”<sup>159</sup> Moreover, the incumbent LECs have near complete dominance of the 0-10 Mbps and 10-50 Mbps product markets, which represent the vast majority of special access lines. Specifically, the incumbent LECs’ share of this bandwidth range amounts to \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\*.<sup>160</sup>

Ad Hoc’s analysis of revenue-based shares further buttresses the conclusion that the incumbent LECs remain overwhelmingly dominant. Ad Hoc finds that the incumbent LECs receive \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\* of the revenues for owned TDM-based facilities.<sup>161</sup> Similarly,

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<sup>158</sup> Baker Decl. ¶ 45.

<sup>159</sup> Besen/Mitchell Decl. ¶ 40; *see also id.* ¶ 39 (Table 4).

<sup>160</sup> Declaration of William P. Zarakas and Susan M. Gately ¶ 17, appended as Attachment 2 to Sprint Comments (“Zarakas/Gately Decl.”).

<sup>161</sup> Ad Hoc Comments at 6.

Windstream notes that market analysts have reported that incumbent LECs accounted for \*\*\*

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*Potential Competition.* Importantly, the expert analyses filed by Sprint and others in the record fully account for the impact of potential competitive entry on the special access marketplace. The threat of potential competition will constrain the prices and practices of incumbent LECs only if, within the relevant geographic area, there is an adequate number of rival firms that are capable of providing the products that consumers want quickly and efficiently. In the special access marketplace, none of these prerequisites are present.

First, even across census block areas, there still is only the incumbent LEC or one other provider present in the overwhelming majority of blocks.<sup>163</sup> In addition, **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** [REDACTED] **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of census blocks contain three suppliers and **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** [REDACTED] **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of blocks contain four or more suppliers.<sup>164</sup> Of course, because the census block is an overly broad geographic market, these minute percentages still overstate the extent of potential competition. Indeed, the presence of a competing provider in one part of a census block does not mean that the carrier is able or willing to compete against the incumbent LEC in all parts of the block “or even that the ‘potential competitor’ provides the same special access service as the ILEC.”<sup>165</sup>

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<sup>162</sup> Windstream Comments at 34.

<sup>163</sup> Besen/Mitchell Decl. ¶¶ 27 (Table 2), 28.

<sup>164</sup> *Id.*

<sup>165</sup> *Id.* ¶ 29.

Second, as discussed above, competitive providers continue to face extraordinarily high barriers to building out facilities to individual locations. As the Joint CLECs correctly find, the incumbent LECs’ “stranglehold over the connection to the end user is the source of the incumbent LECs’ enduring market power, and there is no prospect that it will abate in the foreseeable future.”<sup>166</sup>

In short, the quantitative and qualitative analyses of the special access data submitted by Sprint, the Joint CLECs, and other parties lead to the same inescapable conclusion: “the incumbent LECs possess substantial and persisting market power in the provision of dedicated services throughout the United States.”<sup>167</sup> As a result, the data confirm “what nearly all parties other than the ILECs have been reporting . . . for many years: there is not enough competition in the special access market to justify the Commission’s ‘pricing flexibility’ rules for the ILECs’ TDM services or to justify regulatory forbearance for their non-TDM services.”<sup>168</sup>

**B. The Data and Other Evidence Confirm that the Incumbent LECs Employ Their Market Power to the Detriment of Consumers and Competition.**

The record also confirms that the incumbent LECs wield their sweeping command over the special access marketplace to raise prices and suppress competition in downstream markets for broadband services. The pervasive, supracompetitive prices charged by incumbents create

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<sup>166</sup> Joint CLEC Comments at 48.

<sup>167</sup> *Id.* at 1-2; *see also, e.g.*, Besen/Mitchell Decl. ¶ 22 (“[I]n the vast majority of special access product and geographic markets, the incumbent LECs do not face effective competition.”); XO Comments at 4 (“ILECs continue to have market power for the provision of Dedicated Services in virtually all locations around the country. This holds for customers with lower performance needs who continue to access TDM services over ILEC facilities (regardless of whether they purchase directly from an ILEC or from a CLEC that acquires the facilities or services from the incumbent at wholesale), as well as for customers who use higher performance Ethernet services[.]”).

<sup>168</sup> Ad Hoc Comments at i.

economic losses that, according to some estimates, exceed over \$20 billion per year in foregone output and almost 100,000 fewer American jobs.<sup>169</sup> Ultimately, these charges cost the U.S. economy far more by depriving it of the increases in broadband uptake, speed, capacity, and innovation that a truly competitive marketplace for enterprise broadband services would provide.

**1. Baker’s regressions make clear that the lack of competition has resulted in supracompetitive prices.**

Using billing information provided under the special access data request, Dr. Baker compares the impacts of in-building and nearby competition on incumbent retail pricing for special access services,<sup>170</sup> and finds that in-building competition constrains incumbent pricing much more substantially than competition in even nearby buildings. In other words, Dr. Baker’s results not only provide econometric confirmation that the barriers competitive providers face to overbuild incumbent facilities are often insurmountable,<sup>171</sup> but also reveal that the incumbent LECs are inflicting grave harms on the special access marketplace by using their dominance to raise prices above competitive levels. Indeed, Dr. Baker finds that while **\*\*\* BEGIN HIGHLY**

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The presence of additional in-building providers, however, is exceedingly rare: only \*\*\*

<sup>169</sup> Economist Report of Stephen E. Siwek at 3 (dated Mar. 2011), attached to Letter from Maura Corbett, Spokesperson, NoChokePoints Coalition, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 05-25 (filed Mar. 15, 2011).

<sup>170</sup> See Joint CLEC Comments at 49-50; Baker Decl. ¶ 63; Sappington Decl. ¶¶ 19-23.

<sup>171</sup> See *supra* Section III.B.

<sup>172</sup> Baker Decl. ¶¶ 63-64.

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\*\*\* of building locations where an incumbent provides service have more than two providers, and less than \*\*\* **BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED] \*\*\* END HIGHLY CONFIDENTIAL** \*\*\* have more than three.<sup>173</sup> In all other locations, Dr. Baker’s analysis establishes that incumbents charge rates above competitive norms, as their pricing behavior remains un- or under-disciplined by available competition.

**2. The incumbent LECs are engaging in a price squeeze by charging more for wholesale inputs than for retail services.**

Using their power—and propensity—to raise prices, the incumbent LECs are also engaging in price squeeze tactics to diminish competition for broadband services. Numerous commenters report that incumbent LECs charge more for wholesale services than they do for retail services. Indeed, a Level 3 executive reports that the company’s leased lines are “usually” purchased as an “incumbent LEC DSn-based dedicated service,” and that these services are priced so high that Level 3 “often cannot rationally charge a price below the incumbent LEC wholesale price for the underlying circuit.”<sup>174</sup> TDS Metrocom similarly reports that for capacities “generally in demand” by customers of its competitive LEC arm, incumbent LECs charge wholesale rates that “are typically higher than” the rates the incumbent LECs “offer at retail to TDS CLEC’s customers”—even when the customer is located “in an on-net building.”<sup>175</sup>

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<sup>173</sup> Besen/Mitchell Decl. ¶ 25 (Table 1); *see also* Baker Decl. ¶ 44.

<sup>174</sup> Joint CLEC Comments at 27.

<sup>175</sup> Comments of TDS Metrocom, LLC at 25, WC Docket No. 05-25 (filed Jan. 27, 2016) (“TDS Comments”).

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This behavior applies to both TDM and packet-based, and low-capacity and high-capacity, special access services. Indeed, Windstream provides examples of large incumbents “charging the[ir] carrier customer[s] much more than a comparable retail customer, even when the carrier customer makes significant volume commitments that the retail customer does not,” for certain Ethernet services.<sup>176</sup> Similarly, XO reports that in numerous markets, “AT&T’s wholesale Ethernet prices are so high as to prevent XO from providing retail services in buildings where it must rely on ILEC services as wholesale inputs.”<sup>177</sup> And the Joint CLECs note that Dr. Baker’s review of average prices for both DS1 and lower-capacity Ethernet services confirms that **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** [REDACTED]

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Sprint’s experience provides further evidence that incumbent LECs use their wholesale pricing power to suppress retail competition—and that the “price squeeze” observed by competitive providers of wireline broadband services is part and parcel of a larger strategy to raise rivals’ costs in all downstream retail markets for broadband services. Sprint has direct experience with incumbent LEC wholesale services that are priced above retail rates, thereby ensuring that customers—including the U.S. government—would not benefit from a more efficient Sprint wireline offering.<sup>179</sup> Sprint has also been forced to overcome high wholesale rates for wireless backhaul, and enormous penalties paid to the incumbent LECs when Sprint

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<sup>176</sup> Windstream Comments at 51.

<sup>177</sup> XO Comments at 43.

<sup>178</sup> Joint CLEC Comments at 26; *see* Baker Decl. ¶ 72.

<sup>179</sup> *See* Letter from Paul Margie, Counsel, Sprint Corporation, to Marlene H. Dortch, Secretary, FCC, at 5-6, WC Docket No. 05-25 (filed Sept. 23, 2015).

invests in critical upgrades of its wireless network as it competes with the incumbents’ wireless affiliates.<sup>180</sup>

The point of this behavior is to ensure that any impact on incumbent pricing from non-facilities based competition remains small—and, in that respect, Dr. Baker’s analysis confirms that the incumbents’ strategy has been a remarkable success.<sup>181</sup> Moreover, because retail special access services are typically provided alongside voice, collaboration, and cloud platform technologies, the incumbents’ price squeeze deprives the marketplace of the competitive dynamics needed to ensure that American businesses, universities, hospitals, and schools receive high-quality and innovative communications services of all kinds.

### **3. Other evidence validates that prices are excessive.**

Other analyses confirm that incumbent LECs charge supracompetitive rates for special access services. As previously explained in the record of this proceeding, the Government Accountability Office (“GAO”) has concluded that “facilities-based competition for dedicated access services to end users at the building level (*i.e.*, analogous to channel terminations to end users) does not appear to be extensive,”<sup>182</sup> and that “prices and average revenues are higher, on average, in phase II MSAs—where competition is theoretically more vigorous—than they are in

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<sup>180</sup> *Id.* at 6.

<sup>181</sup> See Joint CLEC Comments at 49-50 (explaining the small impact that the presence of competitive facilities in “nearby” locations has on incumbent pricing as a result of the fact that “nearby” providers will often lease incumbent lines to provide service).

<sup>182</sup> U.S. GOV’T ACCOUNTABILITY OFFICE, *FCC Needs to Improve Its Ability to Monitor and Determine the Extent of Competition in Dedicated Access Services*, GAO-07-80, at 19 (Nov. 2006), <http://www.gao.gov/products/GAO-07-80>; see also *id.* at 2 (“Limited competitive build out in these MSAs could be caused by a variety of entry barriers, including zoning restrictions, or difficulties in obtaining access to buildings from building owners that discourage competitors from extending their networks.”).

phase I MSAs or in areas where prices are still constrained by the price cap.”<sup>183</sup> Moreover, as Sprint has reported previously, month-to-month rates for DS1 and DS3 unbundled network elements are generally priced substantially below even the loyalty-plan rates for special access services that incumbents charge upon the customer’s acceptance of a purchase commitment, and far below the rack rates buyers must pay to avoid loyalty plans.<sup>184</sup> And according to a recent study by Ofcom, the telecommunications regulator in the United Kingdom, the “lowest available” rates in the United States for the “super fast” wholesale services that the incumbent LECs insist benefit from significant competition are still more than double the rates available in the United Kingdom.<sup>185</sup> Indeed, except for France, the United States enjoys the dubious distinction of having the highest special access rates in the world.<sup>186</sup>

Commenters have placed additional analyses on the record in further support of the conclusion that current pricing for special access services far exceeds competitive levels. For example, INCOMPAS compares incumbent retail rates for Ethernet special access services to imputed retail rates calculated using the wholesale rates for Ethernet services that rural incumbent LECs charge under the National Exchange Carrier Association Access Service FCC Tariff #5 (the “NECA Tariff #5”). Despite the advantages incumbents enjoy as a result of their size, incumbency, and provision of services in dense, low-cost of service areas, their retail rates exceed “*by an order of magnitude*” the retail rate a carrier could charge if it used the rural

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<sup>183</sup> *Id.* at 13.

