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would prevent incumbent LECs from using such NRCs and early termination penalties as a means to prevent customers from purchasing services from alternative wholesale providers.¹⁰³

Third, the Commission should require that incumbent LECs offer, throughout their territories and across their DS1 and DS3 service offerings, any purchase arrangement that they offer for any DS1 or DS3 special access service in any part of their service area.¹⁰⁴ As Drs. Besen and Mitchell discuss, incumbent LECs' exclusionary purchase arrangements—especially AT&T's—vary widely among their legacy BOC territories,¹⁰⁵ but incumbent LECs have provided no explanation for why this is the case. Presumably, many of the costs associated with providing special access services in each of these territories are very similar. The Commission should permit an incumbent LEC to limit the availability of a DS1 or DS3 purchase arrangement to a subpart of its incumbent territory only if the incumbent LEC can affirmatively demonstrate that it would be unreasonable to require the incumbent LEC to offer the purchase arrangement across its entire incumbent LEC territory (e.g., by demonstrating that the incumbent LEC's costs in different areas justify limiting the availability of a purchase arrangement to a discrete subpart of its incumbent LEC territory).

Finally, it bears repeating that the Commission need not and should not wait until it has concluded its data collection and market analysis to adopt these proposals. As the Joint Commenters have explained, it is already clear that incumbent LECs possess overwhelming

¹⁰³ See *Besen and Mitchell Paper* ¶¶ 55-66.

¹⁰⁴ If the Commission were to adopt this proposal, an incumbent LEC would still be permitted to offer different tariffed rates in different geographic areas for DS1 and DS3 services. However, an incumbent LEC would be required to offer consistent discounts and other benefits throughout its incumbent LEC territory unless the incumbent LEC could affirmatively demonstrate that it would be unreasonable to require it to do so.

¹⁰⁵ See *id.* ¶ 69 & nn.29, 32.

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market shares in the facilities-based provision of DS1 and DS3 special access services, which are the services subject to the exclusionary purchase arrangements discussed herein. In addition, the incumbent LECs' high market shares in the provision of these services are extremely durable because of the high entry barriers faced by competitors. Nor can there be any doubt that incumbent LECs exploit their power in these markets to induce competitors to enter into exclusionary purchase arrangements that contain anticompetitive terms and conditions. Once the Commission has adopted rules like the ones proposed herein, the benefits of such a framework, such as an increased level of entry by alternative wholesale providers, will likely take years to develop. It is critical that the Commission act now so that this long and important process can begin.

III. THE COMMISSION SHOULD UTILIZE A RELIABLE AND ADMINISTRABLE MEANS OF ASSESSING THE LEVEL OF ACTUAL AND POTENTIAL COMPETITION IN RELEVANT SPECIAL ACCESS MARKETS.

While the Commission must address the anticompetitive loyalty and tying provisions in incumbent LEC exclusionary purchase arrangements as soon as possible, it must also address the incumbent LECs' unreasonably high monthly recurring charges for DS1 and DS3 special access services as well as the unreasonably high prices that some incumbent LECs charge for Ethernet and other packet-mode wholesale special access services. The Joint Commenters applaud the Commission's decision to undertake a comprehensive and data-intensive analysis of these prices.

In the *Further NPRM*, the Commission states that it will consider the extent to which incumbent LECs face both actual and potential competition in the provision of special access services.¹⁰⁶ It plans to do so by utilizing the traditional market power framework as well as panel regression analysis. The Commission recognizes that, in applying these analytical frameworks, it

¹⁰⁶ See *Further NPRM* ¶ 72.

must balance the goal of utilizing reliable techniques for measuring incumbent LEC market power with the goal of ensuring that the analysis is administratively feasible.¹⁰⁷

The market power framework and panel regressions are two different means of identifying relevant markets in which a firm has market power. They are essentially redundant. Rather than utilizing both of these mechanisms, it would be more sensible for the Commission to use either the market power framework or panel regressions.

Regardless of which approach it selects, the Commission should focus on assessing the level of actual competition in the provision of special access services. To do this, the Commission will need to follow sound methodologies for defining relevant product and geographic markets, identifying market participants, and accounting for the specific issues implicated by measuring actual competition using either the market power framework or panel regressions.

In addition, the Commission should conclude that there is no reliable basis for predicting that significant entry will occur in any relevant special access market in which incumbent LECs have market power. Application of either the market power framework or panel regressions would yield this conclusion.

A. The Commission Should Utilize Reliable and Administrable Means of Assessing the Level of Actual Competition in the Provision of Special Access Services.

In order to follow a sound methodology for defining relevant product and geographic markets and identifying market participants the Commission should adhere to certain basic principles regardless of whether it applies the market power framework or utilizes panel regression analysis. At the same time, measuring the level of actual competition in relevant

¹⁰⁷ See *id.* ¶ 77.

markets requires that the Commission address different issues depending on whether it applies the market power framework or utilizes panel regression analysis. All of these issues are discussed below.

1. Defining Relevant Product Markets

In order to define relevant product markets, the Commission determines the range of products that qualify as substitutes. Under the market power framework, the Commission would apply the “hypothetical monopolist” test to determine the range of products that, if offered by a hypothetical monopolist, would enable the monopolist, not subject to price regulation, to impose (or in the case of special access, sustain) a small but significant and non-transitory increase in price (“SSNIP”) above the price levels that a competitive market would yield.¹⁰⁸ If applying panel regressions, the Commission would essentially run different regressions to determine the extent to which the availability of competing service offerings affects incumbent LEC prices. Services that do affect incumbent LEC prices would be included in the relevant product market.

As the Commission explained in the *Phoenix Order*, the fact that *some* customers may view a product as a substitute for another product does not, by itself, mean that the products belong in the same product market.¹⁰⁹ That is because a dominant firm can usually profit from a price increase even if it loses *some* sales to a product that *some* customers view as a substitute.

¹⁰⁸ See U.S. Department of Justice and the Federal Trade Commission, “Horizontal Merger Guidelines,” § 4.1.1 (revised Aug. 19, 2010) (“*Merger Guidelines*”); see also *Phoenix Order* ¶ 56 (discussing hypothetical monopolist test).

