

SPECIAL ACCESS: THE HARM OF PREMATURE DEREGULATION IN TELECOMMUNICATIONS[♦]

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INTRODUCTION

Many Americans are unknowing beneficiaries of a telecommunications service called special access.¹ They might rely on it when they access the Internet, talk on a cell phone, or retrieve money from an ATM.² Fundamentally, special access is a high capacity, dedicated, leased, general-purpose point-to-point network connection purchased from local exchange carriers (“LECs,” or telephone

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¹ Special access is also often called “dedicated access,” but this Note will use the former terminology.

² See *infra* Part II.

companies).³ It is an essential service used by the wireless cellular industry, the banking industry and hospitals,⁴ in rural broadband Internet deployment,⁵ and in other general-purpose data networks.⁶ According to self-reported data by four of the largest sellers of special access services, combined revenues from special access services exceeded twelve billion dollars in 2010 alone.⁷

The Federal Communications Commission (“FCC” or “Commission”) regulates the price of special access under its statutory mandate, but has taken substantial steps to relax these policies over the last fifteen years.⁸ This deregulatory trend has facilitated the inflation of special access prices, thereby raising operating costs of Internet and wireless service providers that rely on special access. This increased cost to providers in turn contributes to the rising prices of end-consumer Internet services, wireless plans, or even medical bills.⁹

Given that so many different industries rely on special access, market failures such as inflated pricing, the existence of market power, and lack of competition present significant cause for concern to the extent that they exist. Some have found evidence that supports a finding of these conditions, although others (mainly the largest special access providers or their affiliates) disagree. The scale economies of high-capacity services like special access and the small number of providers raise serious concerns about the competitiveness of the special access market and the impact of market concentration on consumers.

Internet service providers (“ISPs”) and wireless

³ The FCC has defined special access as “a dedicated transmission link between two places.” *See, e.g.*, AT&T Inc., 22 FCC Rcd. 5662, 5676 n.88 (2007). *See also* Special Access Rates for Price Cap Local Exch. Carriers, 20 FCC Rcd. 1994 ¶ 7 (2005) [hereinafter Special Access NPRM]. Special access is also often conflated with the terms “backhaul,” “middle-mile,” or “transport,” though the Commission has noted that each of these terms is distinct. *See, e.g.*, Comment Sought on Impact of Middle & Second Mile Access on Broadband Availability and Deployment, 24 FCC Rcd. 12470 (2009). We will explore these terms in Part II, *infra*.

⁴ FED. COMM’NS COMM’N, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN 143 (2010), available at <http://download.broadband.gov/plan/national-broadband-plan.pdf> [hereinafter NATIONAL BROADBAND PLAN].

⁵ *Id.*

⁶ Peter Bluhm & Robert Loube, *Competitive Issues in Special Access Markets*, NATIONAL REGULATORY RESEARCH INSTITUTE 6 (Jan. 21, 2009), http://nrri.org/pubs/telecommunications/NRRI_spec_access_mkts_jan09-02.pdf [hereinafter *NRRI Study*]. For example, “other general-purpose data networks” may include businesses’ own Internet access for its operations and employees, or an internal network between offices (however, if the latter does not connect to the public Internet, it may not be within the FCC’s jurisdiction because the communication is purely intrastate). The downstream effects of special-access price inflation in these examples are inflated prices in whatever goods or services these businesses sell, due to the companies’ increased operating cost.

⁷ Special Access Rates for Price Cap Local Exch. Carriers, FCC 12-92, 2012 WL 3637580 ¶ 2 (Aug. 22, 2012), available at <http://apps.fcc.gov/ecfs/document/view?id=7022007406> [hereinafter Price Flexibility Suspension Order].

⁸ 47 U.S.C. § 201(b) (2012). *See infra* Part III. The vast majority of special access is considered interstate, and therefore subject to the FCC’s jurisdiction under 47 U.S.C. § 152(a), but approximately eleven percent of special access is purely intrastate and governed by state law alone. *See NRRI Study, supra* note 6, at 9–10. This Note explores only interstate special access regulation.

⁹ *See infra* Part IV.A.

telecommunications carriers in the United States rely primarily on three companies for special access: AT&T, Verizon, and CenturyLink.¹⁰ The Commission regulates these carriers' special access services and has been investigating the adequacy of its current regulatory scheme and evaluating competition in special access since 2005.¹¹ In a Notice of Proposed Rulemaking ("NPRM") that year, the FCC sought information on various markets and whether innovation or competition suffered as a result of these issues.¹² Acting on its own research and the mass of public comments filed, the Commission recently suspended its special-access pricing rules and restarted its search for a more efficient, precise method of regulation.¹³

Because of the esoteric nature of special access and the relative inaccessibility of basic materials explaining it, this Note introduces to non-experts the technology itself, explains its critical functionality in some common telecommunications services, and provides an economic analysis of its effects. This Note also suggests that the Commission's efforts to stabilize special access prices have been unsuccessful because its regulatory paradigm is inapposite: it has treated special access as if deregulation will induce or preserve competitive entry, which would then control pricing and obviate regulation; but the nature of special access inevitably precludes this result.

Part I of this Note explains the technological basics of special access and its economic characteristics. Part II explores how special access services are employed in various telecommunications systems. Part III surveys the history of the Commission's special access regulation and reviews various commenters' arguments in the FCC's 2005 public inquiry. Part IV examines the reasonableness of special access prices, analyzes its economic features, studies the FCC's recent actions, and suggests that the Commission abandon its price flexibility rules until it can identify reasonable metrics for detecting the presence of competition in special-access markets.

I. BACKGROUND

A. *Technological Background*

In order to understand why special access is critical to so many

¹⁰ See, e.g., Stephen E. Siwek, *Economic Benefits of Special Access Price Reductions*, ECONOMISTS INC. 7 (2011), available at <http://www.mediaaccess.org/uploads/EIReport.pdf>. Qwest Communications now does business as CenturyLink, after the latter purchased Qwest in April, 2010 and the FCC approved the deal in early 2011. *Telecom's Active Deal Machine*, N.Y. TIMES (Mar. 20, 2011), <http://dealbook.nytimes.com/2011/03/20/telecoms-active-deal-machine>.

¹¹ See Special Access NPRM, *supra* note 3. The FCC has also examined special access as part of the recent AT&T-T-Mobile merger proceeding. See *infra* Part II.C. On August 22, 2012, the FCC once again began to evaluate its special access policies, having determined that its existing regime was inadequate. See *infra* Part III.D.

¹² See Special Access NPRM, *supra* note 3.

¹³ See Price Flexibility Suspension Order, *supra* note 7.

downstream markets, it is necessary to understand precisely what the relevant technologies are and how they affect other industries. To illustrate, suppose that “ISP” is the name of a broadband Internet service provider serving business customers in Kansas City, Missouri. ISP owns the physical wires in the city between its central office and a factory, both within the city limits. ISP provides the factory with Internet and voice over Internet protocol (“VOIP”) services using these wires.¹⁴ The factory’s owner also holds a sister factory in Iatan, Missouri, a rural village less than one hour outside the city. ISP wants to provide Internet service to the second location in Iatan, but it does not own any physical infrastructure that reaches it. The local telephone company, however, owns such infrastructure, and is the only entity that does.

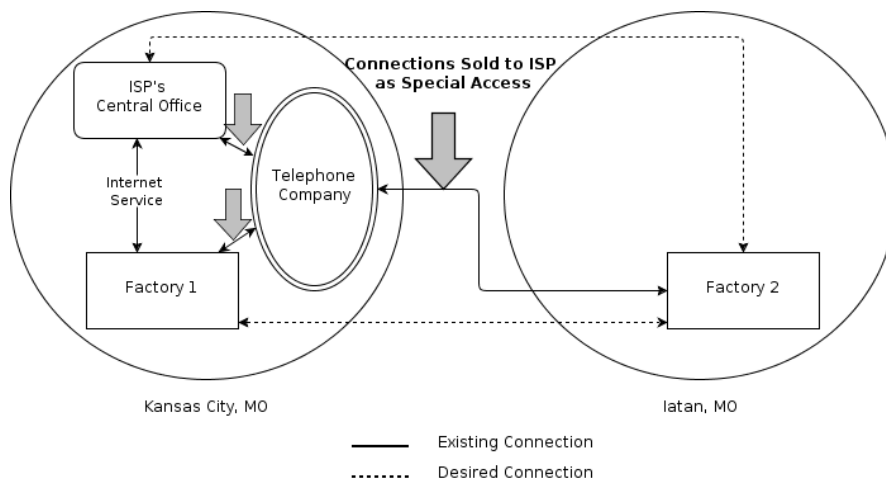
To create the desired connection, ISP can either build the physical infrastructure itself (and pay the costs of labor and materials to install the wire, and of acquiring any necessary easements from landowners or landlords), or it can solicit the telephone company to permit ISP to provide its own services along the telephone company’s existing wires.¹⁵ Being the cheaper option,¹⁶ ISP chooses the latter and pays the telephone company to implement its own services on the telephone company’s network, providing the sister factory with Internet service and connecting the two factories directly.¹⁷

¹⁴ Most large providers like ISP do not own their own infrastructure, and serve their customers entirely using special access. However, for illustrative purposes, ISP here owns its own physical network.

¹⁵ See, e.g., Verizon Commc’ns Inc., 20 FCC Rcd. 18433, 18447 (2005) (“Firms needing dedicated transmission links essentially have three choices: to deploy their own facilities, to buy special access service from incumbent LECs, or to purchase such service from a competing special access provider.”). An additional alternative is a wireless connection, though these are less desirable as substitutes to special access because of capacity constraints. In the current hypothetical, no such wireless service nor any competing special access providers exist.

¹⁶ See Special Access NPRM, *supra* note 3, ¶ 26 (citing AT&T Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services, WC Docket No. 05-25, FED. COMM’NS COMM’N 28–29 (Oct. 15, 2002), available at <http://apps.fcc.gov/ecfs/document/view?id=6513297623> (pages 1–24) (pages 25–41 continued at <http://apps.fcc.gov/ecfs/document/view?id=6513297624>)) (“[B]ecause of basic economic and network engineering considerations, competitors will be able to deploy alternative facilities [i.e., build new connections] in only limited circumstances. [These] facilities are characterized by enormous economies of scale and sunk costs. Thus, in most instances, replicating incumbent transmission facilities would be economically wasteful. And even in those few instances where self-deployment can be economically justified, barriers to entry such as the inability to obtain necessary rights-of-way in a timely fashion often prevent competitive deployment of facilities.”).