<sup>184</sup> *See* Sprint 2010 Comments at 27 n.88

<sup>185</sup> *See* Letter from Sheba Chacko, Head - Americas Regulation and Global Telecoms Policy, BT Americas Inc., to Marlene H. Dortch, Secretary, FCC, Attachment at 7, WC Docket No. 05-25 (filed June 3, 2015).

<sup>186</sup> *Id.*

carrier's wholesale offering as an input for a finished retail product.<sup>187</sup> TDS Metrocom also compared NECA Tariff #5 rates to the retail rates charged by incumbents, and similarly concluded that incumbent rates far exceeded the rates even rural competitors charge for Ethernet special access.<sup>188</sup>

**V. MARKETPLACE TRENDS DO NOT PRESAGE A SUDDEN EMERGENCE OF SPECIAL ACCESS COMPETITION**

In a further effort to escape the reality confirmed by the data, the incumbent LECs argue that recent trends in the special access marketplace arising since the submission of the 2013 special access data have magically changed the competitive landscape. They assert that cable entry, the growth of Ethernet, and rapidly increasing needs in wireless backhaul have transformed the special access marketplace so drastically that Commission regulations are not needed—regardless of what the collected data reveal. Emphasizing the supposed magnitude of these developments, CenturyLink claims that “the Commission does not appear to have fully grasped [their] extent and significance.”<sup>189</sup>

These claims are, of course, incorrect. There has been no fairy dust sprinkled on the special access marketplace in the form of effective competition—and the incumbent LECs can point to no evidence that competition has suddenly “sprung up”—in the short period between the data collection and today. The incumbent LECs peddled these arguments in the past, and they hold no more truth now than they did before.

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<sup>187</sup> Comments of INCOMPAS at 15, WC Docket No. 05-25 (filed Jan. 27, 2016) (emphasis added).

<sup>188</sup> TDS Comments at 27.

<sup>189</sup> CenturyLink Comments at 12-13.

**A. Cable Entry Has Not Produced Effective Competition**

Resting on the notion that the data from the 2013 data collection are already outdated, the incumbent LECs point to the cable industry as evidence that the special access marketplace has since evolved to become a robust, dynamic market where the incumbent LECs face “aggressive competition.”<sup>190</sup> The incumbent LECs argue that the data collection understates competition because the data do not account for cable entry. But, contrary to these claims, the cable industry is not a miraculous solution to the problem of stalled competition in the special access marketplace.

Although incumbent LECs argue that cable is a viable alternative to purchasers, the reality is that cable still comprises a small portion of the overall market—only \$1 billion of the \$14 billion local wholesale transport market.<sup>191</sup> Nevertheless, Verizon asserts that, in a span of a mere two years, “[c]able companies have expanded quickly and aggressively into the high-capacity marketplace.”<sup>192</sup> Likewise, AT&T insists that practically overnight the entire marketplace has been transformed through the “explosive growth and facilities investment undertaken by cable companies.”<sup>193</sup> Verizon cites reports, marketing materials, and quotes from earning transcripts as evidence that cable companies are expanding special access services to enterprise customers.<sup>194</sup> Yet these reports do not actually indicate whether the cable companies

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<sup>190</sup> *Id.* at 11; *see also* AT&T Comments at 13-15; Verizon Comments at 28-40.

<sup>191</sup> Sean Buckley, *Cable Becomes Emerging Special Access Source for CLECs, but Trails AT&T and CenturyLink’s Ubiquity*, FierceTelecom (Mar. 26, 2015), <http://www.fiercetelecom.com/story/cable-becomes-emerging-special-access-source-clecs-trails-att-and-centuryli/2015-03-26>.

<sup>192</sup> Verizon Comments at 30.

<sup>193</sup> AT&T Comments at 3.

<sup>194</sup> Verizon Comments at 32-33.

offer meaningful competition in the special access marketplace.<sup>195</sup> For instance, as evidence of cable competition, Verizon points to Comcast’s announcement that it will expand retail enterprise offerings through partnerships with other cable providers that have existing facilities, rather than creating new facilities in marketplaces that are currently dominated by an incumbent LEC.<sup>196</sup> Importantly, these materials make no mention of any plans to expand Comcast’s provision of wholesale special access at all. In Sprint’s experience, cable companies have been reluctant to provide an aggressive wholesale alternative to competitive enterprise broadband providers, and there is no certainty that they will continue to provide any wholesale alternative as they seek to expand their retail enterprise business. Moreover, the majority of services that cable companies offer are not true competitive alternatives, but rather are comprised of Ethernet over coaxial or hybrid fiber coaxial (“EoHFC”) services that are fundamentally different from the special access services provided by the incumbent LECs.

Cable’s modest inroads into special access highlight the fact that incumbent LECs overwhelmingly dominate the provision of special access services due to their broad reach in wireline network infrastructure. A far-reaching network—something cable companies readily admit that they lack<sup>197</sup>—is critical to being a competitive choice for larger, multi-location enterprise customers. For example, Charter states that “a provider typically must have a broad regional footprint without significant gaps in coverage areas to serve large enterprises with

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<sup>195</sup> *Id.* at 32-35.

<sup>196</sup> *Id.* at 31.

<sup>197</sup> Opposition to Petitions to Deny and Response to Comments of Comcast Corporation and Time Warner Cable Inc. at 70-71, MB Docket No. 14-57 (filed Sept. 23, 2014) (“Because larger businesses and enterprise customers have locations spanning multiple areas and cable footprints, Comcast, TWC, and other cable companies have been unable to offer seamless business service option . . . .”) (“Comcast and TWC Opp.”).

multiple sites across given geographic regions effectively.”<sup>198</sup> Comcast confirmed that, without a sufficiently broad network, cable companies could not act as “meaningful competition against incumbent providers.”<sup>199</sup> Nevertheless, Verizon selectively cites portions of marketing materials from cable companies in order to illustrate that cable has broader service areas now than ever before.<sup>200</sup> Even if these advertisements were accurate representations of network coverage, cable companies cannot “duplicate the entirety [of] incumbents’ ubiquitous networks.”<sup>201</sup> As a result, competitive LECs continue to rely on incumbent LECs as the controlling seller of special access services.

Furthermore, even if the cable companies offered the sort of “aggressive competition” the incumbent LECs describe in the limited number of places where the cable companies’ networks extend, the end result would be that only small sections of the market would transform from a monopoly to a duopoly, which, as discussed earlier, would hardly create an effectively competitive marketplace.<sup>202</sup> This is hardly the type of competitive pressure that would discipline a firm’s conduct; the Commission has found that duopolies present similar pricing risks to monopolies and create “significant decreases in consumer welfare.”<sup>203</sup>

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<sup>198</sup> Public Interest Statement of Charter Communications Inc., Time Warner Cable Inc., and Advance/Newhouse Partnership at 35-36, MB Docket No. 15-149 (filed June 25, 2015).

<sup>199</sup> Comcast and TWC Opp. at 70-71.

<sup>200</sup> Verizon Comments at 34-35.

<sup>201</sup> Reply Comments of COMPTTEL at 10, WC Docket No. 05-25 (filed Mar. 9, 2015).

<sup>202</sup> See *supra* Section III.C.

<sup>203</sup> See, e.g., *Wireline Competition Bureau Seeks Comment on Applying the Qwest Phoenix Forbearance Order Analytic Framework in Similar Proceedings*, Public Notice, 25 FCC Rcd. 8013, ¶ 29 (2010).

**B. TDM Remains the Most Common Special Access Technology, and Ethernet Has Not Changed the Competitive Landscape**

The incumbent LECs suggest that customers are rapidly migrating from TDM to Ethernet.<sup>204</sup> They suggest that growth in the use of Ethernet and other packet-based technologies has (1) reduced the importance of TDM services<sup>205</sup> and (2) created a competitive special access marketplace.<sup>206</sup> This is simply not true. Special access services provisioned using TDM technologies are, and continue to be, a large and critical part of the special access market. And while there has been an increase in usage and demand for high-capacity services in the special access marketplace—including from those consumers that use Ethernet as the underlying technology—this growth has not changed the competitive landscape.

Far from being “rapidly headed for extinction,”<sup>207</sup> TDM services remain critical. As the Commission recognized in the *Tariff Investigation Designation Order*, “TDM-based special access sales totaled approximately \$25 billion, or about 60 percent of the total special access market of \$40 billion,” and “use of legacy business services will remain stable at least through 2017.”<sup>208</sup> Further, as Sprint explained in its initial comments:

The TDM services provided by the incumbent LECs—both standalone offerings and inputs to the Ethernet services provided by competitive supplies—continue to be a critical part of the special

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<sup>204</sup> Verizon Comments at 11; AT&T Comments at 16; CenturyLink Comments at 11-12.

<sup>205</sup> See, e.g., AT&T Comments at 21-22 (“Customers are rapidly abandoning legacy TDM technologies . . .”).

<sup>206</sup> See, e.g., CenturyLink Comments at 13-14 (“When the full range of competitive alternatives are properly taken into account, it should be clear that ILECs provide TDM-based special access services within a broader, high-capacity transmission marketplace in which they are steadily losing market share to other providers.”).

<sup>207</sup> AT&T Comments at 22.

<sup>208</sup> *Designation Order* ¶ 14. In addition, the Commission found that “for some of the largest price cap incumbent LECs, DS1 and DS3 channel termination sales actually increased from 2010 to 2013.” *Id.*

access marketplace. These TDM-based special access services are likely to remain the “basic building blocks of business data services for the foreseeable future,” at least until such time as packet-based services are made available at competitive rates.<sup>209</sup>

In a properly functioning marketplace, TDM-based services would have long been phased out and replaced with faster and more efficient Ethernet-based technologies. In today’s marketplace, however, competitive providers have no choice but to utilize TDM-based technologies, in large part, due to “[t]he incumbent LECs’ continued, and almost exclusive focus on their legacy TDM-based special access offerings . . . .”<sup>210</sup>

Moreover, the special access data belie the incumbent LECs’ assertions that high-capacity services provisioned via Ethernet have consumed a significant or even sizable part of the marketplace. Notably, the highest-capacity circuits, those with speeds greater than or equal to 200 Mbps, accounted for just under **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of all special access circuits sold.<sup>211</sup>

Indeed, lower-capacity circuits (*i.e.*, circuits up to 50 Mbps), such as TDM-based DS1 and DS3 legacy services and their Ethernet equivalents, account for over **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of all special access circuits sold,<sup>212</sup> and almost **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of the incumbent LECs’ total special access revenues.<sup>213</sup> Given the critical importance to the incumbent LECs’

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<sup>209</sup> Sprint Comments at 70 n.205 (citing *Designation Order* ¶ 13).

<sup>210</sup> *Id.* at 72.

<sup>211</sup> Zarakas/Gately Decl. at Table 2.

<sup>212</sup> *Id.* ¶ 17, Table 2.