¹⁰⁹ See *id.* n.179; see also Cavalier Telephone, LLC Opposition to Qwest Petition for Forbearance, WC Docket No. 09-135, Declaration of Dr. Michael D. Pelcovits, at 8 (filed Sept. 21, 2009) (“Pelcovits Declaration”) (“The existence of some substitutability does not obviate the need to investigate whether a real-world firm (let alone a hypothetical monopolist used in the SSNIP test of market definition) can exercise market power. If it was this simple, then there would be no need for the comprehensive and sophisticated analyses routinely performed by the antitrust agencies in merger reviews or other investigations of monopolization.”).

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The key question is whether *enough* customers would switch to a competitor’s service in response to a price increase by the incumbent LEC to render price increase unprofitable.¹¹⁰ If so, the competitor’s service offering belongs in the same product market as the incumbent LEC’s special access service. This essential principle applies regardless of whether the Commission utilizes the hypothetical monopolist test or panel regressions to establish substitutability.

a. Excluding “Best Efforts” Internet Access Services

Consistent with precedent, the Commission should consider “best efforts” broadband Internet access services and dedicated special access services as belonging to different product markets. In the *AT&T/BellSouth Merger Order*, for example, the Commission explained that “enterprise customers frequently purchase high-capacity transmission services, including Frame Relay, Asynchronous Transfer Mode (ATM), Gigabit Ethernet, and similar services provided via emerging technologies.”¹¹¹ The Commission found that, to the extent that cable companies provide services that are competitive with these special access services, they do so using fiber facilities (as opposed to the hybrid fiber coaxial (“HFC”) facilities used to provide “best efforts” cable modem services).¹¹² The Commission therefore performed a separate analysis of competition in the market for “mass market high-speed Internet access services,” such as cable

¹¹⁰ See *Phoenix Order* n.167 (citing Pelcovits Declaration at 10) (“[T]he key empirical test is *how much switching* between [product A and product B] is due to changes in the relative prices (*i.e.*, cross-elasticity of demand).” (emphasis in original)). It is also worth noting that, even if most customers would switch to another service in response to a price increase, a firm can still exercise market power *vis a vis* those customer who would not switch if the firm can engage in price discrimination.

¹¹¹ *In the Matter of AT&T Inc. and BellSouth Corp. Application for Transfer of Control*, Memorandum Opinion and Order, 22 FCC Rcd. 5662, ¶ 63 (2007) (“*AT&T-BellSouth Merger Order*”) (internal citation omitted).

¹¹² See *id.* n.92.

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modem services,¹¹³ and competition in the market for enterprise special access services.¹¹⁴

Similarly, in the *Phoenix Order*, the Commission analyzed competition in the provision of “best efforts” broadband Internet access and other services sold to mass market customers¹¹⁵ separately from competition in the provision of “high-capacity transmission services” (e.g., DS1 and DS3 services) and other services sold to enterprise customers.¹¹⁶

There is no reason for the Commission to depart from that precedent here. The available evidence overwhelmingly demonstrates that “best efforts” broadband Internet access services are not in the same product markets as dedicated special access services. Stated differently, there is ample evidence to show that business customers (as well as their service providers) do not view “best efforts” broadband Internet access services as substitutes for dedicated special access services.¹¹⁷ For numerous reasons, it is unlikely that enough purchasers of dedicated special access services would switch to “best efforts” broadband Internet access services in response to a small but significant (e.g., five percent)¹¹⁸ increase in the price of their special access services to make such an increase unprofitable.

¹¹³ See *id.* ¶¶ 113-20.

¹¹⁴ See *AT&T-BellSouth Merger Order* ¶¶ 62-87.

¹¹⁵ See *Phoenix Order* ¶¶ 51-53.

¹¹⁶ See *id.* ¶ 62.

¹¹⁷ See, e.g., Declaration of Kevin F. Brand on behalf of EarthLink, Inc. ¶ 9 (dated Feb. 8, 2013) (attached hereto as “Appendix D”) (“*Brand Declaration*”) (“In light of the demands of business customers that purchase special access services . . . and the differences between special access services and “best efforts” Internet access services, I do not believe that the vast majority of businesses currently purchasing special access services view “best efforts” Internet access services as a viable substitute.”).

¹¹⁸ See *Merger Guidelines* § 4.1.2.

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First, most business customers purchasing special access services demand guaranteed bandwidth,¹¹⁹ and special access services are marketed specifically to meet this need.¹²⁰ But “best efforts” services, as the name implies, do not provide guaranteed bandwidth. As the record demonstrates, “best efforts” broadband Internet access services provided over cable companies’ HFC networks rely on a shared network architecture that makes it difficult, if not impossible, to deliver guaranteed bandwidth.¹²¹

The “best efforts” services offered over incumbent LECs’ networks cannot provide the guaranteed speeds that most special access customers demand either. For instance, Verizon’s FiOS networks utilize a Passive Optical Network (“PON”) or point-to-multipoint architecture in which bandwidth is shared among subscriber locations.¹²² Accordingly, as with cable modem

¹¹⁹ See *Brand Declaration* ¶ 4.

¹²⁰ See, e.g., EarthLink Business, “Internet,” available at <http://www.earthlinkbusiness.com/products/internet.xea> (last visited Feb. 11, 2013) (highlighting that EarthLink Business’ T1, T3, and Ethernet services provide “[g]uaranteed bandwidth, giving you the confidence to run the applications that you need”); MegaPath, Broadband Comparison, available at http://www.megapath.com/megapath/assets/File/PDF/ProductSheets/MegaPath_BroadbandComparison.pdf (marketing MegaPath’s T1, DS3, and Business Ethernet services as best suited for businesses that “require mission-critical reliability”).