¹⁷ Many businesses with multiple offices seek to connect the offices together using a high-bandwidth data connection in order to minimize delay, called latency, and maximize bandwidth capacity when transmitting messages between them.



The diagram below illustrates ISP's decision to implement the desired connection using the telephone company's physical infrastructure. Simply, rather than physically building a new connection to the second factory, which is represented by the "desired" connections, ISP connects to the factory indirectly using the telephone company's "existing" connections. Data travels along the existing connections from the ISP's central office, through the telephone company's office, to Factory 2 in Iatan. The telephone company leases capacity to ISP on these connections in the form of special access.¹⁸

ISP is also concerned that the phone company, in providing service to its other customers who use some of the same physical infrastructure as the Iatan factory, may cause congestion that interferes with ISP's ability to provide good quality of service to the factory. The telephone company therefore promises that ISP will receive dedicated bandwidth along that route, immune to outside congestion. It ensures that whatever capacity ISP requires, up to an agreed-upon limit, will be provided regardless of the usage of the phone company's other customers using that connection to Iatan. This dedicated, leased, high-capacity service is called special access.¹⁹

The term is not limited to Internet access provision specifically. Special access lines can transmit voice content (as in traditional

¹⁸ In many cases, the facilities owned by a company like ISP may be physically located inside the local exchange carrier's office, interconnecting its network with the carrier's equipment to provide services to its customers. See, e.g., *NRRRI Study*, *supra* note 8, at 14.

¹⁹ Special access is often contrasted with "switched access," a network feature where a new connection is created between a customer and a long-distance carrier on demand. On the other hand, special access service necessarily implies the existence of a dedicated, always-on connection between the customer and the special access provider's network. See, e.g., *WorldCom, Inc. v. FCC*, 238 F.3d 449 (D.C. Cir. 2001) (contrasting special access with switched access). But the distinction between switched and special access is largely irrelevant to any service other than traditional telephony, because Internet protocols do not use switched access.

telephony) and data (as in the Internet). It also need not connect offices, or even buildings, to preexisting networks. Any point-to-point lease of dedicated capacity along telecommunications infrastructure, which can include lease of equipment in some circumstances, may be termed special access.²⁰ Therefore, it can be understood simply as a general term for exclusive, leased bandwidth on wires owned by the special access provider.²¹ What makes the access “special” is that the purchaser receives what is colloquially called a “private line”—guaranteed, dedicated service at a given bandwidth between specific start- and end-points.

Most special access services are provided by incumbent Local Exchange Carriers (“ILECs”), who own massive regional network infrastructures across the country.²² Most ILECs are Regional Bell Operating Companies (“RBOCs”) or are the descendants of one or more RBOCs after various mergers.²³ ILECs began as telephone exchange

²⁰ See *infra* Part II.

²¹ “Bandwidth” is simply throughput. It is measured in information (usually bits or megabits) per second. “Exclusive,” as used here, means that the special-access provider guarantees that the purchaser will achieve certain data speeds regardless of external congestion. In other words, although internal traffic generated at the purchaser’s own place of business may still cause congestion on the special-access “line,” *external* traffic will not, even if it uses the same physical wires. This is in contrast to the “best effort” terms of most consumer-grade Internet connections, whereby the users’ experienced speeds are subject to congestion (especially during peak usage hours).

²² A Local Exchange Carrier, or LEC, is simply a telephone carrier. 47 U.S.C. § 153(26) (2006). A carrier is an ILEC if it provided telephone services in a particular area prior to February 8, 1996, was a member of the exchange carrier association prior to that date, is a successor or assign of one of those carriers, or if it occupies a position comparable to one of the above. 47 U.S.C. § 251(h). While special access services are typically associated with ILECs, some cable operators may also provide special-access-type services. In an interview with Earl Comstock, ex-CEO of COMPTEL and contributor to the drafting of the Telecommunications Act of 1996, Mr. Comstock suggested that cable operators are not subject to the common-carrier requirements imposed by Title II of the Telecommunications Act, but maintain their ability to interconnect with the telecommunications carriers by having an affiliated entity (or possibly a subsidiary) that is a certificated LEC. In that way, they may be able to force interconnection with telecommunications companies under Title II common-carrier requirements, while dodging the responsibilities that those requirements impose. Telephone Interview with Earl Comstock, ex-CEO, COMPTEL (Nov. 18, 2011). See 47 U.S.C. §§ 201–31. This may pose an immense regulatory challenge for the Commission, the solution to which is unclear at present.

²³ For most of the twentieth century, AT&T operated as a legal, government-sanctioned monopoly. When telephone service became widely adopted and competitors to AT&T in long-distance telephone service arose, the Department of Justice initiated an antitrust suit against AT&T in 1974. AT&T entered into a settlement agreement with the government in 1982, best known as the Modification of Final Judgment, or MFJ, which permitted AT&T to maintain its long-distance operations but severed its local telephone services and split them into seven smaller telephone companies, to take effect on January 1, 1984. These seven telephone companies became known as the Regional Bell Operating Companies, or RBOCs. See Jerry A. Hausman & J. Gregory Sidak, *A Consumer-Welfare Approach to the Mandatory Unbundling of Telecommunications Networks*, 109 YALE L.J. 417, 427 (1999) (“Before the MFJ required divestiture, AT&T had consisted of three main parts: (1) local companies, . . . which provided about eighty percent of local U.S. telephone service; (2) AT&T Long Lines, which provided almost all domestic and international long-distance service; and (3) Western Electric, including Bell Laboratories, which provided most of the telecommunications equipment for AT&T’s local and long-distance units. After divestiture, AT&T continued to operate the long-distance and manufacturing units, while the local companies were divested and organized into seven Regional Bell Operating Companies (RBOCs.)”); *A Brief History: The Bell System*, AT&T, <http://www.corp.att.com/history/history3.html> (last visited Sept. 29, 2012); see generally ROBERT

carriers, and provided more data-driven services as technology evolved, upgrading their existing infrastructure as necessary to meet the growing demand for higher-speed and higher-capacity data transit. The most prominent ILECs, which also sell the vast majority of special access services, are the three remaining RBOCs: AT&T, Verizon, and CenturyLink.²⁴ Other LECs, called competitive LECs (“CLECs”),²⁵ might buy or sell special access services depending on the circumstances.

B. Considerations of Economics and Market Power

Economics and antitrust concepts are essential to the study of special access because the Commission’s rationale for regulating it is predicated on the idea that the small number of special access providers and substantial capital investment needed to build a network raise concerns about competitive market entry.²⁶ The threat of monopoly power in special access is significant because of the small number of market participants and the high barriers to entry presented by the cost of constructing a network.

Building network infrastructure from nothing requires tremendous up-front capital due to the costs of materials, rights of way, labor, and others.²⁷ Moreover, it is difficult for new market entrants to directly compete with an incumbent, who likely has an established customer base in a given geographical area and enjoys low marginal cost for new customers.²⁸ The problems are complicated further when a special access provider also competes in downstream industries that may rely

W. CRANDALL, *AFTER THE BREAKUP: U.S. TELECOMMUNICATIONS IN A MORE COMPETITIVE ERA* (1991).

²⁴ CenturyLink was formerly known as Qwest, an ILEC. *See supra*, note 10. *See, e.g.*, Review of the Section 251 Unbundling Obligations of Incumbent Local Exch. Carriers, 18 FCC Rcd. 16978 ¶ 578 (2003) (confirming Qwest’s status as an ILEC).

²⁵ 47 C.F.R. § 61.26 (2012).

²⁶ *See, e.g.*, In the Matter of Price Cap Performance Review of Local Exch. Carriers, 11 FCC Rcd. 858, 863 (1995) (“The LEC price cap plan was designed to simulate some of the efficiency incentives found in competitive markets and to act as a transitional regulatory scheme until the advent of actual competition makes price cap regulation unnecessary. Price cap regulation encourages LECs to improve their efficiency by harnessing profit-making incentives to reduce costs, invest efficiently in new plant and facilities, and develop and deploy innovative service offerings.”). For an introduction to some of the economics and antitrust concepts used in this Note, see HERBERT HOVENKAMP, *ECONOMICS AND FEDERAL ANTITRUST LAW* (1985).

²⁷ *See, e.g.*, Special Access NPRM, *supra* note 3, at 2004 ¶ 26 (“Most of the cost of providing a special access line is in the support structure, i.e., the trenches, manholes, poles and conduits, the rights-of-way, and the access to buildings.”); Comments of Sprint Nextel Corporation, Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMM’NS COMM’N p. 24 n.75 (Aug. 8, 2007), available at <http://apps.fcc.gov/ecfs/document/view?id=6519610322>.

²⁸ An incumbent may have low marginal cost because the network’s foundation already exists, and any investment to connect additional customers would be low. “Once the grid is in place—once every major street has a cable running above or below it that can be hooked up to the individual residences along the street—the cost of adding another subscriber probably is small.” *Omega Satellite Prods. Co. v. City of Indianapolis*, 694 F.2d 119, 126 (7th Cir. 1982) (Posner, J.) (describing the cable system, which has economic characteristics similar to special access). *See infra* Part II.A for further explanation of these concepts.

on special access.

To illustrate, assume that the telephone company from the earlier hypothetical, which provides special access, also provides Internet connectivity to businesses in Kansas City as a direct competitor to ISP.²⁹ If the telephone company's existing network can service both of the customer's factories (using the same wires by which it provides ISP special access), it will have incentive to deny ISP the ability to use its infrastructure connecting to Iatan—or at least to frustrate ISP by charging exorbitant prices or demanding excessive terms.³⁰ If it charged ISP supra-competitive³¹ rates for special access, the telephone company would be at a distinct advantage because it could minimize its Internet provision costs simply by paying itself, whereas ISP would have to pay the telephone company higher rates for access to the second factory. To maintain its profits, ISP would likely pass these costs on to its customers in the form of higher prices.