<sup>213</sup> *Id.* at Table 3.

bottom line of lower-capacity services, many of which are and will continue to be provisioned using TDM, it is no surprise that the incumbent LECs want the Commission to ignore this enormously profitable segment of the marketplace.

The fact remains that use of Ethernet as the underlying technology has not overtaken TDM as the dominant special access product. Even if it had, that alone would not imply the sudden emergence of special access competition. Contrary to the incumbents' claims,<sup>214</sup> the increase of special access products provisioned via IP-based technologies, such as Ethernet, has little bearing on competition. Instead, control of the physical facilities over which special access services are provisioned is key. On the other hand, “the *capacity* of special access services creates important distinctions that warrant separate treatment . . . .”<sup>215</sup> As explained, this is because consumers treat Ethernet and lower-capacity TDM services, such as DS1 and DS3, interchangeably,<sup>216</sup> and because, at a certain point, differences in capacity become great enough that consumers do not regard them as substitutes. Accordingly, the Commission must consider whether all services that offer similar capacities—*i.e.*, services that are in the same product market—are subject to effective competition and not whether a new underlying technology is available to market participants.

Thus, although some providers and customers are migrating from TDM to Ethernet and other packet-based technologies as such services become available, this is hardly a sign that the Commission should drop its examination of the TDM special access market. To the contrary, the

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<sup>214</sup> See Comments of AT&T Inc. at 13, WC Docket No. 05-25 (filed Jan. 19, 2010) (arguing that the Commission would be wasting time and resources in imposing regulations on TDM services that were “going the way of the dodo”).

<sup>215</sup> Sprint Comments at 14.

<sup>216</sup> *Id.* at 15-16.

ongoing technology transitions make it even more critical that the Commission complete the rulemaking and devise appropriate rules to prevent incumbent LECs from leveraging their market power in anticompetitive ways. For instance, the incumbent LECs' hold on low-capacity special access services allows them to prevent customers from switching to alternative suppliers—including competitors who offer faster, IP-based products.

As Sprint has previously explained, its own attempts to transition from legacy services to IP-based services illustrate how difficult it is to migrate and how the incumbents manage to use their market power in TDM services to forestall customers' transition to Ethernet.<sup>217</sup> Sprint undertook its own transition through its Network Vision program, where it planned a network-wide rebid of virtually all of its wireless backhaul system to try to attract entry from competitive special access providers. Yet, even with Sprint's relatively large network and substantial resources, Sprint could not manage to solicit competitive bids from non-incumbents for a number of its cell sites. Notably, many of the cell sites failed to procure any Ethernet bids, meaning that Sprint had to stay with TDM services from the incumbent LEC for its backhaul needs. In addition, even when it did switch to a competitive provider, Sprint incurred significant penalties in its attempt to complete the transition—penalties incumbent LECs impose through loyalty mandates on purchasers trying to buy special access services from competitive providers.<sup>218</sup>

Ultimately, as one of the largest special access purchasers in the country, Sprint still could not attract sufficient competitive entry and was unable to successfully migrate to Ethernet

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<sup>217</sup> Sprint Direct Case Opp. at 47-51; Sprint Comments at 55-57.

<sup>218</sup> These penalties are ongoing. Aside from early termination penalties, the effort to migrate away from reliance on TDM and ILEC provisioned backhaul has caused disqualification from the minimum commitments under loyalty plans. Sprint is now forced to pay the incumbent LECs' egregious rack rates for a substantial portion of its total monthly special access expense.

in many places, thus maintaining its reliance on TDM services. Given the steep penalties Sprint was forced to absorb as a part of this all-out effort, it is unlikely that other special access purchasers could mount the type of campaign needed to accomplish such a transition. Other competitive LECs have also described the difficulty of transitioning from TDM services to Ethernet, noting that the incumbents' lock-up plans impose crippling shortfall penalties whenever purchasers do not meet previous volume commitments.<sup>219</sup> These volume commitments exclude Ethernet dedicated services purchases, which means that any carrier attempting to transition from TDM services to Ethernet would have to do so while shouldering the additional costs from the penalties.<sup>220</sup>

It is not only that purchasers cannot withstand such adverse conditions to switch to Ethernet—the point is that they should not have to. The fact that the incumbent LECs have put up these barriers to transition demonstrates that they have a dangerous amount of market power over TDM services and extensively utilize measures designed to protect it. The Commission therefore must act to ensure that competition can thrive in the special access market—otherwise, barriers to Ethernet transition will remain insurmountable for many purchasers of special access.

**C. Even in the Context of Special Access to Towers, the Incumbent LECs Remain Dominant**

Connecting cell towers to the Internet backbone via special access connections—in this context known as “wireless backhaul”—is a critical component of ensuring that customers have access to competitive wireless broadband services. Indeed, growth in demand for high-speed, 4G and soon 5G wireless broadband and other advanced services has made the need for competitive special access services more important than ever before.

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<sup>219</sup> Joint CLEC Comments at 46-48.

<sup>220</sup> *Id.*

Verizon incorrectly argues that the wireless backhaul “market” is an example of how competition is plentiful and why traditional special access services are no longer in need of regulation. Verizon claims that “this massive and ongoing surge in backhaul demand has enabled many new alternative providers and technologies to compete aggressively for this business, including cable operators, fiber-based CLECs, and fixed wireless providers.”<sup>221</sup> This argument is just another attempt to obscure reality.

First, options for special access services to connect cell towers are as limited as options for special access services to connect buildings. Indeed, there is no difference between connecting a building and connecting a cell tower—both require the same dedicated special access connection and, therefore, are in the same product market.<sup>222</sup> As a leading wireless carrier, Sprint’s own experience contradicts Verizon’s claims that “competition for wireless backhaul is thriving.”<sup>223</sup> As noted above, while Sprint’s efforts to overhaul its backhaul system to its cell sites were primarily an attempt to move purchases away from incumbent LECs, Sprint often was forced to award a large number of new service agreements to incumbents anyway because there were simply no other competitive bids.<sup>224</sup> The reality is that for \*\*\* **BEGIN**

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<sup>221</sup> Verizon Comments at 51.

<sup>222</sup> Sprint Comments at 11; *see also* Comments of BT Americas Inc. at 23, WC Docket No. 05-25 (filed Jan. 19, 2010) (“Special access services used to connect cell towers to mobile operators’ switching centers (*e.g.*, DS-1s) sit in the same product market as other equivalent special access services and should not be separated into a distinct product market. This was Ofcom’s conclusion in the UK.”); Sprint 2010 Comments at 15-16 (suggesting that special access services used for backhaul are identical to other special access services, except that the geographic markets in which backhaul services are supplied may be less competitive than the geographic markets for other special access services, because many cell towers are located in remote geographic locations).

<sup>223</sup> Verizon Comments at 51 (emphasis omitted).

<sup>224</sup> Sprint Comments at 56.

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locations, buildings or cell towers, incumbent LECs are the only facilities-based provider of DS1, DS3, or Ethernet-equivalent connections.<sup>225</sup> Verizon’s claim that the competitive state of wireless backhaul is somehow wildly different than the rest of the special access marketplace is wrong.

Second, Verizon argues that wireless backhaul is now served by “many new . . . technologies” that “compete aggressively for this business.”<sup>226</sup> But these “alternative technologies” that Verizon points to are cable and fixed wireless.<sup>227</sup> Just as the incumbents’ assertions that cable has brought a flowering of competition to special access services in general are inaccurate, so too are their arguments that cable has a significant impact on connections to cell towers. As explained above, cable cannot offer meaningful competition in wireless backhaul without the extensive networks that incumbent LECs control.<sup>228</sup> As for fixed wireless, it has already been established that this technology, which has substantial disadvantages in line-of-sight restrictions and limited range, does not act as a comparable substitute for wired special access services.<sup>229</sup> Despite the incumbent LECs’ claims that there are numerous “alternatives” that serve as substitutes for special access services, the truth is that wireless carriers have no choice but to continue to purchase special access services for the bulk of their wireless backhaul needs from incumbents.

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<sup>225</sup> Besen/Mitchell Decl. ¶ 26.

<sup>226</sup> Verizon Comments at 51.

<sup>227</sup> *Id.*

<sup>228</sup> *See supra* Section V.A.

<sup>229</sup> *See supra* Section III.A.1; *see also* Reply Comments of BT Americas Inc., Cbeyond Communications, LLC, EarthLink, Inc., Integra Telecom, Inc., Level 3 Communications, LLC, and tw telecom inc. at 20, WC Docket No. 05-25 (filed Mar. 12, 2013).

In light of the increased demand for wireless backhaul, it is more important than ever that the Commission work to protect competition in the special access marketplace. The consequences of this proceeding will have reverberations in other critical areas, such as the deployment of 5G mobile services and other technological advances, which are key priorities for this Commission.<sup>230</sup> These new services, which will benefit both businesses and consumers, will rely on the existence of competitive special access inputs to provide the necessary high-capacity backhaul.

**VI. INCUMBENT LEC COMPLAINTS ABOUT THE DATA ARE AN EFFORT TO DIVERT ATTENTION AWAY FROM MUCH NEEDED SPECIAL ACCESS REFORM**

Recognizing that the most comprehensive data collected in FCC history reveal the extent of their dominance of the special access marketplace, the incumbent LECs' next attempt is to undermine the data collection itself. For example, Verizon faults the Commission for failing to collect more than one year's worth of industry data and claims that the data the Commission has collected are too incomplete to be of any analytical use.<sup>231</sup> The Commission should reject these attempts to distract it from the overwhelming evidence of incumbent market power available in the current record.

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<sup>230</sup> See, e.g., *Technology Transitions; Policies and Rules Governing Retirement of Copper Loops by Incumbent Local Exchange Carriers et al.*, Report and Order, Order on Reconsideration, and Further Notice of Proposed Rulemaking, 30 FCC Rcd. 9372 (2015) (repeatedly emphasizing the Commission's efforts to "further," "speed[]," and "advance" the IP transition "without delay"); *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services, et al.*, Notice of Proposed Rulemaking, 30 FCC Rcd. 11,878, ¶ 1 (2015) (seeking comment on "a regulatory framework that will help facilitate so-called Fifth Generation (5G) mobile services").

<sup>231</sup> Verizon Comments at 14-19.

First, Verizon claims that the Commission “originally found at least two years of data were necessary for key parts of the analysis.”<sup>232</sup> This is incorrect. While the Commission noted that multiple years of data could help it control for factors “such as . . . building codes, climate, or soil quality” and assess potential competition, it did not conclude that two years of data was necessary for the central goal of the data collection: a traditional competition analysis.<sup>233</sup> In fact, the Commission explicitly stated that an analysis of “a time series of data” was just “[o]ne way” to evaluate potential competition.<sup>234</sup> Indeed, Verizon does not explain how historical data preceding 2013 would impact its own “forward-looking” assessment of potential competition, which relies on evidence purporting to show that suppliers in the “dynamic high-capacity marketplace” have very recently begun to expand competing offerings.<sup>235</sup> Nor does Verizon provide any plausible basis for believing that “building codes,” “climate,” “soil quality,” or other such factors are driving the manifestations of incumbent market power reflected in the data.

Second, Verizon claims that the data set is “materially incomplete.”<sup>236</sup> While no data collection could possibly cover all aspects of the special access marketplace, and Sprint also could point to additional information that it would find useful, the data collection has provided more than sufficient data for the FCC to complete its task. The data capture a large majority of the marketplace and are much richer than the data the Commission used in the recent, court-approved *Qwest Order*.

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<sup>232</sup> *Id.* at 12.

<sup>233</sup> *2012 R&O and FNPRM* ¶ 28.

<sup>234</sup> *Id.* ¶ 29.