¹²¹ See, e.g., Letter from Joshua M. Bobeck, Counsel for PAETEC Holding Corp., and Thomas Cohen, Counsel for XO Communications LLC, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 05-25, at 24-25 & n.87 (filed May 28, 2010) (discussing and citing record evidence that “HFC networks are not capable of providing the features demanded by special access customers such as guaranteed bandwidth”); Workshop Response of tw telecom, One Communications, Cbeyond and Integra, WC Docket No. 05-25, at 5-7 (filed Sept. 15, 2009); see also Reply Comments of Cbeyond, Integra, One Communications, and tw telecom, WC Docket Nos. 06-172 & 07-97, at 11-12 (filed Oct. 21, 2009).

¹²² See, e.g., Brian Santo, “Verizon open to 10G PON bids in 2011,” *CED Magazine*, (June 23, 2010), available at <http://www.cedmagazine.com/news/2010/06/verizon-open-to-10g-pon-bids-in-2011> (last visited Feb. 11, 2013) (stating that Verizon’s FiOS system is based on a PON architecture); The Fiber Optic Association, “Fiber to the Home Architectures,” available at <http://www.thefoa.org/tech/ref/appln/FTTHarch.html> (last visited Feb. 11, 2013) (describing the

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services, subscribers can experience slower download speeds at peak usage times.¹²³ Nor can “best efforts” services provided via DSL technology deliver the guaranteed bandwidth demanded by most purchasers of special access services. As incumbent LECs explain to prospective purchasers of their business ADSL services, speeds vary based on a number of factors, including the distance between the customer’s location and the central office.¹²⁴

Second, the vast majority of “best efforts” broadband Internet access services do not provide the symmetrical bandwidth demanded by most businesses that purchase special access

PON architecture); Multicom Products, “Three Fundamental Architectures for FTTH,” *available at* http://www.multicominc.com/stimulus/FTTH_architectures.htm (last visited Feb. 11, 2013) (same).

¹²³ *See* Multicom Products, “Three Fundamental Architectures for FTTH,” *available at* http://www.multicominc.com/stimulus/FTTH_architectures.htm (last visited Feb. 11, 2013) (“Also, because the bandwidth in a PON is not dedicated to individual subscribers, data transmission speed may slow down during peak usage times in an effect known as latency.”); Verizon, “FiOS Internet,” *available at* <https://www2.verizon.com/support/residential/internet/fiosinternet/general+support/getting+started/questionone/85270.htm> (last visited Feb. 11, 2013) (“Although we build our network with very fast connections, your Internet traffic shares the same paths as traffic from other subscribers. At times, the amount of traffic generated by other subscribers may impact the throughput performance of your FiOS service.”); Verizon, “Verizon FiOS Internet for Business Maximum Connection Speed,” *available at* https://www2.verizon.com/foryoursmallbiz/Unprotected/Common/HTML/BroadBand/BFIOS/BB_ConnectionSpeeds.htm (last visited Feb. 11, 2013) (“Speed and uninterrupted use of the service are not guaranteed.”).

¹²⁴ *See, e.g.*, AT&T, “AT&T DSL High Speed – Are High Speed Internet speeds guaranteed?” *available at* <http://www.att.com/esupport/article.jsp?sid=KB400186&cv=801&title=Are%20High%20Speed%20Internet%20speeds%20guaranteed%3F#fbid=6lyuBPW-tCq> (last visited Feb. 11, 2013) (“The speed range of your High Speed Internet service is based on the distance between your home/office and the DSL-equipped Central Office or Gateway, as well as the condition of your line. . . . There’s no guarantee that you will achieve the maximum speed in the range.”); Verizon, “For Your Business, DSL Prices and Packages,” *available at* http://www2.verizon.com/foryourbusiness/dslinternetservices/internetaccess/sub_products/dslprices_e.asp (last visited Feb. 11, 2013) (“There are a number of factors that influence speed. . . . [T]he actual connection and throughput speeds of the service are not guaranteed.”).

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services.¹²⁵ For instance, all of Cox Business’s “best efforts” “Business Internet Packages” provide asymmetrical bandwidth¹²⁶ while its fiber-based “Optical Internet” services provide “dedicated, symmetrical access” so that “[businesses] always get the same upload and download capacity across [their] Internet access connection.”¹²⁷ Similarly, MegaPath markets its T1 and “Business Ethernet” services as best suited for businesses that need “symmetrical upload and download speeds” and its DSL service as best suited for “[b]usinesses that need affordable service with fast download speeds, but don’t require fast upload speeds.”¹²⁸

Third, the vast majority of “best efforts” Internet access services do not provide the level of reliability demanded by most purchasers of special access services.¹²⁹ For instance, business customers expect their special access services to be repaired within a few hours (e.g., 4 to 6 hours) of an outage, and the Service Level Agreements (“SLAs”) offered by providers of special

¹²⁵ See *Brand Declaration* ¶ 5.

¹²⁶ See Cox Business, “Data & Internet Pricing & Plans serving Northern Virginia,” available at <http://ww2.cox.com/business/northernvirginia/data/pricing.cox> (last visited Feb. 11, 2013).

¹²⁷ See Cox Business, “Cox Optical Internet,” available at <http://ww2.cox.com/business/northernvirginia/data/optical-internet.cox> (last visited Feb. 11, 2013).

¹²⁸ See MegaPath, “Broadband Comparison,” available at http://www.megapath.com/megapath/assets/File/PDF/ProductSheets/MegaPath_BroadbandComparison.pdf; see also XO Communications, “T1/DS1 Services,” available at <http://www.xo.com/services/network/dia/Pages/T1.aspx> (last visited Feb. 11, 2013) (“And because XO offers symmetrical bandwidth, you can enjoy the same speeds when you’re uploading files as when you’re downloading them—even if you’re doing both simultaneously. Don’t try that on a cable or DSL connection!”).

¹²⁹ See *Brand Declaration* ¶ 6.