If the telephone company is permitted to extract monopoly rent from ISP, ISP's customers must either pay a higher price for the same Internet access or switch to the telephone company's cheaper Internet services. Thus, as a result of its own overpricing of special access, the telephone company can edge ISP out of business (or at least obtain a substantial competitive cost advantage). Taken to the extreme, the telephone company could use its dominance in special access to acquire an *additional* monopoly in the downstream Internet service market.³² If

²⁹ See *supra* p. 115.

³⁰ The Telecommunications Act of 1996 requires ILECs to permit any telecommunications carrier the right to interconnect with its network for "reasonable" rates. See 47 U.S.C. § 251 (2006). This hypothetical illustrates the incentives behind the reason for the rule. In practice, it is typically not *access* to the ILEC's network that is at issue, but only whether the prices charged are reasonable.

³¹ Prices are supra-competitive when they are higher than they would be if the seller is simply seeking to recover costs and make a small return on investment, as is the case in a competitive market. Supra-competitive prices are usually an effect (and also an indication) of market power.

³² There is an argument that the "one monopoly rent" theorem would preclude this behavior. The one monopoly rent theorem states that if an entity can extract supra-competitive prices in a market over which it has a monopoly, and if it can leverage that market power over a downstream market, it would be inefficient for it to enter the downstream market and obtain a second monopoly (using its cost advantage of not having to pay monopoly prices for its own good or service). The entity would not need to engage in this practice, called vertical exclusion, because it could theoretically obtain the same profit simply by raising the price of the good or service over which it has a monopoly, thereby extracting additional rent from the downstream purchaser. See Daniel F. Spulber & Christopher S. Yoo, *Rethinking Broadband Internet Access*, 22 HARV. J.L. & TECH. 1 (2008); Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957) (forming the canonical articulation of the theorem).

However, it is unclear whether the one monopoly rent theorem applies. The theorem presumes that the monopolist is able to charge full monopoly rent, which the ILECs, due to price regulation to the extent that it exists, may not. Professors Spulber and Yoo recognize the exception to the theorem that applies when a monopolist is subject to price regulation. This exception probably applies to special access because deregulation has not universally and completely eliminated the effectiveness of price regulation that remains in some areas. Spulber & Yoo, *supra* at 38 ("The literature acknowledges exceptions to the one monopoly rent theorem under which vertical integration can be profitable. For example, a monopolist subject to rate regulation may well find it profitable to integrate vertically. Gaining control of a second, unregulated level of production would allow the firm to earn the supracompetitive profits that rate

there existed a competing special access provider in that area, ISP could avoid these problems by switching providers. But in most cases, telephone companies have regional monopolies over special access services, eliminating the ability to switch.³³ These problems are why the Commission initially decided to regulate special access, and may inform considerations in future policy prescriptions.

II. SPECIAL ACCESS APPLIED

In order to understand the critical role that special access plays in various telecommunications industries, it is helpful to begin by exploring basic network architecture and data transmission concepts. Then this Part delves into how special access impacts the wireless and broadband Internet markets.

A. Basic Telecommunications Network Architecture

In its *Inquiry Concerning the Deployment of Advanced Telecommunications*, the Commission identified the five building blocks of telecommunications architecture: backbone, middle mile, last mile, last hundred feet, and connection points.³⁴ It compared the components to those of the road system in an extended analogy:

Backbone—Multi-lane Interstate Highway: Backbone provides a long-distance, high-capacity, high-speed transmission path for transporting massive quantities of data, much like the way a large multi-lane interstate highway allows large amounts of traffic quickly to travel long distances.³⁵

Middle Mile—Divided Highway: As its name suggests, middle mile facilities provide relatively fast, large-capacity connections between backbone and last mile, similar to the way a divided highway may connect local roads to multi-lane interstate highways. Middle mile facilities can range from a few miles to a few hundred miles.

. . . Many providers of middle mile transport lease capacity on their networks to non-facilities based Internet services providers (ISPs) and high-speed providers, who find the transport speeds adequate to meet their needs. [This leased capacity is special access.] For example many local exchange carriers (LECs) currently lease the

regulation prevents the firm from earning in the regulated level of production. In such cases, it may be appropriate to prohibit vertical integration in order to isolate and quarantine the monopolist.”). See *infra* Part III for a history of the FCC’s regulation.

³³ See *infra* Part IV. In its August 2012 Report and Order, the Commission recognized this problem explicitly as applied to the petroleum industry. See Price Flexibility Suspension Order, *supra* note 7, ¶ 3 (“The American Petroleum Institute expresses concern that, because its member companies’ facilities are frequently located in isolated locations where facilities-based competition is scarce, they are highly sensitive to incumbent LECs extracting supra-competitive profits.”).

³⁴ 15 FCC Rcd. 20913 (2000).

³⁵ *Id.* ¶ 18.

fiber or high-speed lines connecting their central offices. Most cable systems also have fiber or satellite transport facilities to regional and national backbone, which they may lease to other providers.³⁶

Last Mile—Local Road: The last mile is the link between the middle mile and the . . . end-user's terminal. The last mile is analogous to the local road between a larger, divided highway and a traveler's driveway.³⁷

Last 100 Feet—Driveway: The last 100 feet is the link between the last mile and the end-user's terminal, which is similar to the way a driveway connects a traveler's home or office to a local road. The last 100 feet includes the in-house wiring found in a consumer's residence, the wiring in an apartment or office building, the more complex wiring in a wireline local area network, or the wireless links in a local wireless network.³⁸

Connection Points—Intersections, On-Ramps, and Interchanges: Connection points are the places at which the various components of the network interconnect, often with the aid of an electronic or optical device (e.g., switches and routers between the middle mile and backbone), so that data can move across the network. Connection points are analogous to the intersections, on-ramps, and interchanges between local roads, divided highways, and multi-lane interstate highways.³⁹

This is telecommunications architecture in a nutshell. As noted above, special access is typically provisioned in the middle mile, though it technically can be provided at and between any points in the architecture. A metaphor may demonstrate these concepts in practice and illustrate the critical function of special access:

Joe's Movers is a small, regional moving company for residential customers. When a customer wishes to move locally, Joe's transports her belongings itself using a small fleet of midsize moving trucks that it owns. However, when a customer wants to move across long distances, Joe's will contract with a large interstate freight carrier like United Van Lines. United Van Lines has invested massive resources into its many large tractor-trailers, determined the most efficient truck routes across the country, and hired a team of expert professional drivers. Generally, United Van Lines does not contract directly with individual residential movers. Joe's comes to the customer's home on moving day with one of its own smaller trucks, loads her belongings onto it, and transports them to a local facility, where it transfers them to one of United Van Lines' large trailers. United Van Lines then transports the goods across

³⁶ *Id.* ¶¶ 18, 25 (emphasis added).

³⁷ *Id.* ¶ 18.

³⁸ *Id.*

³⁹ *Id.*

the country along its predetermined routes. United Van Lines may attempt to unload at the destination using its own trailers, but if the destination is on a small road, it will instead hand the goods off to another local moving company (like Joe's) at the destination area. Then that local moving company will transport the goods the "last mile" to the customer's new home again using smaller mid-size vehicles.

In networking terminology, our data is the customer's belongings, Joe's is an ISP or cellular carrier (serving the middle and last mile to consumers' homes), and United Van Lines provides the infrastructure backbone (and possibly part of the middle mile). Each of the actors in this hypothetical serves an analogous function to the above networking hierarchy. In telecommunications, the backbone provider (the United Van Lines equivalent) is often, but not always, a different entity from the Local Exchange Carriers (Joe's Movers), which provide middle- and last-mile access.⁴⁰

The need for special access arises when Joe's must reach a customer who lives farther than would be economical for Joe's to travel to using its own fleet. Rather than buying additional vehicles to extend its coverage, Joe's can instead arrange with another mover already servicing that area to reserve space in that company's trucks for Joe's customers' belongings. In doing so, Joe's can expand its service area coverage without the fixed expense of purchasing additional vehicles or hiring additional drivers. This arrangement is analogous to one form that special access might take, and demonstrates its function in a similar network structure.

B. *The Role of Special Access in Wireless Cellular Services*

One of the chief uses of special access is in wireless cellular networks. The difference between the network hierarchy described above and a wireless network is that in the latter, the last mile is a wireless connection between a cell tower and a user's handset, rather than a wired connection to the end user's home. The cell tower, in turn, is usually connected to her wireless carrier's local office by wireline.⁴¹ This wired connection between cell towers (or cell "sites") and a carrier's local office is called "wireless backhaul," or just "backhaul."⁴²

⁴⁰ If the ownership structure of the telecommunications industry were stated in terms of the moving hypothetical, it would be as if almost every local mover like Joe's were owned by one of three companies across the country. In telecommunications, Verizon, AT&T, and CenturyLink provide local exchange services for most of the United States. See *supra* note 10.

⁴¹ Wireline simply means that information travels by wire, as opposed to wirelessly. See 47 U.S.C. § 153(52) (2006) (defining "wire communication."). While cell towers are usually connected to carriers' local offices by wireline, some providers implement this connection wirelessly. However, it is far less prevalent.

⁴² See *Fifteenth Report, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless*, WT Docket No. 10-133, FED. COMM'NS COMM'N ¶ 319 (June 27, 2011), available at <http://apps.fcc.gov/ecfs/document/view?id=7021699576> [hereinafter *Fifteenth Wireless Competition Report*]; see also *NRRRI Study*, *supra* note 6, at 6-7. The term "backhaul" excludes long-haul connections that include the network's backbone. Backhaul only references

Backhaul is often confused with special access, but each has a distinct meaning.

The difference between backhaul and special access is the difference between form and function. Special access is the form; backhaul is the function. A connection is backhaul if it serves the purpose of transferring data from a cell tower to a carrier's local office, regardless of whether it is by wire or wireless. A connection would also be backhaul if the carrier connected the tower by building new conduit⁴³ itself, but backhaul usually takes the *form* of special access—or in other words, is implemented by purchasing special access to service that point-to-point connection. This frequent association is why the terms “backhaul” and “special access” are commonly conflated.