<sup>235</sup> *See Verizon Comments* at 12.

<sup>236</sup> *Id.* at 17.

Analysis of the collected data make clear that the likelihood that competitive LEC circuits with missing location information would create a false negative for the presence of effective competition in any particular location is exceedingly small, given how few locations benefit from the presence of multiple competitive providers. If anything, the incumbent LECs' own failure to comply with the Commission's data request means that incumbent dominance is even more extensive than the data suggest.

Verizon's complaint about the exclusion of last-mile cable facilities from the data set also fails, as these facilities are primarily used to supply best efforts broadband services to residential locations, which occupy a different product market than those relevant to this proceeding. And its remaining quibbles that the data could be more encyclopedic should be dismissed out of hand. The Commission has previously supported findings of market power without comprehensive information on presence, location, and revenue,<sup>237</sup> let alone multiple years of such data, and can certainly undertake the same analysis using the vastly superior record it has assembled in this proceeding.

**VII. THE COMMISSION MUST ENACT INTERIM MEASURES AND LONG-TERM RELIEF TO INJECT COMPETITIVE CONDITIONS IN THE BROKEN SPECIAL ACCESS MARKETPLACE**

The record demonstrates conclusively both that there is insufficient actual or potential competition in the special access marketplace in the vast majority of locations and that the incumbent LECs' attempts to obscure their dominance rely on false assumptions about consumer requirements and the feasibility of overbuilding incumbent last-mile facilities. The incumbent LECs also have failed in their attempts to undermine the most comprehensive data collection in FCC history. Despite the incumbent LECs' glaring omissions from the data request, the

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<sup>237</sup> *Qwest Order* ¶ 76.

Commission’s data set reliably establishes that the incumbent LECs wield extraordinary market power. This conclusion remains undisturbed by the garbled evidence the incumbent LECs offer in support of their annual argument that, this time around, competition *really is* just around the corner. Indeed, marketplace trends—including the growing need for wireless backhaul that the incumbent LECs themselves acknowledge—merely demonstrate the urgency with which the FCC must proceed as it begins the process of fixing the broken special access marketplace.

**A. The Commission Must Adopt Immediate Measures to Help Spur Competition**

The record reflects a consensus that the Commission must act immediately to spur wholesale and retail competition while it crafts longer term solutions designed to ensure that the rates, terms, and conditions of special access offerings are just and reasonable on a going-forward basis. For example, Ad Hoc proposes interim rate relief in pricing flexibility areas to mitigate the harms inflicted by the broken special access marketplace “pending a comprehensive update of the price caps rules.”<sup>238</sup> The Joint CLECs similarly ask the Commission to (1) “jumpstart the process of bringing competition to the dedicated services marketplace” by declaring incumbent LEC lock-up plans unlawful, (2) bring all special access services, including price flex DSn and Ethernet services subject to granted petitions for forbearance, within the price cap regime and reduce the price cap index (“PCI”) for special access services, and (3) undertake steps designed to prohibit price squeeze behavior, all before adopting a prospective X-factor on a going-forward basis.<sup>239</sup> TDS Metrocom asks the Commission to take immediate action to combat price squeeze tactics by establishing a cap for wholesale Ethernet rates and adopting

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<sup>238</sup> Ad Hoc Comments at 14.

<sup>239</sup> Joint CLEC Comments at 65.

pricing disclosure requirements.<sup>240</sup> Windstream likewise proposes a number of remedies targeted at specific marketplace abuses that the Commission could adopt at this time.<sup>241</sup> As set forth below, Sprint agrees that the Commission can provide meaningful relief to the special access marketplace now and supports many of the interim measures proposed in this proceeding.

**1. The Commission must adopt immediate remedies to address terms and conditions.**

To remedy the harms caused by incumbent LEC loyalty and lock-up terms and conditions, Sprint proposes that the Commission (1) find such terms unenforceable and (2) offer competitive providers a “fresh look” to consider competitive alternatives in the few places they are available.

*First*, because the terms and conditions comprising incumbent LEC loyalty commitments allow incumbent LECs to preserve and expand their market dominance, Sprint urges the Commission to determine that these loyalty commitments are unenforceable—just as it has done in the past to dismantle other unjust and unreasonable exclusive dealing arrangements.<sup>242</sup> Sprint

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<sup>240</sup> TDS Comments at 29-31.

<sup>241</sup> Windstream Comments at 60, 63-64, 73-77, 82-83, 87-100.

<sup>242</sup> *See, e.g., Promotion of Competitive Networks in Local Telecommunications Markets Wireless Communications Association International, Inc. Petition for Rulemaking to Amend Section 1.4000 of the Commission’s Rules to Preempt Restrictions on Subscriber Premises Reception or Transmission Antennas Designed to Provide Fixed Wireless Services et al.*, First Report and Order and Further Notice of Proposed Rulemaking in WT Docket No. 99-217, Fifth Report and Order and Memorandum Opinion and Order in CC Docket No. 96-98, Fourth Report and Order and Memorandum Opinion and Order in CC Docket No. 88-57, 15 FCC Rcd. 22,983, ¶¶ 1, 9 (2000); *Exclusive Service Contracts for Provision of Video Services in Multiple Dwelling Units and Other Real Estate Developments*, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd. 20,235, ¶ 1 (2007); *Promotion of Competitive Networks in Local Telecommunications Markets*, Report and Order, 23 FCC Rcd. 5385, ¶ 13 (2008) (“We find that immediately prohibiting the enforcement of such provisions is more appropriate than phasing them out or waiting until contracts expire and are replaced by contracts without exclusivity provisions.”); *see also W. Union Tel. Co. v. FCC*,

agrees with the Joint CLECs that “[a]ddressing this issue would jumpstart the process of bringing competition to the dedicated services marketplace by removing the artificial barrier to customer purchases of lower-priced competitive carrier dedicated services,” and that the “resulting increase in sales would accelerate the deployment of fiber connections and fiber transport facilities, resulting in larger competitive carrier networks.”<sup>243</sup>

*Second*, the Commission should suspend enforcement of incumbent LEC termination and portability penalties pending completion of its comprehensive reform effort. Doing so would serve to offer purchasers a “fresh look” at competitive alternatives—including Ethernet alternatives—in the few locations where competitive alternatives are available. This, too, is a remedy that the FCC has previously adopted in order to promote special access competition.<sup>244</sup> Although limited in scope because of the few geographic markets where competitive choice exists, a “fresh look” approach would create conditions more conducive to competitive entry in certain locations. As a result, the remedy would somewhat mitigate the incumbent LECs’ ability to exploit a critical point of transition in the history of U.S. telecommunications networks to expand their dominance over the special access marketplace.

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815 F.2d 1495, 1501 (D.C. Cir. 1987) (The FCC can “modify . . . provisions of private contracts when necessary to serve the public interest.”).

<sup>243</sup> Joint CLEC Comments at 65.

<sup>244</sup> See *Expanded Interconnection with Local Telephone Company Facilities*, Second Memorandum Opinion and Order on Reconsideration, 8 FCC Rcd. 7341, ¶¶ 3-41 (1993); *Expanded Interconnection with Local Telephone Company Facilities*, Memorandum Opinion and Order, 9 FCC Rcd. 5154, ¶¶ 197-208 (1994), *remanded on other grounds to Pacific Bell v. FCC*, 81 F.3d 1147 (D.C. Cir. 1996) (limiting termination liabilities in current contracts on the grounds that “certain long-term special access arrangements may prevent customers from obtaining the benefits of the new, more competitive access environment”).

**2. The Commission must also immediately adopt remedies to reduce rates.**

The data confirm that the incumbent LECs' dominance in the special access marketplace has enabled them to charge supracompetitive prices for special access services. To remedy the harm caused by these prices, Sprint urges the Commission immediately to revise the prevailing price cap regulations to reflect the current state of the special access marketplace. Specifically, the Commission should (1) bring all special access product markets within the price cap regime, including services previously granted pricing flexibility and those services that are not currently subject to dominant carrier regulation as a result of past Commission actions (or inaction); (2) adopt new "triggers" to identify areas that are subject to competition effective to restrain prices; and (3) craft an appropriate PCI. To ensure that rates charged to competitors are reasonable, the Commission should also make a one-time reduction in price caps to a level that ensures reasonable prices and then craft a going-forward X-factor.

*First*, the Commission should take the steps necessary to bring all special access products under price caps, including services currently subject to pricing flexibility and special access services provisioned by Ethernet or other IP-based technologies. The Commission should take this step immediately during the pendency of further reforms. Indeed, the Commission has already acknowledged that the pricing flexibility rules did not accurately identify areas subject to sufficient competition,<sup>245</sup> and the data now confirm that most locations in the U.S. do not benefit from effective competition.

The record also confirms that the current regulatory distinction between Ethernet and TDM services is an arbitrary one, and that the Commission's predictive judgments—and in some cases, *nonjudgments*—that competition would uniquely develop for Ethernet services have

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<sup>245</sup> 2012 Suspension Order ¶ 3.

proven to be incorrect. Moreover, as commenters have suggested, incumbent LEC market abuses, including price squeeze tactics and the imposition of competition-killing terms and conditions, are prevalent with respect to Ethernet special access service offerings and are significantly diminishing alternative providers' ability to compete.

*Second*, once the Commission adopts a reasonable method of identifying areas with competition sufficient to produce just and reasonable rates, terms, and conditions, it can determine the locations that are sufficiently competitive to warrant pricing flexibility.<sup>246</sup> Because the data confirm that these locations are few in number, the Commission can grant immediate relief in the vast majority of markets where there are only one or two competing providers while it develops criteria for determining the remaining locations that are, and are not, subject to effective competition. Indeed, the collected data may enable the Commission to quickly develop new triggers. For example, the Commission could perform regressions—like those performed by Dr. Baker—on the data it has today to help identify the number of providers necessary to produce competitive pricing in the special access marketplace. Notably, the Commission recognized that “an MSA is probably a much larger area than a competitor would typically choose to enter” when it suspended the application of the existing special access triggers.<sup>247</sup> The Commission may find that use of the building, as used by Dr. Baker in his regressions, provides a more accurate geographic measure of competitive entry. Indeed, Dr. Sappington suggests that the Commission can combine the data it has already collected with information on “location-specific entry barriers . . . to craft regulatory rules that are both administratively feasible and reasonably attuned to prevailing variation in competitive

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<sup>246</sup> Joint CLEC Comments at 64; *see* Windstream Comments at 100.

<sup>247</sup> *2012 Suspension Order* ¶¶ 35-36.

conditions.”<sup>248</sup>

*Third*, the Commission can draw from a number of resources to craft an appropriate PCI to act as a backstop against anticompetitive pricing behavior while still allowing market forces to determine specific prices and service offerings.<sup>249</sup> To initialize prices for all capacities of special access services, the Joint CLECs suggest that the Commission use either existing prices charged by competitive LECs or NECA Tariff 5 rates.<sup>250</sup>

As it has done in the past, the Commission should also make a one-time reduction in the PCIs to a level that ensures reasonable prices.<sup>251</sup> The Commission can do this immediately while it determines the best way to calculate a going-forward X-factor to govern the growth rate of special access services, thereby ensuring that incumbent LEC productivity savings from decreased costs or increased productivity are passed on to purchasers.<sup>252</sup> Indeed, as Dr. Sappington explains, it “is particularly important to revise the prevailing price cap regulation policy in a timely fashion to reflect industry developments in recent years,” because “[c]onsumers have been harmed by” the “two decade[]” long “lag in revisiting the X factor.”<sup>253</sup> The Commission should consider allowing incumbent LECs to submit cost studies to demonstrate that their costs exceed the rates set by regulation, which would enable the

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<sup>248</sup> Sappington Decl. ¶ 27.