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access services are designed accordingly.¹³⁰ By contrast, the SLAs—if any—offered with “best efforts” Internet access services typically provide that service will be restored within a longer timeframe (e.g., 24 hours).¹³¹

Fourth, some “best efforts” Internet access services do not provide the level of security demanded by most businesses that purchase special access services.¹³² For example, the dedicated connections provided by DS1, DS3, and Ethernet special access services are inherently more secure than the shared connections provided by “best efforts” cable modem services.¹³³

Finally, there are substantial price differences between “best efforts” broadband Internet access services and dedicated special access services. For example, competitive LECs frequently offer T1/DS1 special access services to businesses at monthly prices that are approximately three to four times higher than the prices of their “best efforts” DSL services.¹³⁴ Similarly, Verizon

¹³⁰ See, e.g., *id.* (explaining that EarthLink’s SLAs “for dedicated special access services provide that EarthLink’s ‘Mean Time to Repair’ (‘MTTR’) will be between 4 to 6 hours depending on the type of service”).

¹³¹ See, e.g., *id.*; AT&T, “AT&T High Speed Internet Business Edition Service Level Agreement,” available at <http://www.att.com/gen/general?pid=6622> (last visited Feb. 11, 2013) (providing that AT&T’s U-verse and DSL “High Speed Internet Business Edition” services will be restored within 24 hours).

¹³² See *Brand Declaration* ¶ 7.

¹³³ See, e.g., *TRRO* ¶ 193 (acknowledging the security limitations associated with cable modem service); Reply Declaration of Dennis W. Carlton *et al.*, ¶ 24 (dated Feb. 24, 2010) (attached as Exhibit A to Reply Comments of AT&T Inc., WC Docket No. 05-25 (filed Feb. 24, 2010)) (noting that there are “security concerns when many different customers are sharing network capacity”); XO Communications, “T1/DS1 Services,” available at <http://www.xo.com/services/network/dia/Pages/T1.aspx> (last visited Feb. 11, 2013) (“Unlike DSL or cable connections that are shared among a number of users, a business T1 line is a private, direct line between your business and the Internet”).

¹³⁴ See, e.g., EarthLink Business, “Business DSL,” available at <http://www.earthlinkbusiness.com/DSL/> (last visited Feb. 11, 2013) (offering “Standard DSL” service (up to 6.0 Mbps/768 Kbps) starting at \$67 per month and standalone ADSL service (up

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offers DS1 special access services at monthly prices that can be approximately five to six times those it offers for “best efforts” business DSL services.¹³⁵ And AT&T offers its DS1 special access services at monthly prices that can be approximately seven to eight times its prices for 1.5 Mbps/1 Mbps “best efforts” U-verse Internet access service for businesses.¹³⁶ Moreover, the monthly prices offered for DS1 special access services are substantially higher than those offered for “best efforts” cable modem services.¹³⁷ As the FCC recognized nearly a decade ago,

to 7 Mbps/768 Kbps) starting at \$97 per month); EarthLink Business, “Business T1,” *available at* <http://www.earthlinkbusiness.com/T1/> (last visited Feb. 11, 2013) (offering “Business T1” service as low as \$289 per month); MegaPath, “Business DSL Services,” *available at* <http://www.megapath.com/data/dsl/> (last visited Feb. 11, 2013) (offering “Lineshare ADSL Internet” (up to 6 Mbps/768 Kbps) starting at \$45 per month and standalone ADSL service (ranging from up to 1.5 Mbps/384 Kbps to up to 20 Mbps/1 Mbps) starting at \$59 per month); MegaPath, “Bonded T1 & Full T1 Services,” *available at* <http://www.megapath.com/data/t1> (last visited Feb. 11, 2013) (offering “Full T1” service starting at \$299 per month and “Bonded T1” service (speeds of 3, 4.5, 6, 7.5, 9, 10.5, and 12 Mbps) starting at \$554 per month).

¹³⁵ See Verizon Business, “Small Business High Speed Internet, Broadband (DSL) Internet” *available at* <http://smallbusiness.verizon.com/products/internet/hsi/packages.aspx> (last visited Feb. 11, 2013) (offering “High Speed Internet (DSL)” service (up to 3 Mbps/768 Kbps) in Washington, DC at \$47.99 per month); Verizon Telephone Companies Tariff F.C.C. No. 1 § 14.7 (indicating that Verizon has received Phase II pricing flexibility for channel terminations in the Washington DC MSA); *id.* § 7.5.9(A)(1)(a) (indicating that, in areas subject to Phase II pricing flexibility, Verizon’s monthly rate for a DS1 channel termination is \$239.17, \$300.56, or \$310.64, depending on the wire center of the particular location served.)

¹³⁶ See AT&T, “AT&T U-verse High Speed Internet – Business Edition,” *available at* <http://www.att.com/smallbusiness/common/productDetails.jsp?skuId=sku341730> (last visited Feb. 11, 2013) (offering “U-verse High Speed Internet – Business Edition” (up to 1.5 Mbps/1 Mbps) in Little Rock, Arkansas starting at \$30/month); Southwestern Bell Telephone Company Tariff F.C.C. No. 73 § 39.2(A) (indicating that AT&T has received Phase II pricing flexibility for channel terminations in the Little Rock, Arkansas MSA); *id.* § 39.5.2.7.1(A) (indicating that, in areas subject to pricing flexibility, AT&T’s monthly rate for a DS1 channel termination in Arkansas is \$215.00, \$225.00, or \$240.00, depending on the wire center of the particular location served.).

¹³⁷ See, e.g., Comcast, “Business Internet Plans: Plans & Pricing,” *available at* <http://business.comcast.com/smb/services/internet/plans-c> (last visited Feb. 11, 2013) (offering “Comcast Business Class Internet” (up to 16 Mbps/3 Mbps) at \$69.95 per month); Cox Communications, “Data & Internet Pricing & Plans Serving Northern Virginia,” *available at*

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providers of DS1 special access services could not offer these rates and retain their customer bases if enough customers viewed “best efforts” broadband Internet access services as a viable substitute.¹³⁸

Furthermore, there are also stark differences between the prices of “best efforts” Internet access services and low-capacity Ethernet special access services marketed to businesses. For instance, MegaPath offers business DSL service (up to 6 Mbps/768 Kbps) starting at \$45 per month¹³⁹ while it offers low-capacity business Ethernet services for hundreds of dollars per month (e.g., 2 Mbps x 2 Mbps service for \$199 per month, 3 Mbps x 3 Mbps service for \$299 per month, and 5 Mbps x 5 Mbps service for \$499 per month).¹⁴⁰ Although most Ethernet services providers do not advertise their prices online, the pricing data submitted in response to the mandatory special access data request¹⁴¹ will undoubtedly support a finding that the prices of “best efforts” broadband Internet access services and dedicated special access services marketed to businesses differ substantially. For all of these reasons, best efforts services do not belong in the same product market as special access services.