To build a wireless network, a carrier must establish cell sites throughout a region by buying or leasing cell towers, connecting them to the rest of the carrier's network (the backhaul), and installing all necessary equipment.⁴⁴ Many cell towers are owned and operated by independent entities and leased to the major wireless carriers, which often share space in cell sites as co-tenants.⁴⁵ Because leasing dedicated capacity is less expensive than deploying new fiber-optic cable between a cell site and the carrier's central office, backhaul is often implemented using special access services. And the transition in the wireless industry to 4G high-speed Internet access technologies will continue to increase the demand for high-capacity backhaul.⁴⁶

The ILECs Verizon and AT&T, both of which have wireless carrier affiliates, own enormous high-capacity fiber and copper networks throughout the country. These two ILECs often provide backhaul, in the form of special access, to competing wireless carriers

the middle-mile connection between a cell tower and an interconnection point (where the local network interfaces with the network backbone).

Additionally, the term “wireless backhaul” contains an inherent ambiguity: in one sense, as it relates to the wireless industry, it refers to the general term for a connection between a cell tower and the carrier's office. In the other, it refers to implementing the backhaul connection using a wireless *connection* such as microwave antennas. Implementing the backhaul connection wirelessly is an alternative to a wired connection, but is usually not preferred over a wired connection. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-10-779, TELECOMMUNICATIONS: ENHANCED DATA COLLECTION COULD HELP FCC BETTER MONITOR COMPETITION IN THE WIRELESS INDUSTRY 5 n.9 (2010), available at <http://gao.gov/assets/310/308167.pdf> (“While special access circuits leased from ILECs are the most common method of accessing backhaul, wireless carriers also use other methods to connect their wireless infrastructure to the telephone network, such as wireless backhaul (e.g., microwave antennas).”).

⁴³ Conduit is a generic term for any wire carrying voice or data information, including fiber-optic cable, copper wire, or coaxial cable.

⁴⁴ The Commission has identified the primary barriers to entry in the wireless industry:

- (1) the cost of acquiring spectrum licenses or spectrum leases; (2) network coverage costs such as site acquisition and preparation costs, site construction and leasing costs, network equipment costs, backhaul transport costs, and other potential interconnection and roaming costs; (3) the costs of offering customers a portfolio of attractive wireless devices; and (4) the costs of marketing and distributing wireless services and devices.

Fifteenth Wireless Competition Report, *supra* note 42, ¶ 60. There were nearly 250,000 active cell towers in the United States as of 2009. *Id.* ¶ 308.

⁴⁵ *Id.*

⁴⁶ *Id.* ¶¶ 323–24.

unaffiliated with a wireline network.⁴⁷ In 2010, Sprint claimed in its petition for the FCC to deny AT&T's application for permission to purchase T-Mobile that

[o]ver 90% of special access sold to other carriers, including backhaul services, is provided by LECs, primarily AT&T and Verizon. Most of the remaining backhaul services are provided by cable companies such as Comcast, fiber owners such as tw telecom and Level3, and other providers including FiberTower.⁴⁸

Sprint also claimed that thirty percent of its 2010 cell tower expenses were attributable to the cost of special access services, much of which went to Verizon and AT&T.⁴⁹ Across the country, in fact, special access prices are higher in areas where the ILECs have a monopoly.⁵⁰

Because backhaul is a crucial input into the wireless market, and special access is the most common means of implementing backhaul, it follows that the price of special access is inextricably related to the competitiveness of the wireless industry.⁵¹ If one of the parties to a merger or buyout is a vertically integrated special access provider (such

⁴⁷ Fourteenth Report, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, WT Docket No. 09-66, FED. COMM'NS COMM'N ¶ 296 (May 20, 2010), available at <http://transition.fcc.gov/14report.pdf> ("Wireless providers unaffiliated with a wireline provider [like Sprint or T-Mobile] often *must rely on* their competitors' affiliates [Verizon and AT&T, both ILECs] for access.") (emphasis added). It is worth noting that the Commission changed the language of the equivalent passage in the Fifteenth Wireless Competition Report. "Wireless providers unaffiliated with a wireline provider [like Sprint or T-Mobile] *often purchase special access services* from the incumbent local exchange carriers against whose wireless affiliates they compete." Fifteenth Wireless Competition Report, *supra* note 42 ¶ 321 (emphasis added).

⁴⁸ Petition to Deny of Sprint Nextel Corporation, Application of AT&T Inc. and Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses and Authorizations, WT Docket No. 11-65, FED. COMM'NS COMM'N 39 (May 31, 2011), <http://apps.fcc.gov/ecfs/document/view?id=7021675883>.

⁴⁹ *Id.*, Declaration of Paul Schieber ¶ 11.

⁵⁰ See, e.g., Letter from Kathleen O'Brien Ham, Vice President, Federal Regulatory, T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 05-25, FED. COMM'NS COMM'N p. 1 (May 6, 2010), available at <http://ecfsdocs.fcc.gov/filings/2010/05/06/6015594059.html> ("in areas where ILECs continue to enjoy a monopoly, backhaul costs remain unreasonably high"); Second Declaration of Simon J. Wilkie, attached to Reply Comments of T-Mobile USA, Inc., WC Docket No. 05-25, FED. COMM'NS COMM'N ¶¶ 25-26 (July 29, 2005), available at <http://apps.fcc.gov/ecfs/document/view?id=6518114876> (noting that "on routes where there is no competition," ILEC special access rates can be "many times higher"); Reply Comments of T-Mobile USA, Inc., WC Docket No. 05-25, FED. COMM'NS COMM'N 13 (July 29, 2005), available at <http://apps.fcc.gov/ecfs/document/view?id=6518114875> (explaining that prices for a special access circuit can be as much as three times lower in areas where incumbent ILECs are subject to competition).

⁵¹ The Commission has said as much. Fifteenth Wireless Competition Report, *supra* note 42, ¶ 322 ("In light of the growing need for backhaul, cost-efficient access to adequate backhaul will be a key factor in promoting robust competition in the wireless marketplace."). Furthermore, the competitive advantage enjoyed by AT&T and Verizon, ILECs each with an affiliate wireless provider, is enormous. See John Blevins, *Death of the Revolution: The Legal War on Competitive Broadband Technologies*, 12 YALE J. L. & TECH. 85, 122 (2010) (explaining that "it is not surprising" that AT&T and Verizon have dominated the wireless market, because special access is a critical input for wireless service and they each have affiliates that provide special access services).

as AT&T or Verizon), it necessarily implicates special access competition because the transaction will reduce the number of special access purchasers in the marketplace and increase the relative market power of incumbents. The resulting entity would be able to simply pay itself for special access, as did the telephone company from the above hypothetical.⁵² If neither merging entity is an ILEC that sells special access, competition is nonetheless affected because it will increase the buying power and leverage of the resulting entity. Thus, special access competition is a necessary consideration whenever there is a merger or transaction between wireless carriers.

C. *The AT&T-T-Mobile Merger Proceeding*

On March 21, 2011, AT&T submitted an application to the FCC announcing its intent to purchase T-Mobile.⁵³ Together, the merged entity would have been one of only three wireless carriers with a nationwide network (the others being Verizon and Sprint).⁵⁴ Because T-Mobile does not have an affiliate LEC that owns substantial network infrastructure, it is one of the largest purchasers of special access. While T-Mobile purchased most of its backhaul capacity from AT&T and Verizon (in the form of special access), it purchased twenty percent from non-incumbent competitive LECs that would have been severely impacted by the loss of business resulting from the merger.⁵⁵ Even more significant is that T-Mobile estimated that *more than half* of its 3G- or 4G-enabled cell sites used backhaul provided by non-ILEC entities.⁵⁶

If the merger had been approved, AT&T would likely have directed T-Mobile to shed its special access contracts (in areas where AT&T provides wireline special access service) as soon as possible and to use AT&T's network for all of its backhaul needs. This would have resulted in lost revenue streams to competitive special access providers

⁵² See *supra* Part I.A.

⁵³ Public Notice, Commission Opens Docket for Proposed Transfer of Control of T-Mobile USA, Inc. and Its Subsidiaries from Deutsche Telekom AG to AT&T Inc., WT Docket No. 11-65, FED. COMM'NS COMM'N 1 (Apr. 14, 2011), available at <http://apps.fcc.gov/ecfs/document/view?id=7021240761>.

⁵⁴ See, e.g., Petition to Deny of COMPTTEL, Applications of AT&T Inc. & Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses and Authorizations, WT Docket No. 11-65, FED. COMM'NS COMM'N 25 (May 31, 2011), available at <http://apps.fcc.gov/ecfs/document/view?id=7021680304> (last visited Feb. 14, 2012). The merger has since been abandoned after being largely disapproved by the FCC and the Department of Justice. See Edward Wyatt & Brian X. Chen, *AT&T Ends \$39 Billion Bid for T-Mobile*, N.Y. TIMES (Dec. 19, 2011), <http://dealbook.nytimes.com/2011/12/19/att-withdraws-39-bid-for-t-mobile>.

⁵⁵ *Id.* (citing Letter to Marlene Dortch, *supra* note 50).

⁵⁶ COMPTTEL Reply, Applications of AT&T Inc. and Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses and Authorizations, WT Docket No. 11-65, FED. COMM'NS COMM'N 8 (June 20, 2011), available at <http://apps.fcc.gov/ecfs/document/view?id=7021688394> (citing Joint Opposition of AT&T, Inc., Deutsche Telekom AG & T-Mobile USA, Inc., Applications of AT&T Inc. and Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses and Authorizations, WT Docket No. 11-65, FED. COMM'NS COMM'N 167 (June 10, 2011) [hereinafter Joint Opposition]).

that rely on T-Mobile's patronage for survival.⁵⁷ While AT&T claimed that T-Mobile was not a significant enough purchaser of backhaul services from these non-ILEC providers to harm market competitiveness,⁵⁸ other commenters—and the Commission itself—disagreed.⁵⁹ Commenters and the Commission were concerned that if the number of available purchasers of special access declined, competitive special access providers would have less incentive to invest in building a network in the first place or upgrading their existing networks.⁶⁰ Ultimately, the deal was unsuccessful, having been opposed by the Department of Justice, and later, the FCC.⁶¹

D. Special Access in Rural Broadband Internet Provision

Special access is also a crucial resource for broadband Internet service providers. Like any telecommunications network, there is a high-capacity segment of the Internet, a backbone, that serves as the central channel by which the network's extremities access the Internet. In this transmission, there is a point at which the Internet backbone must

⁵⁷ *COMPTEL Reply*, *supra* note 55, at 25–26. COMPTEL also notes that competitive special access providers have incurred considerable up-front fixed costs in building out new wired connections to provide T-Mobile's cell sites with backhaul connectivity, which would go to waste post-merger. *Id.* at 28.