<sup>249</sup> Joint CLEC Comments at 65; *see also* Sappington Decl. ¶ 28.

<sup>250</sup> Joint CLEC Comments at 65-66.

<sup>251</sup> *Price Cap Performance Review for Local Exchange Carriers*, First Report and Order, 10 FCC Rcd. 8961, ¶ 246 (1995). The record is replete with evidence that the incumbent LECs routinely suppress broadband competition by imposing excessive wholesale rates and unreasonable conditions on their retail competitors. *See* Comments of Joint CLECs at 67; TDS Comments at 29-30; Comments of Windstream at 60; XO Comments at 56-57.

<sup>252</sup> *See* Joint CLEC Comments at 67.

<sup>253</sup> Sappington Decl. ¶ 28.

Commission to “re-start” the price cap regime quickly without fear of imposing undue hardship on the incumbent LECs.

As the Commission has concluded, “setting a reasonable target and requirement for LEC productivity is one of the critical tasks in ensuring that the price cap plan will work as intended.”<sup>254</sup> The Commission should explore all available methodologies for updating the X-factor to reflect the productivity growth rates that the incumbent LECs are readily able to achieve. For instance, as explained by Dr. Sappington, the Commission could use the collected data to measure incumbent LEC outputs for 2013 as one input in an update of the X-factor.<sup>255</sup> The Commission could alternatively calculate an imputed X-factor based on changing prices of comparable services over time, using the data collection as one pricing point for such an analysis.<sup>256</sup> Other data that the Commission might use to impute an appropriate X-factor include inputs to historic Commission data reports (*e.g.*, ARMIS), posted tariff rates, competitor data, and/or cost models.

**B. The Commission Should Explore Long-Term Reform Alternatives Designed to Reduce Supracompetitive Prices for Special Access Services**

Though the measures outlined above will provide immediate relief to the special access marketplace, the Commission should explore whether alternative long-term regulatory regimes may more effectively govern special access prices, terms, and conditions in areas that are not subject to effective competition going forward.

***Competitive Benchmarks.*** First, the Commission should explore the use of competitive

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<sup>254</sup> *Policy and Rules Concerning Rates for Dominant Carriers*, Second Report and Order, 5 FCC Rcd. 6786, ¶ 75 (1990).

<sup>255</sup> Sappington Decl. ¶ 29.

<sup>256</sup> *Id.*

benchmarks to adjust prices for special access services in the vast majority of locations where competition does not constrain the incumbent LECs. The cable benchmarking rules are a useful starting point. Under the cable rules, a cable operator's rates were set at the rates that a cable operator facing effective competition would charge.<sup>257</sup> A cable company was allowed to exceed the benchmark rate only if it could make the case that its higher costs required higher rates.<sup>258</sup>

The Commission may be able to use the collected data to establish similar benchmarks. Specifically, the Commission could perform regressions like those presented in the Baker Declaration to identify geographic areas that are subject to price-disciplining competition.<sup>259</sup> The Commission could also establish the same flexibility in the special access context as it did when it implemented benchmarks for cable companies. By allowing an incumbent LEC to file cost studies demonstrating that its costs exceed the competitive benchmark prices for specific services and/or locations, the Commission could permit an incumbent LEC to charge higher prices when and where it is warranted.

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<sup>257</sup> *Implementation of Section of the Cable Television Consumer Protection and Competition Act of 1992; Rate Regulation*, Report and Order and Further Notice of Proposed Rulemaking, 8 FCC Rcd. 5631, ¶¶ 183, 213 (1993).

<sup>258</sup> *Id.* ¶ 213. In order to ensure it was establishing the appropriate benchmark, the Commission would need to employ an appropriate measure of the “price” for the incumbent LEC’s service. *See* Comments of Sprint Nextel Corporation at 12-16, WC Docket No. 05-25 (filed Feb. 11, 2013).

<sup>259</sup> Importantly, the observed prices in the data set contain statistical issues inherent with any special access pricing data. These issues—identified by Dr. Baker in conjunction with his regressions—are largely unavoidable and gathering additional data is unlikely to resolve many of these issues. For instance, impediments to competitive LEC expansion and the impact of incumbent LEC multi-year contracts and wholesale pricing policies would appear in any pricing data because these price-effecting conditions underlie all special access prices. The Commission would therefore need to adjust observed prices in the collected data set (or in any observed special access pricing data) to account for these issues.

**Cost Models.** The Commission should explore the use of cost models as a mechanism for establishing a long-term special access regulatory regime. Existing cost models demonstrate that current market prices for special access services are unreasonable.<sup>260</sup> For example, Windstream has submitted a cost model prepared by CostQuest that demonstrates the incumbent LEC prices for high-capacity special access services, including a reasonable rate of return.<sup>261</sup>

The Commission can use these cost models to develop price caps for special access services that do not face effective competition based on costs as computed by these models, including a reasonable return on investment. As with a potential benchmark remedy, the Commission can build flexibility into this remedy by allowing an incumbent LEC to submit cost studies to demonstrate that its costs exceed those identified in the study.

### **C. The Incumbent LECs’ Request for Further Pricing Relief Must be Rejected**

In the face of overwhelming evidence of entrenched and widespread incumbent market power and exorbitant prices for dedicated broadband services, the incumbent LECs nevertheless ask the Commission for relief from regulation.<sup>262</sup> The Commission plainly should reject these pleas to further deregulate the special access marketplace.

First, the incumbent LECs’ claim that “existing pricing flexibility triggers are too conservative”<sup>263</sup> relies on the same fallacy that forms the heart of the incumbent LECs’ erroneous market power analysis: the presence of just *one* competitor’s facilities in *any* part of a census block necessarily means that the *entire* census block is subject to effective competition.

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<sup>260</sup> Windstream Submission at 2.

<sup>261</sup> *See id.*

<sup>262</sup> AT&T Comments at 24-29; Verizon Comments at 68-69.

<sup>263</sup> AT&T Comments at 24; *see* Verizon Comments at 68 (“The record demonstrates that in each metropolitan area competitors are capable of and are serving the areas where demand is concentrated.”).

Second, the incumbent LECs’ claim that further deregulation would “accelerate” the IP transition is exactly backward.<sup>264</sup>

Through unchecked anticompetitive behaviors—including excessive wholesale pricing, exorbitant penalties, and onerous terms and conditions—the incumbent LECs are both limiting competitive providers’ ability to supply alternatives to incumbent retail Ethernet services and ensuring that their dominance continues as the country completes its transition to all-IP networks.

Moreover, contrary to the incumbent LECs’ claims, price cap regulation of TDM services would not “impede the transition to IP and deter competition and investment.”<sup>265</sup> Price cap regulation merely functions as a backstop against supracompetitive pricing. It does not subsidize access to incumbent facilities, and therefore would not distort the overbuild decisions of competitive providers.

## **VIII. CONCLUSION**

Despite rhetoric trumpeting vibrant and widespread special access competition, the incumbent LECs have failed to come forward with a single measure of actual competition in the special access marketplace. That, of course, should not come as a surprise. Numerous analyses now on the record demonstrate that the vast majority of locations with special access demand are served only by the incumbent, and that only a tiny percentage of locations benefit from more than one non-incumbent competitor.

The incumbents have failed to rebut this evidence of an uncompetitive special access marketplace. At best, they have offered a convoluted assessment of potential competition that

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<sup>264</sup> Verizon Comments at 69.

<sup>265</sup> *Id.*

departs from established competition analysis principles. To create the illusion of potential competition, their analysis employs overly broad product and geographic markets, and makes implausible assumptions about the pro-competitive effects that a sole potential competitor can provide to a marketplace dominated by the incumbent. Fatally, the incumbent LECs' assessment ignores completely the substantial barriers preventing entry in the incumbent-dominated last mile.

Without a meaningful analysis of the Commission's data to offer, the incumbents are left to repackage the same argument they have made for years: that marketing materials and analyst statements so conclusively prove that special access competition is on the verge of developing that they effectively refute the entirety of the comprehensive data collection. Even if this evidence were as reliable as the comprehensive data the Commission has collected, it would show precisely the opposite of what the incumbents claim. It reveals that the fiber networks of cable companies and competitive LECs remain insignificant in comparison to those of the incumbent LECs, that cable companies and competitive LECs struggle to compete with incumbents because of the limited reach of their networks, and that these companies are resorting to partnerships rather than facilities-based construction to increase their reach. Indeed, this purported "evidence" actually documents the challenges that these providers face in attempting to build out their fiber networks, and describes the limited scope of these efforts as a result.

Now that the Commission can conclude with unprecedented confidence that the special access marketplace is not competitive and that the incumbents are using their market power to extract enormous rents from U.S. consumers, it must adopt remedies to promote special access competition as quickly as possible. These remedies must put an immediate end to incumbent lock-up tactics and provide immediate pricing relief in the many areas that lack effective

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competition for all special access services, regardless of the technology used to provide them. After implementing these immediate steps to inject competition in the special access marketplace, the Commission should explore long-term solutions to ensure that incumbent pricing remains just and reasonable going forward.

Respectfully Submitted,



A handwritten signature in cursive script, appearing to read "A.P. Myrie", is positioned above a solid horizontal line.

Charles W. McKee  
*Vice President, Government Affairs*  
*Federal & State Regulatory*  
Chris Frentrup  
*Director, Senior Economist*  
Sprint Corporation  
900 Seventh Street NW, Suite 700  
Washington, DC 20001  
(703) 433-3205

A. Richard Metzger, Jr.  
Emily Daniels  
Lawler, Metzger, Keeney & Logan, LLC  
2001 K Street NW, Suite 802  
Washington, DC 20006  
(202) 777-7700

Paul Margie  
Jennifer Bagg  
Walter E. Anderson  
V. Shiva Goel  
Harris, Wiltshire & Grannis LLP  
1919 M Street NW, 8th Floor  
Washington, DC 20036  
(202) 730-1300

*Counsel for Sprint Corporation*

February 19, 2016

**REDACTED – FOR PUBLIC INSPECTION**

**ATTACHMENT 1  
DECLARATION OF DAVID SAPPINGTON**

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Special Access for Price Cap Local Exchange Carriers	)	WC Docket No. 05-25
	)	
AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services	)	RM-10593
	)	

**DECLARATION OF DAVID SAPPINGTON**

February 19, 2016

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**I. INTRODUCTION**

**A. Qualifications**

1. My name is David Sappington. I hold the titles of Eminent Scholar in the Department of Economics and Director of the Robert F. Lanzillotti Public Policy Research Center, both at the University of Florida.

2. Since earning my Ph.D. in economics from Princeton University, I have served on the faculties of the University of Michigan and the University of Pennsylvania and on the technical staff of Bell Communications Research. I have also served as the Chief Economist of the U.S. Federal Communications Commission (“the Commission”) and as the President of the Industrial Organization Society. I presently hold positions on the editorial boards of five major journals, including the *Journal of Regulatory Economics*, the *RAND Journal of Economics*, and the *Journal of Economics and Management Strategy*.

3. My research focuses on the design and implementation of regulatory policy. I have published more than 150 articles in leading journals in the profession and have coauthored a book entitled *Designing Incentive Regulation for the Telecommunications Industry*. My curriculum vitae appears in Attachment A to this declaration.

**B. Purpose of This Declaration**

4. I have been asked by counsel for Sprint Corporation (“Sprint”) to assess the extent of competition in the provision of special access services, as characterized by the evidence submitted in this proceeding. I have also been asked to consider the implications of my assessment for ongoing regulation of special access services.