<http://ww2.cox.com/business/northernvirginia/data/pricing.cox> (last visited Feb. 11, 2013) (offering “Cox Business Internet” (15 Mbps/5 Mbps) at \$59.99 per month).

¹³⁸ See *TRRO* ¶ 193 (“Commenters also note that businesses that do require DS1 loops are willing to pay significantly more for them than the cost of a cable modem connection, which also indicates that the two are not interchangeable.”).

¹³⁹ See *supra* note 134.

¹⁴⁰ MegaPath, “MegaPath Business Ethernet Connection,” *available at* <http://www.megapath.com/data/ethernet/> (last visited Feb. 11, 2013).

¹⁴¹ See *Data Request Order*, Appendix A, § II.A.12 (requesting pricing information for competitive providers’ dedicated special access services, including Ethernet services); *id.*, Appendix A, § II.B.4 (requesting pricing information for incumbent LECs’ dedicated special access services, including Ethernet services); *id.*, Appendix A, § II.C.2.d. (requesting pricing information for “best efforts” broadband Internet access services).

b. Using Circuit Capacities to Delineate Markets

In order to simplify the definition of product markets, the Commission should consider defining product markets based on the capacity of the dedicated services in question. This is an approach that the Commission has used in the past.¹⁴² The approach is generally sound because business customers are unlikely to view lower capacity dedicated services as substitutes for much higher capacity dedicated services. This is true regardless of whether the customer is purchasing a TDM-based service or a packet-mode service.

c. Accounting for Differences in Pricing

In defining product markets, the Commission should account for the differences in the manner in which services are priced. For example, incumbent LECs offer DS1 and DS3 channel termination and transport mileage services separately, subject to different prices. Moreover, it is quite obvious that customers would not view last-mile channel termination and an interoffice mileage circuit as substitutes for each other. It follows that DS1 and DS3 channel termination services and transport services should be treated as separate product markets.

In contrast, Ethernet service providers generally do not charge separate rates for transport mileage within a defined local area. Instead, they generally charge a single price for the channel termination and transport components of the service. It makes sense therefore to treat Ethernet service to a particular location as a relevant product market without distinguishing between channel termination and transport circuits.

d. Accounting for Differences in Wholesale and Retail Markets

The Commission should treat services sold to wholesale and retail purchasers as belonging to separate relevant product markets. The Commission has often followed this

¹⁴² See, e.g., *TRRO* ¶¶ 166, 170-171.

approach in the past with regard to DS1, DS3 and other enterprise services.¹⁴³ Moreover, as explained in a declaration recently filed in this proceeding by Michael Buso of tw telecom, the service characteristics of retail and wholesale packet-mode special access services justify treating retail and wholesale packet-mode special access services as separate product markets.¹⁴⁴

2. *Defining Relevant Geographic Markets*

After defining product markets, the Commission must define relevant geographic markets. In the past, the Commission has treated each specific point-to-point route of a transmission services as a separate geographic market.¹⁴⁵ In the case of channel termination services, the Commission has held that the relevant geographic market is the commercial building in which the end user is located.¹⁴⁶ In the case of dedicated transport routes between incumbent LEC central offices, the Commission has held that the relevant geographic area is the connection between the two central offices.¹⁴⁷

In this proceeding, the Commission must define the geographic area in which a service provider's network must be located in order to offer a competitive service at a particular commercial building or on a particular interoffice route. Under the market power framework, the

¹⁴³ See *Phoenix Order* ¶ 46; *SBC-AT&T Merger Order* ¶¶ 24-80; *Verizon-MCI Merger Order* ¶¶ 24-81; *AT&T-BellSouth Merger Order* ¶¶ 27-87.

¹⁴⁴ See Declaration of Michael Buso of Behalf of tw telecom inc., ¶¶ 4-5 (dated June 28, 2012) (attached as Attachment 1 to Ad Hoc *et al.* Petition to Reverse Forbearance).

¹⁴⁵ See, e.g., *Regulatory Treatment of LEC Provision of Interexchange Services Originating in the LEC's Local Exchange Area*, Second Report and Order in CC Docket No. 96-149 and Third Report and Order in CC Docket No. 96-61, 12 FCC Rcd. 15756, ¶ 5 (1997); *SBC-AT&T Merger Order* ¶ 28; *Verizon-MCI Merger Order* ¶ 28.

¹⁴⁶ See, e.g., *Phoenix Order* ¶ 64.

¹⁴⁷ See, e.g., *id.* ¶ 7, n.233.

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Commission should do so by determining the geographic area in which a hypothetical monopolist could impose a SSNIP in the relevant product market. When using panel regressions, the Commission would test to see the extent to which the price charged in a particular product market at a particular location is affected by the presence of one or more competitors near the location. Market experience indicates that, in the vast majority of circumstances, a service provider can only compete effectively to serve a particular location if its network already reaches the location.¹⁴⁸

The competitive relevance of nearby network facilities differs depending on the type of service demanded at a particular location. The higher the potential profit associated with providing the service demanded at a particular location, the greater the investment in network construction a competitor would likely be willing to undertake in order to provide the service.¹⁴⁹ Conversely, the lower the potential profit associated with providing the service demanded at the location, the less construction a competitor would likely be willing to undertake to provide the service. Given the limited ability of competitors to deploy facilities to provide mid- and low-capacity special access services, it is likely that the FCC will need to treat only competitors with network facilities that actually reach the location at which a customer demands service as within the relevant geographic market.