⁵⁸ Joint Opposition, *supra* note 55, at 162–63.

⁵⁹ See, e.g., *COMPTEL Reply*, *supra* note 55, at 8–9; Staff Analysis and Findings, WT Docket No. 11-65, FED. COMM'NS COMM'N ¶ 115 (Nov. 29, 2011), available at <http://www.publicknowledge.org/fcc-staff-analysis-and-findings-re-att-mobile> [hereinafter AT&T Findings].

⁶⁰ *COMPTEL Reply*, *supra* note 55, at 9. A possible counterargument is that special-access providers typically build new infrastructure *ad hoc*, and only when there is already positive profit expectation associated with that build-out. That is to say, we don't build roads "just because" and hope destinations pop up; we build roads to reach destinations. Competitive providers will arise commensurate with demand.

However, this argument may only apply to backhaul in urban areas, where the front-end fixed costs of competitive market entry (the cost of building new conduit) are lower and potential revenues are higher (more potential customers per geographic area); but because rural areas are less densely populated and connection points are further apart, demand is unlikely to ever support competitive investment. See Blevins, *supra* note 50, at 100 ("While the special access market can potentially be more competitive in densely populated urban and commercial areas, the potential revenues are too small throughout most of the country to engage in such massive construction projects.").

⁶¹ The Department of Justice ("DOJ") sued to block the merger on August 31, 2011. See Michael J. de la Merced, Jeffrey Cane & Ben Protess, *U.S. Moves to Block AT&T Merger with T-Mobile*, N.Y. TIMES (Aug. 31, 2011), <http://dealbook.nytimes.com/2011/08/31/u-s-moves-to-block-att-merger-with-t-mobile>. Months later, the FCC stepped up alongside the DOJ against the deal, after which AT&T and T-Mobile withdrew their application at the FCC. See Edward Wyatt, *F.C.C. Seeks Review of AT&T Merger with T-Mobile*, N.Y. TIMES (Nov. 22, 2011), <http://www.nytimes.com/2011/11/23/business/media/fcc-seeks-review-of-att-merger-with-t-mobile.html>; Edward Wyatt, *AT&T Merger with T-Mobile Faces Setbacks*, N.Y. TIMES (Nov. 24, 2011), <http://www.nytimes.com/2011/11/25/technology/att-deal-with-t-mobile-takes-a-step-back.html>. On November 30, 2011, the Commission released a report containing its findings on the merger's merits, in which it agreed with the merger's opponents that "the loss of T-Mobile's demand for services from independent backhaul providers could reduce the market for their services and deter additional competitive entry, leading to higher backhaul prices." AT&T Findings, *supra* note 59, ¶ 115. Finally, on December 19, 2012, AT&T and T-Mobile abandoned their merger efforts in the face of insurmountable disapproval by the FCC and the DOJ. See Edward Wyatt & Brian X. Chen, *AT&T Ends \$39 Billion Bid for T-Mobile*, N.Y. TIMES (Dec. 19, 2011), <http://dealbook.nytimes.com/2011/12/19/att-withdraws-39-bid-for-t-mobile>.

connect to the middle mile. In Internet terms, this interconnection point is called the backbone point of presence (“POP”), and the connection from the ISP’s local office to the Internet backbone POP is the backhaul.⁶²

Access to the public Internet requires interconnection with an Internet backbone provider.⁶³ In order to achieve this interconnection, an ISP needs to connect its local office to a backbone operator’s local office, or POP. This is one of the most frequent uses of special access in rural broadband provision. In urban areas, where homes are concentrated and a single conduit can serve many customers, it is economical for the ISP to pay the cost of building new conduit. In rural areas, however, where homes are spread out and the build-out cost per customer is much higher, an ISP will usually purchase special access from the local ILEC, assuming an ILEC serves the area.⁶⁴ This is particularly problematic in rural areas because the nearest Internet POP can be hundreds of miles away. While broadband Internet access may be implemented using special-access circuits (if existing high-capacity circuits reach the target area), there are many areas that are served by lines that carry insufficient bandwidth to provide broadband Internet access services, or are not served at all.⁶⁵

In 2010, the Commission released the National Broadband Plan (“NBP”),⁶⁶ which contained an intensive analysis of broadband Internet deployment in the United States and policy recommendations toward accomplishing widespread, affordable, and high-bandwidth Internet access for all Americans.⁶⁷ In the NBP, the Commission emphasized its goal of ensuring reasonable special access rates.⁶⁸ Despite awareness that special access rates comprised a significant cost of provisioning broadband Internet access to rural communities, the NBP noted that the Commission has been deregulating special-access-type services since

⁶² Bringing Broadband to Rural America: Report on A Rural Broadband Strategy, 2009 WL 1480862, FED. COMM’NS COMM’N ¶ 114 n. 282 (May 22, 2009).

⁶³ See *supra* Part II.A. Without connection to a backbone, which can provide global connectivity, the range of possible connections is limited to other users (or hosts) that are being served by the same ISP.

Given its particular importance, regulators should be concerned about competitiveness in the backbone market. Fortunately, “[t]he Internet backbone or “long-haul” market is generally regarded as moderately competitive, a product of the substantial investment in long-haul fiber-optic networks that occurred in the 1990s.” S. Derek Turner, *Dismantling Digital Deregulation: Toward a National Broadband Strategy*, FREE PRESS, (May 2009), available at http://nochokepoints.org/sites/default/files/resources/Free_Press-May2009-Dismantling_Digital_Deregulation.pdf.

⁶⁴ See *Bringing Broadband to Rural America*, *supra* note 62, ¶¶ 151–52; see also *NRRI Study*, *supra* note 8, at 7. See *Bringing Broadband to Rural America*, *supra*, ¶¶ 33–42 for a general discussion of how the United States built various national infrastructures, including the Internet backbone; see also Mitch Waldrop, *DARPA and the Internet Revolution*, in *DARPA: 50 YEARS OF BRIDGING THE GAP* 83 (2008).

⁶⁵ *Bringing Broadband to Rural America*, *supra* note 61, ¶ 79 n.175.

⁶⁶ NATIONAL BROADBAND PLAN, *supra* note 4.

⁶⁷ *Id.* at xiv.

⁶⁸ *Id.* at 36.

2006 and recommended that it reevaluate its position on special access regulation to effect reasonable pricing.⁶⁹

Because of the high cost of rural deployment, the NBP advocated a universal service program by which the Commission would be able to allocate funds to subsidize it, pushing toward its stated goal of universal American broadband access.⁷⁰ The NBP explicitly noted that

[t]he rules governing special access services also affect the economics of deployment and investment, as middle-mile transmission often represents a significant cost for carriers that need to transport their traffic a significant distance to the Internet backbone. . . . [T]he FCC's review of its special access policies should be completed in concert with other aspects of this reform plan. . . . [T]here is a direct link between whether the FCC's policies . . . [on] special access services are effective and the funding demands that will be placed on the new [universal service plan].⁷¹

Despite this admonition, the FCC implemented universal service in rural broadband, the Connect America Plan, before it completed evaluating its special access policy.⁷² If special access is a crucial input into rural broadband deployment, which it often is, it follows that reasonable special access rates are necessary to avoiding wasteful, monopoly-subsidizing government expenditure. However, the Commission dismissed this concern due to the “urgency of advancing the country’s broadband goals,”⁷³ and postponed related aspects of the universal service plan until its pending special access proceeding was completed.⁷⁴

⁶⁹ *Id.* at 48, 66 n.83. The Commission has deregulated these services using its forbearance authority under 47 U.S.C. § 160(c) (2006). The NBP was not the first to warn against the dangers of premature deregulation, however. See George S. Ford & Lawrence J. Spiwak, *Set It and Forget It? Market Power and the Consequences of Premature Deregulation in Telecommunications Markets*, 1 N.Y.U. J. L. & BUS. 675 (2005).

⁷⁰ NATIONAL BROADBAND PLAN, *supra* note 4, at 140.

⁷¹ *Id.* at 140–48 (emphasis added).

⁷² Report and Order and Further Notice of Proposed Rulemaking, Connect America Fund, WC Docket No. 10-90, FED. COMM’NS COMM’N (Oct. 27, 2011), available at <http://apps.fcc.gov/ecfs/document/view?id=7021749384> (last visited Feb. 14, 2012) [hereinafter CAF FNPRM]. The Commission approved the Plan in October 2011 and began to implement it in April 2012. See FED. COMM’NS COMM’N, FCC LAUNCHES ‘CONNECT AMERICA FUND’ (Apr. 25, 2012), http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0425/DOC-313753A1.pdf. For a detailed exposition of the history and shortcomings of the FCC’s Universal Service Fund, see Rob Frieden, *Killing with Kindness: Fatal Flaws in the \$6.5 Billion Universal Service Funding Mission and What Should Be Done to Narrow the Digital Divide*, 24 CARDOZO ARTS & ENT. L.J. 447 (2006).

⁷³ CAF FNPRM, *supra* note 72, ¶ 860. Although the Commission *did* take special-access revenues into account when determining whether to grant a carrier “additional” support, special access is listed as an example of a “regulated” service. Special access services have been increasingly deregulated since 2006.