5. My review of the record in this proceeding indicates that most census blocks are characterized by monopoly or duopoly supply of special access services. Even though fiber owned by competitive local exchange carriers (“CLECs”) often transits a census block, CLECs are not employing the fiber to serve customers in most census blocks.

6. The record also indicates that this discrepancy between the presence of competitive fiber facilities and the actual competitive provision of special access services likely reflects, in part, substantial incremental costs of serving customers even after fiber is deployed nearby. The presence of such substantial costs is consistent with the evidence that the competitive presence that prevails in most locations does not compel incumbent suppliers to reduce significantly the prices they charge for special access services. Consequently, ongoing regulatory oversight of the provision of special access services is warranted to replicate the competitive discipline that is missing.

**C. Outline of Declaration**

7. The remainder of this declaration proceeds as follows. Section II reviews the disparate characterizations of competition that appear on the record and notes that economists representing incumbent local exchange carriers (“ILECs” or “incumbent LECs”) do not support their assertion that the presence of nearby competitive fiber is sufficient to impose adequate pricing discipline on incumbent suppliers of special access services. Section III reviews important evidence on the record that contradicts this assertion of Drs. Israel, Rubinfeld, and Woroch (“the ILEC economists”), which may help to explain why the ILEC economists make little attempt to support their assertion. Section IV reviews the need to update regulatory policy, given the lack of evidence that competition is effectively disciplining the pricing of incumbent suppliers of special access services. Section V summarizes and concludes the declaration.

**II. THE PARTIES PRESENT SHARPLY CONTRASTING ASSESSMENTS OF THE COMPETITIVENESS OF THE SPECIAL ACCESS MARKETPLACE**

8. A primary role of regulation is to replicate the discipline of competitive markets when that discipline is lacking.<sup>1</sup> Consequently, the extent of industry competition is a critical consideration when designing regulatory policy. Relatively limited regulation typically is required if relevant markets exhibit substantial competition. More extensive regulation generally is appropriate if competition is limited or absent.

**A. Parties Paint Highly Distinct Portraits of the Competitive Landscape**

9. Participants in the present proceeding provide highly disparate characterizations of the extent of competition in the provision of special access services. Drs. Besen and Mitchell, for instance, report that the vast majority (more than **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **██████████** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\***) of special access purchaser locations are characterized by monopoly or duopoly supply.<sup>2</sup> Drs. Besen and Mitchell further report that only about **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **██████████** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of these locations are served by as many as three suppliers, and only about **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** **██████████** **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** are served by four or more suppliers.<sup>3</sup>

10. Drs. Besen and Mitchell also analyze supplier concentration in census blocks where special access services are provided. As Drs. Besen and Mitchell note, this analysis may well

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<sup>1</sup> See Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions, Volume 1: Economic Principles* 17 (John Wiley & Sons, Inc. 1970).

<sup>2</sup> Declaration of Stanley M. Besen and Bridger M. Mitchell ¶ 26, appended as Attachment 1 to Comments of Sprint Corporation, WC Docket No. 05-25 (filed Jan. 27, 2016) (“Besen-Mitchell Declaration”).

<sup>3</sup> *Id.*

overstate the prevailing competitive discipline because it abstracts from the fact that a supplier that serves one location in a census block may not be able to serve other locations profitably in the block in a timely manner. Nevertheless, Drs. Besen and Mitchell observe that “the Merger Guidelines characterize a market with an HHI above 2500 as ‘Highly Concentrated,’” and find that “the HHIs in \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED] [REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\* census blocks exceed this threshold, in most by a very substantial amount.”<sup>4</sup> Drs. Besen and Mitchell conclude that “in the vast majority of special access product and geographic markets, the incumbent LECs do not face effective competition.”<sup>5</sup>

11. In contrast, the ILEC economists report that “competitors have deployed sunk facilities in virtually every census block accounting for virtually all special access demand as measured by business establishments.”<sup>6</sup> The ILEC economists interpret their findings as “evidence of abundant competition for special access services.”<sup>7</sup>

**B. The ILEC Economists Assert that Actual and Potential Competition Are Equivalent**

12. These sharply contrasting assessments of the extent of competition in the provision of

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<sup>4</sup> *Id.* ¶ 37. The “Merger Guidelines” denote U.S. DEP’T OF JUSTICE AND FED. TRADE COMM’N, *Horizontal Merger Guidelines* (Aug. 19, 2010), <http://www.justice.gov/atr/horizontal-merger-guidelines-08192010> (“*Merger Guidelines*”). “HHI” denotes the Herfindahl-Hirschman Index, which is the sum of the squares of the market shares of all industry suppliers.

<sup>5</sup> Besen-Mitchell Declaration ¶ 22.

<sup>6</sup> Mark Israel, Daniel Rubinfeld, and Glenn Woroch, *Competitive Analysis of the FCC’s Special Access Data Collection*, at 25 (dated Jan. 26, 2016), attached to Letter from Glenn Woroch, Professor of Economics, University of California, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 05-25 (filed Jan. 28, 2016).

<sup>7</sup> *Id.*

special access services differ primarily in the weight afforded to potential competition, as opposed to actual competition. Actual competition pertains to the interactions among suppliers that actually serve customers in the relevant geographic market. Potential competition refers to the activities of entities that could, in principle, profitably deliver service to customers in a timely manner, but presently do not serve the customers in question.

13. The ILEC economists focus on the mere presence of CLEC fiber investment. In contrast to Drs. Besen and Mitchell, the ILEC economists largely ignore the actual use of the fiber to serve customers. In doing so, the ILEC economists effectively assume that a competitive supplier that has deployed fiber in a census block can serve any customer located in that block at low incremental cost, and can thereby preclude incumbent suppliers from increasing prices above competitive levels.<sup>8</sup>

**C. The ILEC Economists Fail to Meet Their Burden of Proof**

14. In simply asserting that nearby CLEC fiber will effectively constrain ILEC pricing of special access services, the ILEC economists fail to meet the requisite burden of proof. The Commission has determined that:

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<sup>8</sup> The ILEC economists assert that “once a core network is in place, extending laterals requires a significantly smaller capital expenditure per unit of bandwidth, making this a relatively low-cost expansion. As a result, providers with nearby facilities impose an effective competitive constraint on ILEC special access services even if they are not yet actively serving a particular location ...” *Id.* at 10.

Evidence that present competitors have deployed limited amounts of fiber in a larger geographic area does not support a conclusion that those providers readily could offer wholesale services on a particular route, or that a potential entrant economically could deploy its own fiber on a particular route in a timely manner in response to a small but significant and nontransitory increase in the price of wholesale transport services.<sup>9</sup>

Similarly, the *Merger Guidelines* state that when they assess industry conditions, the U.S. Department of Justice and the U.S. Federal Trade Commission “will not presume that an entrant can have a significant impact on prices before that entrant is ready to provide the relevant product to customers unless there is reliable evidence that anticipated future entry would have such an effect on prices.”<sup>10</sup> The ILEC economists have not provided such evidence.

### III. THE EVIDENCE DOES NOT SUPPORT THE ILEC ECONOMISTS’ ASSERTION

15. This failure of the ILEC economists to support their assertion may seem surprising, given that their case is not at all compelling without the requisite evidence. A careful review of the record in this proceeding enlightens this failure. Industry experts explain why the mere presence of CLEC fiber should not be expected to impose adequate pricing discipline on incumbent suppliers of special access services. Econometric analysis also indicates that the CLEC presence that prevails in most locations does not compel incumbent suppliers to reduce significantly the prices they charge for special access services.

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<sup>9</sup> *Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix, Arizona, Metropolitan Statistical Area*, Memorandum Opinion and Order, 25 FCC Rcd. 8622, ¶ 78 (2010), *aff’d*, *Qwest Corp. v. FCC*, 689 F.3d 1214 (10th Cir. 2012).

<sup>10</sup> *Merger Guidelines* § 9.1.

**A. Industry Experts Identify Flaws in the ILEC Economists’ Assertion**

16. The declarations of industry experts identify the key flaws in the ILEC economists’ assertion that fiber deployment implies effective competition in the provision of special access services. To illustrate, Mr. Carey from Sprint and Mr. Kuzmanovski from XO Communications describe many obstacles that a CLEC commonly encounters in attempting to supply special access services to a customer, even after the CLEC has deployed fiber in relatively close proximity to the customer’s location.<sup>11</sup> Mr. Carey and Mr. Kuzmanovski note, for example, that a customer can only connect to a CLEC’s fiber ring at a node or a splice point, which can be situated a considerable distance from the customer’s location even if the customer is located directly on the ring.<sup>12</sup> Mr. Carey and Mr. Kuzmanovski further observe that the cost of constructing this connection can exceed **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** [REDACTED] **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** which amounts to more than **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** [REDACTED] **\*\*\* END HIGHLY CONFIDENTIAL \*\*\***

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<sup>11</sup> Declaration of Ed Carey ¶¶ 7-11, attached as Exhibit A to Opposition to ILEC Direct Cases of Sprint Corporation, WC Docket No. 15-247 (filed Feb. 5, 2016) (“Carey Declaration”); *see also* Draft Declaration of George Kuzmanovski ¶¶ 16-32, appended to Comments of XO Communications, LLC, WC Docket No. 05-25 (filed Jan. 27, 2016) (“Kuzmanovski Declaration”).

<sup>12</sup> *See* Carey Declaration ¶ 8; Kuzmanovski Declaration ¶ 24. In comments filed with the Commission in 2004, AT&T itself acknowledges that “[A] competitor may have fiber on a street, but if the nearest splice point on its facility is down the street at the next intersection, the additional distance . . . may render the investment uneconomical.” Comments of AT&T Corporation at 33-34, WC Docket No. 04-313, CC Docket No. 01-338 (filed Oct. 4, 2004). AT&T also observes that “splice points on competitive networks are typically placed about 2,000 feet apart.” *Id.* at 37.

<sup>13</sup> Carey Declaration ¶ 9; Kuzmanovski Declaration ¶ 25.

17. Additional costs of serving customers located close to an existing fiber ring can include the costs of new electronics, additional fiber, construction permits, rights-of-way fees, and the rent charged to house equipment at a customer's location. In some instances, building owners deny building access to new suppliers of special access services. Such denial can constitute an insurmountable entry barrier.<sup>14</sup>

18. The time required to obtain necessary permits, secure required rights of way, and construct new facilities also can hinder CLECs in their competition with ILECs. ILECs typically enjoy the distinct advantage of ubiquitous network deployment, reflecting their historic privileged position as monopoly suppliers of telecommunications services.

**B. Econometric Analysis Does Not Support the ILEC Economists' Assertion**

19. The ILEC economists' assertion that fiber deployment implies effective competition also receives little support from the findings of Dr. Baker.<sup>15</sup> Dr. Baker has conducted an econometric analysis of the data that the Commission has collected through its Special Access Data Request.<sup>16</sup> Specifically, Dr. Baker has examined the impact of actual and potential competition on the prices charged for special access services. Dr. Baker distinguishes between entities that actually serve customers in a specified location ("in-building providers") and entities that have

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<sup>14</sup> As Mr. Kuzmanovski observes, ILECs often enjoy an important incumbency advantage in this regard. Due to their historic monopoly provision of telecommunications services, the ILECs have developed long-standing relationships with building owners and presently enjoy extensive building access. Kuzmanovski Declaration ¶ 8.

<sup>15</sup> See generally Declaration of Jonathan B. Baker, attached to Letter from Jonathan B. Baker, Senior Consultant, FTI Consulting, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 05-25 (filed Jan. 28, 2016) ("Baker Declaration").