¹⁴⁸ See, e.g., *tw telecom Build/Buy Analysis*; Declaration of Ajay Govil on behalf of XO Communications, LLC, ¶¶ 13-16 (dated Aug. 8, 2007) (attached to Comments of XO Communications, LLC, Covad Communications Group, Inc., and NuVox Communications, WC Docket No. 05-25 (filed Aug. 8, 2007)) (explaining that “[t]he construction of laterals to connect office buildings to the XO network is extremely difficult, time consuming and costly, even when adding buildings to our [Metro Fiber] Rings that are located in close proximity to our MF Rings”).

¹⁴⁹ See, e.g., *tw telecom Build/Buy Analysis* at 1; Ad Hoc *et al.* Petition to Reverse Forbearance at 47-49 & nn.159-166; *Phoenix Order* n.222.

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In addition, as is the case with defining product markets, the Commission should account for the manner in which service providers price their offerings in defining geographic markets. For example, since, as discussed, incumbent LECs offer DS1 and DS3 channel termination facilities and DS1 and DS3 interoffice transport services as separate services subject to different rates, it makes sense to establish a separate geographic market for DS1 and DS3 channel termination and transport services. However, because incumbent LECs and other service providers generally do not assess a separate mileage or transport charge for Ethernet services, it makes sense to define geographic markets for Ethernet services based solely on the customer's location.

Moreover, the Commission will need to aggregate geographic markets subject to similar levels of competition so as to make the analysis administratively feasible.¹⁵⁰ Several parties in this proceeding, including BT and tw telecom, have proposed viable means of aggregating geographic areas in which incumbent LECs face similar levels of competition in relevant special access product markets.¹⁵¹

¹⁵⁰ The Commission has often done this in the past. *See, e.g., id.* ¶ 64; *AT&T-BellSouth Merger Order* ¶ 31; *LEC Classification Order* ¶ 5.

¹⁵¹ *See* Comments of BT Americas Inc., WC Docket No. 05-25 *et al.*, at 25-26 (filed Jan. 19, 2010) (“*BT January 19, 2010 Comments*”) (proposing that the Commission establish a national market for lower-capacity special access services for which incumbent LECs do not face substantial competition in any geographic area); Reply Comments of tw telecom, WC Docket No. 05-25 *et al.*, at 18 (filed Feb. 24, 2010) (“*tw telecom February 24, 2010 Reply Comments*”) (proposing use of wire centers to aggregate point-to-point connections subject to similar levels of competition); Declaration of Bridger M. Mitchell, ¶¶ 38-49 (dated Jan. 19, 2010) (attached as Attachment A to Comments of Sprint Nextel Corporation, WC Docket No. 05-25 *et al.* (filed Jan. 19, 2010) (“*Sprint January 19, 2010 Comments*”)) (“*Mitchell January 19, 2010 Declaration*”) (same).

3. Identifying Market Participants

The FCC should treat a firm as a participant in a relevant market only to the extent that the firm has deployed facilities (including those obtained via IRUs) in the geographic market that can be used to provide a service in the relevant product market. Again, this is the approach utilized by the Commission in the *Phoenix Order*.¹⁵² Under this approach, the Commission should not consider a firm that relies on UNEs or some other form of leased incumbent LEC facilities as a market participant.

Excluding firms that rely on transmission facilities leased from incumbent LECs makes sense for several reasons. To begin with, an incumbent LEC can raise the costs of rivals that rely on its leased transmission facilities. It can do so by denying, delaying and degrading the quality of the UNE or other leased facility. This conduct enables the incumbent LEC to limit competitors' ability to offer products that are of superior quality or are priced below the incumbent LECs' offerings.

UNEs are also subject to important eligibility restrictions and usage caps that further diminish the extent to which they can be relied upon by competitors to compete with incumbent LECs in the provision of dedicated services.¹⁵³ In addition, UNEs are gradually being eliminated. For example, DS1 and DS3 loop and transport facilities are not available when increases in the number of business access lines and/or collocations in relevant a wire center

¹⁵² See *Phoenix Order* ¶ 71 (counting as competitors in the wholesale loop market only those service providers that “have constructed their own last-mile connections to enterprise customers, and . . . offer these services to competitors as wholesale inputs”).

¹⁵³ See, e.g., 47 C.F.R. § 51.309 (b) (prohibiting use of UNEs exclusively for the provision of mobile wireless service or interexchange service); *id.* § 51.318(b) (establishing eligibility criteria for enhanced extended links); *id.* § 51.319(a)(4)(ii) (capping the number of UNE DS1 loops at 10 per building); *id.* § 51.319(a)(5)(ii) (capping the number of UNE DS3 loops at one per building).

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cause the non-impairment triggers to be met.¹⁵⁴ Unbundled copper loop facilities are also eliminated where an incumbent LEC replaces the legacy copper with fiber local transmission facilities.¹⁵⁵ Moreover, absent Commission action, all DS1 and DS3 UNEs will disappear once incumbent LECs complete the transition to packet-mode networks and discontinue offering TDM-based services entirely.

In addition, the Commission should only treat a competitor as a market participant if its facilities can actually be used to provide services deemed to belong to the relevant product market. For example, as explained, “best efforts” cable modem services offered via traditional HFC network facilities are not substitutes for dedicated special access services. Even if it is possible that a cable company might deploy facilities that enable it to provide services that are substitutes for special access services in the future, it cannot be treated as an existing market participant if its facilities can only be used to offer “best efforts” services.

Finally, the FCC should not consider firms that are in financial distress to be market participants. Business customers do not perceive such firms to be viable alternatives to the incumbent LEC. For example, if a competitor enters bankruptcy, business customers are likely to conclude that the company is not stable enough to be trusted as a provider of telecommunications services. Such a competitor’s presence in the market is therefore unlikely to place any competitive pressure on the incumbent.

¹⁵⁴ See, e.g., *id.* § 51.319 (a)(4) (defining the non-impairment standard for DS1 loops); *id.* § 51.319 (a)(5) (defining the non-impairment standard for DS3 loops).