⁷⁴ See *infra* Part III.C. See, e.g., CAF FNPRM, *supra* note 72, ¶¶ 860, 928. Most amendments to the Federal Register excluded special access explicitly. *Id.* ¶ 500 (amending § 51.701(a)), 505 (amending § 51.901(b)), 506 (amending definition of “Access Reciprocal Compensation”). However, in assessing the cost of middle-mile deployment, the figure included special access. *Id.* ¶¶ 617–18 (amending § 54.1102).

The consequence of prematurely implementing broadband universal service is unsanctioned public subsidization of private monopoly. In rural areas where the costs of telecommunications provision are high and the returns are low (which created the need for the universal-service subsidy in the first place), there is likely to be only one or very few telecommunications providers. Because special access is necessary to rural broadband Internet deployment, if prices are supra-competitive due to deregulation, the Connect America Plan could subsidize rural ISPs' purchase of special access at inflated rates. Thus, special access providers could profit at monopolistic rates aided by public expenditure. Particularly when broadband deployment to rural areas is so "urgent," it is necessary to stabilize special access pricing in order to minimize the cost to the public and maximize deployment.

III. PRICE CAP REGULATION

Special access rates are, and have been, subject to regulation because of the small number of service providers and the high barriers to entry.⁷⁵ The Commission has used a number of approaches, such as: limiting the profits and total revenue providers can collect; permitting the prices to track inflation, accounting for the reduced costs of providing special access services over time due to economic efficiencies; and most recently, limiting the overall returns that special access providers can collect, but loosening or abandoning the limitations depending on conditions in each market area.

A. Price Caps in the 1990s

Until 1990, the Commission had imposed a regulatory scheme on ILECs that restricted their prices by limiting the profits they were permitted to receive.⁷⁶ In 1991, the FCC moved to a regime based on maximum total revenues instead of profits.⁷⁷ It watched the effects of its 1991 scheme and modified it in 1995, setting price caps based on a measure of inflation (measured by the Price Cap Index, or "PCI"⁷⁸) reduced by an "X-Factor," a variable figure to be adjusted annually, that alters the price caps to account for the fact that LECs may achieve

⁷⁵ When a market is not competitive, and entry into the market is so expensive that competition is unlikely to develop, one solution is to regulate the existing market participants. Regulation of special access is appropriate because the market is highly concentrated (meaning there is a small number of participants) and the barriers to market entry are substantial.

⁷⁶ Special Access NPRM, *supra* note 3, ¶ 9.

⁷⁷ *Id.* ¶ 10.

⁷⁸ The PCI has three basic components: (1) a measure of inflation, *i.e.*, the Gross Domestic Product (chain weighted) Price Index (GDP-PI); (2) a productivity factor or "X-Factor," that represents the amount by which LECs can be expected to outperform economy-wide productivity gains; and (3) adjustments to account for "exogenous" cost changes that are outside the LEC's control and not otherwise reflected in the PCI.

Id. ¶ 30.

economic efficiencies at a rate faster than inflation.⁷⁹ In other words, without the X-Factor, price caps would rise with inflation, but LECs' profits would skyrocket due to reduced costs and economies of scale. The X-Factor kept price caps in line with carrier costs in order to further the Commission's goal of stimulating competition. However, despite these efforts, competitive special access providers did not materialize to the degree expected.

One year after the Telecommunications Act of 1996,⁸⁰ the Commission determined that further change to price regulation of access charges was needed. It hadn't yet met its goal of achieving lower prices by competition alone.⁸¹ Thus was implemented the Price Flexibility Plan, the most recent attempt at appropriate special access regulation.

B. *The Price Flexibility Plan*

After two years of inquiry and deliberation, the Commission adopted the Price Flexibility Plan in 1999.⁸² It granted price cap LECs relief from price regulation if they met certain "triggers" that measured market competitiveness in each Metropolitan Statistical Area ("MSA")⁸³ and carrier investment in infrastructure.⁸⁴ The Commission established the price flexibility model because it believed that a purely time-based approach (such as the X-Factor) would not adequately predict how quickly competition would enter the market.⁸⁵ This plan permitted price cap LECs⁸⁶ to sell special access services at deregulated rates pursuant to two kinds of relief as long as there was sufficient competition in that MSA. Phase I relief allowed price cap LECs (typically ILECs) some downward flexibility with respect to price, and was imposed when the MSA was still relatively concentrated.⁸⁷ Phase

⁷⁹ The X-Factor is an offset that reflects the fact that telephone carriers, historically, have experienced cost changes, due to differences in productivity and input prices relative to the economy as a whole, resulting in telephone rate trends being below the level of inflation. In the LEC Price Cap Order, we [the Commission] determined that the GNP-PI [Gross National Product Price Index] does not fully reflect that the LECs' higher than average growth in productivity had resulted in lower than average telephone prices, relative to inflation. We therefore concluded that an offset must be included in the price cap formula to ensure that rates continued to decline in relation to the GNP-PI.

Price Cap Performance Review for Local Exch. Carriers, 10 FCC Rcd. 8961 ¶ 99 (1995). For a further in-depth chronology of the X-Factor's development, see Special Access NPRM, *supra* note 3, ¶¶ 31-37.

⁸⁰ Pub. L. No. 104-104, 110 Stat. 56 (1996).

⁸¹ Special Access NPRM, *supra* note 3, ¶ 13.

⁸² Access Charge Reform Price Cap Performance Review, 14 FCC Rcd. 14221 ¶ 79 (1999).

⁸³ See 47 C.F.R. § 22.909 (1994).

⁸⁴ Access Charge Reform Price Cap Performance Review, *supra* note 81, ¶¶ 16-18.

⁸⁵ Special Access NPRM, *supra* note 3, ¶ 18.

⁸⁶ "Price cap LEC" is virtually synonymous with ILEC. See 47 C.F.R. § 61.3(bb) (2012) (defining Price Cap Local Exchange Carrier as "[a] local exchange carrier subject to regulation pursuant to §§ 61.41 through 61.49," which grant the FCC discretion to classify LECs as price cap LECs, subject to certain conditions.).

⁸⁷ The price cap rules set both a floor and a ceiling for the price of special access. Phase I price

II relief almost entirely exempted price cap LECs from price regulation, and was intended to be put into effect in markets where special access was competitive enough that normal market forces would drive prices down naturally.⁸⁸

The Commission measured competitiveness of an MSA by “collocation,” which describes the condition when a competitive LEC installs equipment or services in an ILEC’s central office and connects its network to the ILEC’s.⁸⁹ The more collocation in a given MSA, the more competitive the FCC presumed the market to be.⁹⁰ The FCC measured collocation in two ways: “(1) the percentage of wire centers [locations where special access providers can interconnect with the networks of customers] in an MSA that have a collocator; and (2) the percentage of transport revenue generated by wire centers with collocation in the MSA.”⁹¹ While the FCC believed this would be an appropriate means of measuring competition, some commenters thought

flexibility provided relief only from the restrictions on downward price changes. *See* Price Flexibility Suspension Order, *supra* note 7, ¶ 23 (“Phase I relief permits price cap LECs the ability to lower their rates through contract tariffs and volume and term discounts, but requires that they maintain their generally available price cap-constrained tariff rates to protect those customers that lack competitive alternatives.”) (internal quotation marks omitted). The benefit of a ceiling is obvious—setting a limit on the prices that ILECs can charge benefits purchasers and prevents supra-competitive pricing. Less obvious is the benefit of a price floor: though lower prices may appear to benefit purchasers, the Commission was concerned about predatory pricing. Specifically, it worried

that price cap LECs could use Phase I relief . . . to engage in exclusionary pricing behavior and thereby thwart the development of competition. Economists have long noted the incentives that monopolists have to reduce prices in the short run and forgo current profits in order to prevent the entry of rivals or to drive them from the market. The monopolist then would be able to raise prices above competitive levels and earn higher profits than would have been possible if the exclusionary pricing behavior had not occurred.”

Access Charge Reform Price Cap Performance Review, *supra* note 81, ¶ 79.

⁸⁸ Price Flexibility Suspension Order, *supra* note 7, ¶ 23 (“Phase II relief permits price cap LECs to raise or lower their rates throughout an area, unconstrained by the Commission’s . . . rules.”); Special Access NPRM, *supra* note 3, ¶ 17. Economist Dr. Robert Loube and telecommunications specialist Peter Bluhm note in a report by the National Regulatory Research Institute commissioned by the National Association of Regulatory Utility Commissioners (“NARUC”) that the Phase II triggers permit ILECs to sell special access services at prices above the cap limit in certain MSAs. *NRRI Study*, *supra* note 8, at 13. They report that the FCC has granted Phase II regulatory relief for channel terminations in over 100 MSAs and for transport in over 200 MSAs. *Id.* There are only 306 MSAs in the United States. 47 C.F.R. § 22.909(a) (2012).

⁸⁹ *NRRI Study*, *supra* note 8, at 14 (citing *In the Matter of Access Charge Reform*, 14 FCC Rcd. 14221 ¶ 79 (1999) [hereinafter Price Flexibility Order]. *See also* Price Flexibility Order, *supra*, ¶¶ 77–82 (“[Collocation is when a] competitive carrier sets up a physical cage (or an equivalent kind of virtual presence) in an ILEC central office and interconnects its own network to the ILEC network.”). “Cage,” in this sense, refers to the physical separation by a fence or barrier between the ILEC network facilities and the competitive carrier’s onsite at the ILEC central office. Some commentators have argued, however, that collocation measures not competition in *special access*, but in unrelated services and may be an unreliable means of measuring special-access competition. *See infra* note 121.

⁹⁰ To qualify for Phase I price flexibility, a price cap LEC must demonstrate that “competitors had made irreversible, sunk investment” sufficient to deter anticompetitive behavior. Price Flexibility Suspension Order, *supra* note 7, ¶ 24. For Phase II flexibility, the LEC must show that “competitors have established a significant market presence, *i.e.*, that competition for a particular service within the [area] is sufficient to preclude the incumbent from exploiting any monopoly power over a sustained period.” *Id.* ¶ 25.