<sup>16</sup> See generally *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*, Order and Data Collection Protective Order, 29 FCC Rcd. 11,657 (2014).

deployed fiber in the proximity of the location (“nearby providers”).<sup>17</sup>

20. In what he identifies as his “primary” regression,<sup>18</sup> Dr. Baker finds that \*\*\* BEGIN

HIGHLY CONFIDENTIAL \*\*\* [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] \*\*\* END HIGHLY

CONFIDENTIAL \*\*\*<sup>19</sup> In contrast, Dr. Baker estimates that \*\*\* BEGIN HIGHLY

CONFIDENTIAL \*\*\* [REDACTED]  
[REDACTED]  
[REDACTED]

\*\*\* END HIGHLY CONFIDENTIAL \*\*\*<sup>20</sup> Dr. Baker concludes that \*\*\* BEGIN HIGHLY

CONFIDENTIAL \*\*\* [REDACTED]  
[REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\*<sup>21</sup>

<sup>17</sup> Dr. Baker states that “A provider is considered nearby if it is not presently providing service to the customer location but has fiber within either the same census block or a census block with a boundary less than 0.5 miles away.” Baker Declaration ¶ 43.

<sup>18</sup> See *id.* ¶ 57, Table 2. The results of this primary regression are reported in column 1 of Table 2 in the Baker Declaration.

<sup>19</sup> *Id.* \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED]  
[REDACTED] \*\*\* END  
HIGHLY CONFIDENTIAL \*\*\*

<sup>20</sup> See *id.* ¶ 63, Table 2. \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED]  
[REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\*

<sup>21</sup> *Id.* Table 3 in the Baker Declaration indicates that \*\*\* BEGIN HIGHLY  
CONFIDENTIAL \*\*\* [REDACTED]  
[REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\* Table 2  
demonstrates that \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED]  
[REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\*

21. The estimated difference in the impact of in-building competition and nearby competition is even more pronounced for certain particular types of special access services. In particular, Dr.

Baker estimates that \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] \*\*\* END HIGHLY

CONFIDENTIAL \*\*\*<sup>22</sup> Similarly, Dr. Baker estimates that \*\*\* BEGIN HIGHLY

CONFIDENTIAL \*\*\* [REDACTED]

[REDACTED]

[REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\*<sup>23</sup> \*\*\* BEGIN

HIGHLY CONFIDENTIAL \*\*\* [REDACTED]

[REDACTED] \*\*\* END HIGHLY

CONFIDENTIAL \*\*\*<sup>24</sup>

22. It should be noted that Dr. Baker’s definition of nearby providers does not distinguish between providers that actually supply special access services to nearby customers and those that simply own nearby fiber. Therefore, the measured impact of nearby providers in Dr. Baker’s

22 \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED]  
[REDACTED]  
[REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\*

23 These conclusions reflect the entries in column 13 in Table 2 in the Baker Declaration. \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\*

24 These conclusions reflect the entries in column 13 in Table 2 in the Baker Declaration. \*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\* [REDACTED] \*\*\* END HIGHLY CONFIDENTIAL \*\*\* Some other columns in Table 2 (e.g., column 12) reflect different patterns.

study reflects the combined influence of actual suppliers and potential suppliers in the relevant census blocks.

23. The price data reported to the Commission have been questioned.<sup>25</sup> Furthermore, as is customary in econometric analyses, Dr. Baker does not report the results of all regression formulations that could conceivably be appropriate. Consequently, Dr. Baker’s findings must be interpreted with care. However, these findings raise significant questions regarding the ILEC economists’ assertion that any CLEC that has deployed fiber nearby can impose strong competitive discipline on an incumbent supplier of special access services. In fact, Dr. Baker’s findings suggest that **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** [REDACTED]

[REDACTED]

[REDACTED] **\*\*\* END**

**HIGHLY CONFIDENTIAL \*\*\***<sup>26</sup>

### C. Observed CLEC Activity Undermines the ILEC Economists’ Assertion

24. The credibility of the ILEC economists’ assertion that fiber deployment implies effective competition is also called into question by their failure to provide a compelling explanation for why so little CLEC fiber is actually employed to serve nearby customers. Drs. Besen and Mitchell report that “in fewer than **\*\*\* BEGIN HIGHLY CONFIDENTIAL \*\*\*** [REDACTED] **\*\*\* END HIGHLY CONFIDENTIAL \*\*\*** of the census blocks in which ... at least one CLEC has fiber does any CLEC actually provide service to a purchaser.”<sup>27</sup> Ms. Gately also cites the

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<sup>25</sup> See, e.g., Declaration of Susan M. Gately ¶ 17, appended to Comments of Ad Hoc Telecommunications Users Committee, WC Docket No. 05-25 (filed Jan. 28, 2016) (“Gately Declaration”).

<sup>26</sup> See Baker Declaration at Table 2.

<sup>27</sup> Besen-Mitchell Declaration ¶ 30.

“striking disparity between the coverage of CLEC fiber routes and the actual locations where CLECs have been able to provide facilities-based connections to their customers.”<sup>28</sup>

25. One wonders why CLECs that allegedly face low incremental costs of serving customers are, in fact, not serving these customers. One possible explanation is that, contrary to the ILEC economists’ assertion, CLECs actually face substantial incremental costs of serving customers even after deploying fiber in nearby locations (for the reasons explained by Mr. Carey and Mr. Kuzmanovski, among others).<sup>29</sup> This explanation implies that the presence of nearby CLEC fiber often is inadequate to impose strong competitive pressure on incumbent suppliers of special access services. It is noteworthy in this regard that when they assess industry conditions, the U.S. Department of Justice and the U.S. Federal Trade Commission “consider the actual history of entry into the relevant market and give substantial weight to this evidence. Lack of successful and effective entry ... tends to suggest that successful entry is slow or difficult.”<sup>30</sup>

#### **IV. IMPLICATIONS FOR FUTURE REGULATORY POLICY**

26. The Commission deserves praise for its decision to undertake the comprehensive data collection required to determine the nature of the regulatory policy that will best serve consumers of special access services. The data the Commission has gathered reveal that the vast majority of census blocks are characterized by monopoly or duopoly supply of special access services. The data also reveal that CLECs own fiber that transits most census blocks where special access services are sold. However, the data do not provide compelling evidence that the mere presence

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<sup>28</sup> Gately Declaration ¶ 12.

<sup>29</sup> Ms. Gately observes that “much of the fiber that has been deployed ... is used for transport (aka middle mile) service – not last mile connections.” *Id.*

<sup>30</sup> *Merger Guidelines* § 9.

of CLEC fiber is sufficient to drive the prices of special access services to competitive levels. Indeed, industry experts explain clearly why CLEC fiber deployment should not be expected to imply effective industry competition.

27. The data the Commission has collected are quite granular, so the Commission is now better able to determine where CLECs have deployed fiber and where they actually serve customers. Combining this information with information on node or splice locations, construction, permitting, and rights-of-way costs, and other relevant location-specific entry barriers should enable the Commission to craft regulatory rules that are both administratively feasible and reasonably attuned to prevailing variation in competitive conditions.<sup>31</sup>

28. It is particularly important to revise the prevailing price cap regulation policy in a timely fashion to reflect industry developments in recent years. A formal assessment of the proper *X* factor has not been undertaken in nearly two decades.<sup>32</sup> This lag in revisiting the *X* factor greatly exceeds the lag that commonly prevails under price cap regulation. Consumers have been harmed by this long lag to the extent that ILECs have been able to readily achieve productivity growth rates in excess of the (relatively low) rate of price inflation in recent years.

29. The data the Commission has collected may help to inform the updating of the *X* factor, the price levels at which to initiate the next phase of price cap regulation, and the appropriate

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<sup>31</sup> Demographic data (*e.g.*, the density of business locations) may also be useful in this regard.

<sup>32</sup> The Commission formally updated the *X* factor in 1997, and then effectively set *X* equal to the economy-wide rate of price inflation in 2000. *See generally Price Cap Performance Review for Local Exchange Carriers*, Fourth Report and Order in CC Docket No. 94-1 and Second Report and Order in CC Docket No. 96-262, 12 FCC Rcd. 16,642 (1997); *Access Charge Reform; Price Cap Performance Review for Local Exchange Carriers; Low-Volume Long-Distance Users; and Federal-State Joint Board on Universal Service*, Sixth Report and Order in CC Docket Nos. 96-262 and 94-1, Report and Order in CC Docket No. 99-249, and Eleventh Report and Order in CC Docket No. 96-45, 15 FCC Rcd. 12,962, ¶¶ 135-137, 183-184 (2000).

number and composition of baskets of price-capped services. Alternatively, or in addition, Automated Reporting Management Information System (“ARMIS”) data might be employed to help ensure a timely updating of the price cap plan. The ILECs have not been required to report ARMIS data to the Commission in recent years. However, the ILECs are required to collect relevant data,<sup>33</sup> so they can now make it available to the Commission in expedient fashion.<sup>34</sup>

## V. CONCLUSIONS

30. My review of the evidence on the record in this proceeding indicates that most census blocks are characterized by monopoly or duopoly supply of special access services. Even though fiber owned by CLECs often transits a census block, CLECs are not employing the fiber to serve customers in most census blocks. The record also provides evidence that refutes the assertion of the ILEC economists that the mere presence of CLEC fiber implies that effective competition prevails in the provision of special access services. The contradictory evidence may explain why the ILEC economists make little attempt to support their assertion.

31. In the absence of evidence that incumbent suppliers of special access services face

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<sup>33</sup> The Commission has required each relevant carrier to “maintain its accounting procedures and data in a manner that will allow it to provide usable information on a timely basis if requested by the Commission.” *Petition of USTelecom for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain Legacy Telecommunications Regulations*, Memorandum Opinion and Order, Report and Order, Further Notice of Proposed Rulemaking, and Second Further Notice of Proposed Rulemaking, 28 FCC Rcd. 7627, ¶ 68 (2013) (quoting *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, ¶ 31 (2008) (“*AT&T Cost Assignment Forbearance Order*)). The Commission did so because it foresaw the potential “need for this accounting information in the future to adjust our existing price cap regime or in our consideration of reforms moving forward.” *Id.* (quoting *AT&T Cost Assignment Forbearance Order* ¶ 19).

<sup>34</sup> Once the key parameters of price cap regulation have been updated to reflect prevailing industry conditions, the Commission might develop additional cost models to inform future re-prescriptions of the X factor.

effective competition, ongoing regulatory oversight of the industry is prudent. The prevailing price cap regulation policy, which has not been thoroughly re-examined in nearly two decades, should be updated to reflect prevailing industry conditions. After this updating has been completed to ensure the timely protection of customers of special access services, the Commission can continue its commendable policy of acquiring the information it needs to structure policies to reflect prevailing industry conditions.

**VERIFICATION**

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge and belief.

Executed on February 18, 2016.

A handwritten signature in black ink, appearing to read 'D. Sappington', written over a horizontal line.

David Sappington

**Attachment A. Curriculum Vitae of Professor David Sappington**

**REDACTED – FOR PUBLIC INSPECTION**

**DAVID E. M. SAPPINGTON**

Department of Economics, P.O. Box 117140  
University of Florida, Gainesville, Florida 32611-7140  
Telephone: (352) 392-3904 E-Mail: SAPPING@UFL.EDU

**EDUCATION:**

1980	Ph.D.	Economics, Princeton University.
1978	M.A.	Economics, Princeton University.
1976	B.A.	Economics, Haverford College.