¹⁵⁵ See, e.g., *id.* (defining limited unbundling requirements applicable to loop facilities where copper is replaced by fiber).

4. *Applying the Established Market Power Framework to Measure Actual Competition in Relevant Special Access Markets*

The established market power framework is a reliable and efficient means of identifying the relevant special access markets in which incumbent LECs currently have the ability to set and maintain supra-competitive prices. Under the market power framework, the Commission assesses market share, demand elasticity, and supply elasticity in the relevant markets, and it assesses the extent to which the incumbent possesses advantages by virtue of its superior cost structure, size and resources as compared to other market participants. In applying this framework to the special access market, the Commission should consider the following.

As mentioned above, the Commission will need to combine relevant geographic markets into aggregations of similarly-situated geographic markets, such as wire centers or census blocks. But the Commission is unlikely to be able to conduct a market power analysis in every such aggregated geographic unit. Accordingly, the Commission will likely need to conduct a market power analysis in a statistically meaningful subset of geographic units. It will then need to develop a means of identifying those geographic areas in which incumbent LECs possess market power in a relevant product market. Several of the Joint Commenters have suggested means of classifying aggregated geographic areas based on the percentage of commercial buildings in an area that can be served by multiple competitor networks.¹⁵⁶ The analysis of the information gathered in response to the data request may yield even more reliable means of classifying similarly-situated geographic areas.

¹⁵⁶ See, e.g., *BT January 19, 2010 Comments* at 25-29 (describing means of aggregating similarly situated wire centers based on the number of facilities-based competitors with facilities proximate to commercial buildings in the wire center); see also *Mitchell January 19, 2010 Declaration* ¶¶ 38-49 (proposing that the Commission aggregate wire centers by using the proxy of the number of business lines and collocations in the wire centers).

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In all events, the Commission should choose a methodology for categorizing similarly-situated aggregated geographic areas that relies on a count of the network facilities, including last-mile facilities, actually deployed by competitors in the relevant geographic units. This approach is likely to be far more reliable than utilizing measures of the revenue opportunities (e.g., number of business access lines). This is because, as *tw telecom* has explained, the wide variation in market conditions among geographic areas (e.g., different zoning and public rights of way access rules, different pole attachment prices, different building access policies, different labor costs, varying levels of congestion and density and so on) make it very difficult to reliably predict the circumstances in which existing competitors can or will deploy local transmission facilities, especially last-mile facilities.¹⁵⁷ Moreover, as explained further in Section III.B *infra*, there is no basis for concluding that any relevant special access market is subject to potential competition. It follows that the Commission should rely on measures of actual competition, such as the number and location of competitor networks, including last-mile facilities, already deployed in a geographic area as a means of classifying geographic units as either subject to competition or not subject to competition.

a. Market Shares

The Commission's assessment of actual competition begins with an analysis of incumbent LEC market and alternative providers' shares. As explained, it is already clear that incumbent LECs have extremely high market shares in the provision of DS1 and DS3 services. Nevertheless, to the extent that the Commission finds it helpful to revisit this issue, it should utilize a methodology for measuring market shares that is forward-looking in the sense that it accounts for the possibility that a firm would use its existing facilities to provide a service in the

¹⁵⁷ See *tw telecom February 24, 2010 Reply Comments* at 21.

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future.¹⁵⁸ Specifically, the Commission should count the number of competitors in the relevant geographic area that have deployed facilities that can be used to provide the relevant service. For example, an incumbent LEC can provide Ethernet and other packet-mode services to essentially any commercial building and along any point-to-point transport route reached by its network. Thus, for purposes of the market share analysis, an incumbent LEC should be treated as serving all locations served by its network. Using this approach to assessing market shares and market concentration will enable the Commission to assess the position of a firm in a product, like Ethernet, that is being gradually deployed over pre-existing network facilities.

Moreover, the Commission should follow the *Phoenix Order* precedent and presume that the presence of only one competitor is insufficient to discipline incumbent LEC conduct in a relevant market. For example, in the *Phoenix Order*, the Commission concluded that Qwest continued to possess market power where it faced competition from only one competitor (Cox) that owned its own local transmission facilities, including last-mile facilities.¹⁵⁹ Indeed, Dr. Besen has found that over the range of markets studied by economists, it is almost always the case that the presence of a single competitor is insufficient to discipline a firm's conduct in a relevant market.¹⁶⁰ Consistent with this view, in the United Kingdom, Ofcom concluded that a

¹⁵⁸ See *Further NPRM* ¶ 73.

¹⁵⁹ See *Phoenix Order* ¶ 80; see also *TRRO* ¶¶ 193-94 (explaining that the presence of a single cable company competitor is insufficient to conclude that competition is possible in the provision of a particular type of local transmission facility).

¹⁶⁰ See generally Declaration of Dr. Stanley M. Besen (dated Apr. 22, 2009) (attached to Letter from Andrew L. Lipman, Counsel for TDS Metrocom *et al.*, and Thomas Jones, Counsel for Cbeyond *et al.*, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 08-24 (filed Apr. 23, 2009)).

single competitor is insufficient to discipline the incumbent LEC's prices in the provision of local transmission services.¹⁶¹

b. Demand and Supply Elasticity

In addition to assessing market shares, the Commission must assess demand elasticity and supply elasticity in the relevant markets. Demand elasticity measures the extent to which a customer is willing to switch to an alternative provider in response to a price increase. There are two key issues that the Commission should account for in assessing demand elasticity. *First*, as Dr. Mitchell has explained, an incumbent LEC has an extremely low firm elasticity of demand¹⁶² where no competitor has deployed facilities capable of providing the service demanded by the customer in the relevant geographic market (e.g., commercial building or point-to-point transport route).¹⁶³

Second, even in those locations in which a competitor has deployed facilities that can be used to provide the services demanded by the customer, incumbent LEC exclusionary purchase arrangements are likely to substantially diminish a customer's willingness to switch service providers in response to a price increase by the incumbent LEC. As a result, incumbent LECs face extremely low demand elasticity from special access customers (again, the incumbent LECs face low firm elasticity of demand).