⁹¹ *NRRI Study*, *supra* note 9, at 14.

it inadequate⁹²—a belief adopted by the FCC in an August 22, 2012 Report and Order.⁹³

Despite that collocation has now been debunked as a measure of competition, the Court of Appeals for the D.C. Circuit had upheld the FCC's use of it in *WorldCom, Inc. v. FCC*.⁹⁴ WorldCom, AT&T, and Time Warner Telecom, among others, sought to invalidate the Commission's price flexibility rules on the ground that they were arbitrary and capricious,⁹⁵ in part for the above reasons.⁹⁶ The Court of Appeals for the D.C. Circuit acknowledged that "collocation [may be] a poor measure of market share" because market *presence* does not imply market *dominance*, and thus may not be sufficient competition to lower prices.⁹⁷ However, it upheld the plan as reasonable because the Commission had determined that collocation was the best measure known to it.⁹⁸

C. The 2005 Price Cap Notice of Proposed Rulemaking

After implementing an interim plan in 2003 to deregulate special access pricing gradually, commensurate with expected competitive growth,⁹⁹ the Commission began to revisit its special access policy. The FCC's inquiry, initiated on January 31, 2005, sought comment on the effectiveness of the price flexibility plan to stimulate competition, the adequacy of the price caps in the wake of the 2003 interim plan, and updated market information.¹⁰⁰ A 2009 Public Notice sought comment specifically on the effectiveness of the Commission's price flexibility rules.¹⁰¹ The Commission's inquiry included: whether the price flexibility rules ensure "just and reasonable rates"; whether the price triggers effectively measure competition by examining sunk-cost investment in collocated facilities; and whether the price cap rules

⁹² See *id.*

⁹³ See Price Flexibility Suspension Order, *supra* note 7; see also *infra* p. 134 (describing the Commission's findings).

⁹⁴ 238 F.3d 449 (D.C. Cir. 2001).

⁹⁵ Under 5 U.S.C. § 706(2)(A) (2006), courts may invalidate an agency action if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."

⁹⁶ See *WorldCom*, 238 F.3d 449.

⁹⁷ *Id.* at 458.

⁹⁸ *Id.* at 459 ("Whatever its faults as a measure of competition, the FCC found collocation to be superior to the various alternatives proposed by petitioners during the notice and comment period. Petitioners, for their part, offer no alternative save a painstaking analysis of market conditions.") (internal citation omitted).

⁹⁹ This was the CALLS plan. CALLS stands for "Coalition for Affordable Local and Long Distance Service." CALLS consisted of AT&T, Bell Atlantic, BellSouth, GTE, SBC, and Sprint, all ILECs. See *In the Matter of Access Charge Reform Price Cap Performance Review for Local Exch. Carriers*, 15 FCC Rcd. 12962, 12964 n.1 (2000). The plan kept special access prices effectively the same through 2005 based on the expectation that competitive LECs would enter the market and reduce the need for price regulation.

¹⁰⁰ *Special Access NPRM*, *supra* note 3.

¹⁰¹ Public Notice, Parties Asked to Comment on Analytical Framework Necessary to Resolve Issues in the Special Access NPRM, Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMM'NS COMM'N (Nov. 5, 2009), available at <http://apps.fcc.gov/ecfs/document/view?id=7020348593>.

ensure just and reasonable rates.¹⁰²

Opponents of price regulation—predictably, the ILECs Verizon, AT&T, and Centurylink (at the time, Qwest¹⁰³)—argued that special access is a robust, competitive industry, the success of which price regulation would threaten by stymieing investment efforts and stunting further competition.¹⁰⁴ Supporters of price regulation naturally took the opposite viewpoint, having found inadequate competition and inflated prices, and demanded immediate action by the Commission.¹⁰⁵ While one might have expected T-Mobile, a large purchaser of special access,¹⁰⁶ to support price regulation, its position was surprisingly tepid. It did not overtly advocate lower prices like the other supporters, but

¹⁰² *Id.* at 2.

¹⁰³ *See supra* note 10.

¹⁰⁴ Qwest suggested that the Commission “sample” a “statistically valid” set of MSAs to evaluate the effectiveness of the price triggers, and attacked the credibility of the ARMIS data. (*See infra* note 127 for an explanation of ARMIS data.) Comments of Qwest Communications International Inc., Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMMC’NS COMM’N 6, 41–46 (Jan. 19, 2010), <http://fjallfoss.fcc.gov/ecfs/document/view.action?id=7020382086>. Qwest doesn’t address the elephant-in-the-room problem of how the Commission should choose markets to serve as samples for the purpose of determining the presence of market power. This would leave the door wide open for further litigation by each side in the current proceeding, arguing that the Commission’s sampling was arbitrary and capricious, if the findings did not cut in the party’s favor.

CenturyLink expanded on this by suggesting that the Commission take into account intermodal competition when determining the relevant market, because special access is used for many purposes. *See* Reply Comments of CenturyLink on Special Access Framework, Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMMC’NS COMM’N 3 (Feb. 24, 2010), <http://fjallfoss.fcc.gov/ecfs/document/view.action?id=7020390878>.

AT&T’s position boiled down to the idea that the market is substantially competitive, and that smaller carriers are simply attempting to use regulation to obtain a necessary service at a lower cost. *See, e.g.*, Reply Comments of AT&T Inc., Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMMC’NS COMM’N 74 (Feb. 24, 2010), <http://fjallfoss.fcc.gov/ecfs/document/view.action?id=7020390697> (“tw telecom’s claims are a naked attempt to hobble some of its largest competitors with onerous regulations and gain access to wholesale Ethernet services from ILECs at below competitive levels.”).

Verizon simply argued that there is substantial competition in special access, its prices have declined since the price flexibility rules were put into place, and that the Commission should deregulate packet-switched services (which includes the public Internet). *See* Comments of Verizon & Verizon Wireless, Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMMC’NS COMM’N (Jan. 19, 2010), <http://fjallfoss.fcc.gov/ecfs/document/view.action?id=7020382063>; Reply Comments of Verizon, Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMMC’NS COMM’N (July 29, 2005), <http://fjallfoss.fcc.gov/ecfs/document/view.action?id=6518138577>.

¹⁰⁵ COMPTTEL, an industry association representing competitive telecommunications carriers, concluded that the special access market is in fact concentrated and that the RBOCs have been actively preventing competitive entry. *See* Comments of COMPTTEL, Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMMC’NS COMM’N (Aug. 8, 2007), <http://fjallfoss.fcc.gov/ecfs/document/view.action?id=6519610334>. For information regarding COMPTTEL’s member companies, *see* COMPTTEL, <http://www.comptel.org/content.asp?contentid=484> (last visited Aug. 14, 2012).

PAETEC, corporate owner of multiple competitive telecommunications providers, concluded in a particularly thorough analysis that the price flexibility rules have not produced just and reasonable rates, and the collocation-based price triggers inadequately measure competition. Comments of PAETEC Holdings, Inc., Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMMC’NS COMM’N (Jan. 19, 2010), <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020382021>. PAETEC proposed a number of specific reforms that may allow the Commission to more accurately gauge competition in each geographic area. *See id.*

¹⁰⁶ *See supra* Part II.C.

merely requested that the Commission reform its data-collection strategy in order to make better judgments.¹⁰⁷

D. *The August 2012 Price Flexibility Suspension Order*

The Commission once again began exploring its special access regulatory policies in June 2012.¹⁰⁸ On August 22nd, the FCC issued a Report and Order¹⁰⁹ that temporarily suspended new price flexibility grants while the Commission establishes a new regulatory regime for special access (the “Price Flexibility Suspension Order” or “August 22nd Order”).¹¹⁰ In the Order, the Commission acknowledged that the existing rules “are not working as predicted” and noted the “widespread agreement that [the price flexibility rules] fail to accurately reflect competition in today’s special access markets.”¹¹¹ In 2005, the Commission had touted collocation in any given MSA as an “administratively simple” and accurate means of evaluating competition and its constraint on special access prices.¹¹² It now realizes that these metrics turned out to be neither accurate nor administratively simple.¹¹³

The FCC also concluded that the MSA fails as a sufficiently granular approximation of a market for the purposes of special access. Although “the record at the time [that the price flexibility rules were promulgated] indicated that MSAs best reflect the scope of competitive entry, and therefore are a logical basis for measuring the extent of competition,” the FCC has concluded that “the scope of competitive

¹⁰⁷ T-Mobile recommended that the FCC redefine the geographical boundaries (because the MSA definitions led to an inaccurate measure of competition), more granularly define the types of special-access services to be regulated, and adopt stricter triggers for price flexibility. Comments of T-Mobile USA, Inc., Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMM’NS COMM’N (Aug. 8, 2007), <http://fjallfoss.fcc.gov/ecfs/document/view.action?id=6519610361>. Two years later, it reformed its position slightly. It again requested more granular FCC evaluation of the special access market areas, and engaged in frank discussion about the problems of special-access regulation. Comments—NPB Public Notice #1 of T-Mobile USA, Inc., Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMM’NS COMM’N (Nov. 4, 2009), <http://fjallfoss.fcc.gov/ecfs/document/view.action?id=7020244691>.

¹⁰⁸ Harold Feld, *The FCC Jump Starts Special Access (Again) and AT&T’s Disingenuous Response*, PUBLIC KNOWLEDGE (June 7, 2012), <http://publicknowledge.org/blog/fcc-jump-starts-special-access-again-and-atts>; Bob Quinn, *Repealing De-Regulation: How Not to Build a Roadmap Towards an All-IP World*, AT&T PUBLIC POLICY BLOG (June 5, 2012), <http://attpublicpolicy.com/broadband-policy/repealing-de-regulation-how-not-to-build-a-roadmap-towards-an-all-ip-world>.

¹⁰⁹ See Price Flexibility Suspension Order, *supra* note 7.

¹¹⁰ The finding does not impugn the D.C. Circuit Court of Appeals’ holding in *WorldCom, Inc. v. FCC*, 238 F.3d 449 (D.C. Cir. 2001). Although collocation has now been determined to be an ineffective means of measuring competition in special access, the Commission’s decision at the time to use collocation as a metric was not arbitrary or capricious because it was a reasonable determination at the time. See *supra* p. 27.