**PROFESSIONAL EXPERIENCE:**

1991 – Present	Eminent Scholar, Department of Economics, University of Florida.
2001 – 2002	Chief Economist, Federal Communications Commission.
1989 – 1990	Matherly Professor of Economics, Department of Economics, University of Florida.
1989 – 1990	District Manager, Economics Research Group, Bell Communications Research.
1988 – 1989	Visiting Lecturer with Title of Full Professor, Department of Economics, Princeton University.
1984 – 1989	Member of Technical Staff, Economics Research Group, Bell Communications Research.
1982 – 1986	Assistant Professor, Department of Economics, University of Pennsylvania.
1980 – 1982	Assistant Professor, Department of Economics and Institute of Public Policy Studies, University of Michigan.

**ADDITIONAL POSITIONS:**

1999 – Present	Director, Robert F. Lanzillotti Public Policy Research Center, University of Florida.
1989 – Present	Senior Research Associate, Public Utility Research Center, University of Florida.
2009 – Present	Member of Board of Directors, Industrial Organization Society.
2008 – 2009	President, Industrial Organization Society.
2006 – 2007	Vice President, Industrial Organization Society.
1993 – 1998	Associate Director, Public Policy Research Center, University of Florida.

**SERVICE ON EDITORIAL BOARDS:**

2009 – Present	<i>The Review of Industrial Organization</i>	(Board of Editors).
1997 – Present	<i>The Rand Journal of Economics</i>	(Associate Editor).
1995 – Present	<i>The Journal of Regulatory Economics</i>	(Associate Editor).
1993 – Present	<i>Journal of Economics and Management Strategy</i>	(Co-Editor).
1992 – Present	<i>Information Economics and Policy</i>	(Board of Editors).
2009 – 2015	<i>The Review of Network Economics</i>	(Board of Editors).
1983 – 2012	<i>Economics Letters</i>	(Advisory Editor).
2001 – 2006	<i>Journal of Public Policy and Marketing</i>	(Board of Editors).
1996 – 1999	<i>The American Economic Review</i>	(Board of Editors).
1991 – 1994	<i>The Journal of Industrial Economics</i>	(Associate Editor).
1991 – 1994	<i>The Journal of Regulatory Economics</i>	(Board of Editors).
1988 – 1992	<i>The American Economic Review</i>	(Board of Editors).

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*Designing Incentive Regulation for the Telecommunications Industry.* Cambridge, MA: The MIT Press, 1996 (with D. Weisman).

*Information Economics: Critical Concepts in Economics. Volumes I – IV.* New York, NY: Routledge, 2014 (co-edited with M. Baye).

**BOOK REVIEWS:**

“Review of Berg and Tschirhart's *Natural Monopoly Regulation*,” *Managerial and Decision Economics*, Vol. 11(1), February 1990, pp. 70-71.

“Review of Laffont and Tirole's *A Theory of Incentives in Procurement and Regulation*,” *Journal of Economic Literature*, Vol. 32(2), June 1994, pp. 720-721.

“Review of Vogelsang and Mitchell's *Telecommunications Competition: The Last Ten Miles*,” *Information Economics and Policy*, Vol. 9(4), December 1997, pp. 354-357.

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“Review of Sclar's *You Don't Always Get What You Pay For: The Economics of Privatization*,” *Journal of Economic Literature*, Vol. 39(2), June 2001, pp. 601-603.

“Review of De Bijl and Peitz's *Regulation and Entry into Telecommunications Markets*,” *Journal of Economic Literature*, Vol. 42(2), June 2004, pp. 538-539.

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“Consumer Shopping Behavior in The Retail Coffee Market: A Comment,” in *Proceedings of the Federal Trade Commission's Conference on Empirical Approaches to Consumer Protection Economics*, edited by P. Ippolito and D. Scheffman, 1986, pp. 445-446.

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“Introduction,” to *Information Economics: Critical Concepts in Economics. Volumes I – IV*. New York, NY: Routledge, 2014 (with M. Baye).

“Economic Theory of Regulation,” in *The International Encyclopedia of the Social and Behavioral Sciences* (2<sup>nd</sup> Edition), edited by J. Wright. Oxford: Elsevier Ltd., 2015.

**HONORS AND AWARDS:**

- |             |   |
|-------------|---|
| 2015        | Distinguished Member Award<br>Transportation and Public Utilities Group.              |
| 2015        | Faculty Honoree, Anderson Scholars Program<br>University of Florida.                  |
| 2011 – 2014 | Research Foundation Professorship, University of Florida.                             |
| 2003        | Distinguished Service Award, Public Utility Research Center<br>University of Florida. |
| 2000        | Faculty Honoree, Anderson Scholars Program<br>University of Florida.                  |
| 1998        | Professorial Excellence Program Award, University of Florida.                         |
| 1997 – 2000 | Research Foundation Professorship, University of Florida.                             |
| 1992        | Research Achievement Award, University of Florida.                                    |
| 1976        | Inducted into the Phi Beta Kappa Society.   |

**REFEREE/REVIEWER FOR:**

Accounting Review	Journal of Economic Behavior and Organization
Addison Wesley, Publishers	Journal of Economic Dynamics and Control
American Economic Journals:	Journal of Economic Literature
Economic Policy, Microeconomics	Journal of Economic Theory
American Economic Review	Journal of Economics and Business
American Law and Economics Review	Journal of Economics and Management Strategy
American Enterprise Institute	Journal of Environmental Economics and Management
Bell Journal of Economics	Journal of Health Economics
Berkeley Electronic Press Journal of Economic Analysis and Policy	Journal of Industrial Economics
Bulletin of Economic Research	Journal of International Economics
Cambridge University Press	Journal of Law and Economics
China Economic Review	Journal of Law, Economics and Organization
Danish Social Science Research Council	Journal of Marketing Research
Economic Journal	Journal of Policy Analysis and Management
Econometrica	Journal of Political Economy
Economic and Social Research Council	Journal of Public Economics
Economic Design	Journal of Public Policy and Marketing
Economic Inquiry	Journal of Regulatory Economics
Economics Letters	Management Science
Economic Theory	Managerial and Decision Economics
Energy Economics	Marketing Science
Energy Journal	MIT Press
Encyclopedia of Law and Economics	National Science Foundation
European Economic Review	Nonlinear Dynamics and Systems Theory
European Journal of Operational Research	Oxford Economic Papers
Games and Economic Behavior	Oxford University Press
Harcourt Brace, Publishers	Princeton University Press
International Economic Review	Quarterly Journal of Economics
Information Economics and Policy	Quarterly Review of Economics and Business
International Journal of Industrial Organization	Rand Journal of Economics
International Journal of the Economics of Business	Research Grants Council of Hong Kong
International Review of Law and Economics	Research in Labor Economics
Israel Science Foundation	Review of Economic Studies
Johns Hopkins University Press	Review of Economics and Statistics
John Wiley, Publishers	Review of Industrial Organization
Journal of Accounting Research	Review of Network Economics
Journal of the American Statistical Association	Sloan Foundation
Journal of Business	Southern Economic Journal
Journal of Competition Law & Economics	Telecommunications Policy
Journal of Corporate Finance	Utilities Policy
	World Bank Economic Review

**SELECTED ADDITIONAL EXPERIENCE:**

- 1997 – Present      Instructor in *The International Training Program on Utility Regulation and Strategy*, sponsored by The World Bank and the University of Florida's Public Utility Research Center.
- 2015 – Present      Advisor to Sprint Corporation on  
The Design of Regulatory Policy for Special Access Services.
- 2014 – 2015        Advisor and Expert Witness for Norfolk Southern Corporation on  
The Design of Regulatory Policy in the Railroad Industry.
- 2014 – 2015        Advisor and Expert Witness for DISH Network on  
The Design of Competition Policy in Broadband and Media Markets.
- 2014 – 2015        Advisor to EPCOR Utilities Incorporated on  
The Design of Performance Based Regulation in the Energy Sector.
- 2014                Advisor to COFETEL, Mexico's Telecommunications Regulator on  
Price Cap Regulation in Mexico's Telecommunications Industry.
- 2013 – 2014        Advisor and Expert Witness for the Alliance of Automobile Manufacturers  
On the Design of Legislation Affecting the Automobile Industry.
- 2013                Advisor to AT&T on  
The Design of Spectrum Auctions.
- 2013                Advisor to Telefonica on  
The Design of Price Cap Regulation in Peru.
- 2013                Advisor to the National Grid Service Company on  
The Design of Service Quality Standards in the Electricity Sector.
- 2011                Advisor to Leap Wireless International on  
Competition Policy in the Wireless Communications Industry.
- 2011                Advisor to Telstra Corporation, Ltd. on the Design of  
Access Pricing Policy in Australia's Telecommunications Industry.
- 2010                Advisor to COFETEL on  
Competition Policy in Mexico's Communications Industry.
- 2010                Advisor to the U.S. Federal Communications Commission on  
Incentive Regulation and Broadband Deployment.

**SELECTED ADDITIONAL EXPERIENCE (CONTINUED):**

- 2009                    Advisor to the OECD on  
Competition Policy in Mexico’s Communications Industry.
- 2009                    Advisor to Afiliats on the Design of Policy to  
Assign Internet Names and Addresses.
- 2008 – 2009            Advisor and Expert Witness for AT&T on the  
Design of Competition Policy in the U.S. Telecommunications Industry.
- 2008                    Member of Advisory Committee to the “Electronic Health Information  
Exchange Project,” sponsored by the National Governors Association.
- 2008                    Advisor to United States Cellular Corporation on the  
Design of Telecommunications Universal Service Policy.
- 2007 – 2008            Advisor to United Parcel Service on the  
Design of Regulatory Policy in the Postal Industry.
- 2006 – 2007            Advisor to Earthlink, Inc. on the Design of  
Telecommunications and Internet Competition Policy.
- 2006 – 2007            Advisor to Telstra Corporation, Ltd. on the Design of  
Competition Policy in Australia’s Telecommunications Industry.
- 2005 – 2006            Advisor to General Communication, Inc. on the  
Design of Telecommunications Competition Policy.
- 2005                    Advisor to United Parcel Service on  
Competition Policy in the U.S. Postal Industry.
- 2004 – 2005            Advisor to the Antitrust Division of the U.S. Department of Justice on  
Competition Policy in the Telecommunications Industry.
- 2004                    Advisor to OSIPTEL, Peru’s Telecommunications Regulatory Agency, on  
the Design of Price Cap Regulation
- 2003 – 2004            Advisor to SBC, Inc. on the Design of Performance Measurement Systems  
in the U.S. Telecommunications Industry.
- 2003                    Presented Invited Testimony to the  
President’s Commission on the United States Postal Service.

**SELECTED ADDITIONAL EXPERIENCE (CONTINUED):**

- 2003                      Advisor to General Communication, Inc. on the Design of Universal Service and Competition Policy.
- 2001                      Advisor to CONATEL, Ecuador’s Central Regulatory Body on the Design of Telecommunications Policy.
- 2000 – 2001              Advisor to Ameren UE on the Design of Incentive Regulation for Electric Utilities.
- 1999 – 2000              Advisor to the Antitrust Division of the U. S. Department of Justice on a Proposed Merger in the Communications Industry.
- 1998 – 2000              Consultant and Expert Witness for United Parcel Service on Postal Industry Pricing.
- 1998 – 2000              Advisor to the World Bank on Telecommunications Privatization in Africa.
- 1996                      Consultant and Expert Witness for TELUS Communications, Inc. on the Design of Price Cap Regulation.
- 1995                      Advisor and Expert Witness for GTE-California on Incentive Regulation and Telecommunications Competition Policy.
- 1992 – 1994              Advisor to the Southern Bell Telephone Company on the Design of Incentive Regulation.
- 1992                      Advisor to the New York State Public Service Commission on Incentive Regulation in the Electric Power Industry.