¹⁶¹ See Ofcom Business Market Connectivity Review § 6.38 (Jan. 17, 2008), available at http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr/summary/bcmr_pt2.pdf.

¹⁶² Economists distinguish between (1) firm elasticity of demand, which measures the extent to which a particular firm's customers would switch to a different provider of the same product if the firm were to increase its price and (2) market elasticity of demand, which measures the extent to which customers would switch to a different product if the price of a product were to increase. The key issue here is an incumbent LEC's firm elasticity of demand.

¹⁶³ See Mitchell January 2010 Declaration ¶ 67.

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Nor is supply elasticity particularly high. Supply elasticity measures a service provider's ability to respond to a price increase from a customer's existing provider by supplying a lower-priced alternative. As with demand elasticity, a service provider's ability to undercut an incumbent LEC's price increase with an alternative, lower-priced service offering in a particular location depends on the extent to which the alternative provider can deploy facilities to the location in question.

A key aspect of measuring supply elasticity is a determination of the level of entry barriers in the relevant market. As described Section II.A *supra*, there are significant barriers to deployment of transmission facilities used to provide special access services. These barriers severely limit an alternative service provider's ability to extend its network to a new location in response to the incumbent LEC price increase. In addition, as further explained in Section II.B *supra*, incumbent LEC exclusionary purchase arrangements limit the addressable market for competitive providers of special access services. Indeed, these arrangements significantly diminish the ability of competitors to offer a lower priced alternative to the incumbent even where the competitor has deployed network facilities to the locations where the customer demands the service. The Commission must account for these effects in assessing supply elasticity in special access markets.

c. Incumbent LEC Cost Advantages

The Commission should also account for the incumbent LECs' other structural advantages when competing in relevant special access markets. Most importantly, incumbent LECs have enormous first-mover advantages in the provision of special access services.¹⁶⁴

¹⁶⁴ See, e.g., Ad Hoc *et al.* Petition to Reverse Forbearance at 54 & nn.184-186; *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers; Implementation of the Local Competition Provisions of the Telecommunications Act of 1996; Deployment of*

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Incumbent LECs have already deployed network facilities to virtually every commercial building in their respective incumbent LEC territories. This means that, unlike competitors, they need not establish new arrangements to obtain access to in-building ducts and risers in multi-dwelling units, to public rights of way, or to pole attachments¹⁶⁵ (in fact, in many cases the incumbent LECs own the poles).¹⁶⁶ They have already cleared these significant hurdles, and they already have network facilities in place needed to provide essentially any type of special access service.

Incumbent LECs also benefit from economies of scale and scope.¹⁶⁷ Their larger base of customers enables them to lower their fiber deployment costs by deploying new fiber facilities to a large number of locations in a single deployment and to obtain volume discounts on equipment needed to upgrade service arrangements. In addition, AT&T and Verizon are two of the largest long distance, broadband and mobile wireless service providers in the country. To the extent that these businesses share joint and common costs with special access, as is the case for example

Wireline Services Offering Advanced Telecommunications Capability, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, 18 FCC Rcd. 16978, ¶ 238 (2003) (“*TRO*”) (subsequent history omitted) (discussing incumbent LECs’ first-mover advantages in loop deployment); *Phoenix Order* ¶ 90 (“We see nothing in the record to indicate that the passage of time has lowered these barriers for competitive LECs that do not already have an extensive local network used to provide other services to enterprise locations today.”).

¹⁶⁵ See, e.g., *Ad Hoc et al. Petition to Reverse Forbearance* at 54 & nn.183-187; *Phoenix Order* n.268 (citing record evidence).

¹⁶⁶ See *Implementation of Section 224 of the Act*, Report and Order and Order on Reconsideration, 26 FCC Rcd. 5240, ¶ 206 (“[I]ncumbent LECs as a whole appear to own approximately 25-30 percent of poles . . .”).

¹⁶⁷ See, e.g., *Ad Hoc et al. Petition to Reverse Forbearance* at 55-56 & nn.187-191.

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with interoffice transport facilities, the resulting scope economies again give the incumbents lower average costs than their competitors.¹⁶⁸

Notwithstanding the incumbent LECs' advantages, it seems possible that alternative providers of special access could effectively compete in more relevant special access markets than is the case today, but they are prevented from doing so by incumbent LEC exclusionary purchase arrangements. As discussed in Section II.B.4 *supra*, Drs. Besen and Mitchell have concluded that incumbent LEC exclusionary purchase arrangements artificially limit the extent to which non-incumbent LEC competitors can establish scale economies by limiting the size of the market that such competitors can serve. The Commission should account for these advantages when assessing incumbent LEC market power in relevant special access markets.

d. Other Factors Relevant to the Market Power Analysis

Once the Commission has identified the relevant markets in which incumbent LECs have market power in the provision of special access, it should assess the reasonableness of incumbent LEC special access prices in those markets. As several of the Joint Commenters and Sprint have explained, the Commission can do this by comparing incumbent LEC prices for DS1 and DS3 special access services with UNE prices.¹⁶⁹ In addition, the Commission can compare incumbent LEC wholesale prices for Ethernet and other packet-mode special access services with the

¹⁶⁸ See, e.g., Letter from Eric J. Branfman, Counsel for Telecom Transport Management, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-65, at 1 (filed Aug. 22, 2011) ([T]he Verizon ILECs are affiliated with Verizon Wireless, which is currently the largest wireless carrier Therefore, in its ILEC region, Verizon has a large captive customer for wireless backhaul in the form of its wireless affiliate. Because of economies of scale in providing Ethernet wireless backhaul to multiple wireless carriers on a single cell site, this gives Verizon an advantage over other providers in bidding to provide backhaul to other wireless carriers in the Verizon ILEC region.”).

¹⁶⁹ See, e.g., *Sprint January 19, 2010 Comments* at 27; Comments of tw telecom, WC Docket No. 05-25 *et al.*, at 22 (filed Jan. 19, 2010).