¹¹¹ The Commission noted that its use of collocation as a measure of competition is both under- and over-inclusive. See Price Flexibility Suspension Order, *supra* note 7, ¶ 22 (“[W]e find that the record indicates that the administratively simple competitive showings we adopted in 1999 have not worked as intended, likely resulting in both over- and under- regulation of special access in parts of the country.”).

¹¹² See *id.* ¶ 29.

¹¹³ See *id.* ¶¶ 35–64.

entry has apparently been far smaller than predicted.”¹¹⁴ The Commission added,

the evidence suggests that demand varies significantly within any MSA, with highly concentrated demand in areas far smaller than the MSA. This leads us to conclude that competitive entry is considerably less likely to be profitable and hence is unlikely to occur in areas of low demand throughout an MSA, regardless of whether the MSA also contains areas with demand at sufficient levels to warrant competitive entry.¹¹⁵

Furthermore, the FCC examined evidence demonstrating that competitive entry only occurs in “concentrated areas of high business demand, and [has] not expanded beyond those areas despite the passage of more than a decade since the grant of Phase II relief.”¹¹⁶

Having determined that its measures of competition and market delineation were inadequate, the FCC now plans to amass more data and search for a new metric.¹¹⁷ Insofar as it has announced its intentions, the Commission will conduct an antitrust-style, “robust” market analysis and determine whether there exists a proxy more accurate than collocation.¹¹⁸ The Order did not specify a date at which to expect resolution. It could be years from now.¹¹⁹

IV. ECONOMICS AND COMPETITION IN SPECIAL ACCESS

As illustrated in Part III, the Commission has price-regulated special access for more than two decades, intending to relax the price caps commensurate with the rise of competition. Yet the price of special access and the ILECs’ rates of return have only increased in that time. And prices in Phase II price flexibility areas—where there is supposedly the *most* competition, which should lower prices—are *higher* than in price cap or Phase I price flexibility areas.¹²⁰

There are two possible reasons for such results. The first is that the Commission’s methods of gathering market data and geographic area measurements are flawed and must be reevaluated, as the

¹¹⁴ *Id.* ¶¶ 32–35 (internal quotation marks omitted).

¹¹⁵ *Id.* ¶ 36. *See also id.* ¶¶ 37–47.

¹¹⁶ *Id.* ¶ 48.

¹¹⁷ *Id.* ¶¶ 7, 86.

¹¹⁸ *Id.* ¶¶ 85–86.

¹¹⁹ *See id.* at 88 (dissenting statement of Commissioner Robert McDowell) (“[T]his order purports to be an ‘interim’ change, but, as is often the case with ‘interim’ FCC orders, the Commission neglects to reveal how long this ‘interim’ period will last. Literally, no end is in sight. ‘Interim’ solutions often turn into long-term changes or sometimes even effectively permanent regulations. For example, in 2008, the FCC adopted an ‘interim’ cap on universal service funding for competitive eligible telecommunications carriers with the hope that comprehensive universal service reform would be adopted within months. In reality, however, the ‘interim’ rule change, which I supported, lasted approximately three and a half years, a length of time I never anticipated.”).

¹²⁰ *See infra* Part IV.A.

Commission recently concluded.¹²¹ The second, and possibly more likely reason is that competition may never substantially arise.¹²² An examination of ILECs' financial incentives and past behavior both lead to the conclusion that deregulation, even if sufficient competition *were* to arise, would lead to exactly the same results.

A. Special Access Rates Are Inflated and Cause Economic Harm

According to a study by S. Derek Turner, Research Director at advocacy organization Free Press, one third of the country's 369 MSAs have been granted Phase I relief, and another third have been granted Phase II relief.¹²³ Only *three* of the top one hundred MSAs have not yet received some form of price flexibility relief.¹²⁴ If the Commission's price flexibility plan had worked as intended, special access prices would have been stabilized by an influx of competition. However, the reality is that special access prices in Phase II price flexibility areas are dramatically higher than in Phase I areas or in those subject to normal price cap regulation.¹²⁵ Despite this challenge, the ILECs have not provided evidence that special access rates are reasonable.¹²⁶

Based on the FCC's ARMIS¹²⁷ data, Turner determined that many post-price-flexibility returns exceed 100%, reaching as high as 175%. In total, 70% of the examined RBOC areas exceeded 100% returns.¹²⁸ In the study areas with the top ten special access prices, all exceeded

¹²¹ See *supra* Part III.D. The Ad Hoc Telecommunications Users Committee ("Ad Hoc"), an association of a number of non-ILEC telecommunications providers, some of which are competitive special access providers, had argued that collocation was an inapposite measure of competition because it: (1) measured the number of collocators not necessarily selling special access, but simply operating equipment in the ILEC's office; and (2) provided no means of reevaluating competition after a period of time, which would be crucial if competitors went out of business in the interim. Comments of the Ad Hoc Telecommunications Users Committee, Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMM'NS COMM'N 7 (Jan. 19, 2010), <http://apps.fcc.gov/ecfs/document/view?id=7020382088>.

¹²² The FCC nearly said as much about broadband Internet access in the NATIONAL BROADBAND PLAN, *supra* note 4, at 36 ("Bringing down the cost of entry for facilities-based wireline services may encourage new competitors to enter in a few areas, but it is unlikely to create several new facilities-based entrants competing across broad geographic areas.").

¹²³ Turner, *supra* note 62, at 56.

¹²⁴ *Id.* (citing U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-07-08, FCC NEEDS TO IMPROVE ITS ABILITY TO MONITOR AND DETERMINE THE EXTENT OF COMPETITION IN DEDICATED ACCESS SERVICES 6 n.11 (2006), available at <http://gao.gov/products/GAO-07-80> [hereinafter GAO SPECIAL ACCESS REPORT]).

¹²⁵ GAO SPECIAL ACCESS REPORT, *supra* note 124, at 27 ("[O]ur comparison of prices and revenue across phase I flexibility and phase II flexibility suggests that list prices and revenue are higher on average for circuit components in areas under phase II flexibility . . . than in areas under phase I flexibility or under price caps.").

¹²⁶ See, e.g., Comments of the Ad Hoc Telecommunications Users Committee, Special Access Rates for Price Cap Local Exch. Carriers, WC Docket No. 05-25, FED. COMM'NS COMM'N 3-4 (Jan. 19, 2010), <http://apps.fcc.gov/ecfs/document/view?id=7020382088> ("Despite voluminous record evidence to the contrary, the ILECs, particularly the Bell Operating Companies ("BOCs"), have repeatedly claimed before this Commission that the special access market is fully competitive. But the BOCs have failed to support their claims with factual evidence.").

¹²⁷ ARMIS is an FCC system that automatically collects financial and operational information from the largest telecommunications carriers. See ARMIS Data Descriptions, FED. COMM'NS COMMISSION, <http://transition.fcc.gov/wcb/armis/descriptions.html> (last updated Mar. 8, 2012).

¹²⁸ Turner, *supra* note 62, at 57.

200%—and one area in California even exceeded 700%.¹²⁹ The Commission’s last approved rate of return for price cap carriers was only 11.25%, a rate it set in 1991.¹³⁰ Making matters worse, the RBOCs successfully convinced the Commission in 2008 to abandon the reporting requirement that tracks this data, which continues to frustrate any attempt to track special access rates of return.¹³¹

The consequences of such inflated special access prices may be severe. Stephen Siwek, Principal at Economists Incorporated, estimates that a 50% reduction in special access prices “would result in a \$20–\$22 billion increase in U.S. output, a \$4.4–\$4.8 billion increase in employee earnings, an increase of between 94,000 and 101,000 jobs, and an increase in value added to the U.S. economy of between \$11.8–\$12.4 billion.”¹³² Another study estimates that the FCC’s failure to lower RBOCs’ price caps to competitive levels cost the U.S. economy, from 2007 to 2009 alone, 234,000 jobs and \$66 billion in economic output.¹³³ Particularly given the precarious economic climate characterizing the latter part of the last decade, it is surprising that estimates like these are not sparking increased attention to special access to stimulate economic growth.

The FCC’s price flexibility rules were intended to deregulate areas that enjoy competition; but if its methods of determining whether competition exists are flawed, then false positives may have resulted, causing premature deregulation. This would have caused such an area to revert to an unregulated, concentrated market that was the reason for the regulation in the first place. Arguments that the FCC’s data-gathering methods and market definitions are misleading arose years ago;¹³⁴ the Government Accountability Office (“GAO”) has criticized it

¹²⁹ *Id.* at 58.

¹³⁰ Special Access NPRM, *supra* note 3, ¶ 60.

¹³¹ *Id.* (citing Memorandum Opinion and Order, Petition of Qwest Corporation for Forbearance, 23 FCC Rcd. 18483 (2008) [hereinafter *ARMIS Forbearance Order*]).

¹³² Stephen E. Siwek, *Economic Benefits of Special Access Price Reductions*, ECONOMISTS INC. 3 (2011), www.mediaaccess.org/uploads/EIReport.pdf.

¹³³ Lee L. Selwyn, Susan M. Gately, Helen E. Golding, & Colin B. Weir, *Special Access Overpricing and the U.S. Economy*, ECONOMICS & TECHNOLOGY INC. (Aug. 2007), available at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6519610372>.

¹³⁴ The Phoenix Center for Advanced Legal and Economic Public Policy Studies, a Washington, D.C. non-profit research organization, issued a paper in 2009 criticizing the Commission’s method of acquiring special-access market data and its use of Metropolitan Statistical Areas (MSAs) as relevant markets for determining competitiveness. George S. Ford & Lawrence J. Spiwak, *The Need for Better Analysis of High-Capacity Services*, PHOENIX CENTER FOR ADVANCED LEGAL AND ECON. PUB. POLICY STUDIES (2009), <http://www.phoenix-center.org/pcpp/PCPP35Final.pdf> [hereinafter *Phoenix Better Analysis Paper*]. While the paper’s tone seems to imply that price regulation would be unnecessary if fact collection were properly executed—a policy prescription that the Center expressly advocates in a paper it published the same year, T. Randolph Beard, George S. Ford & Lawrence J. Spiwak, *Market Definition and the Economic Effects of Special Access Price Regulation*, PHOENIX CENTER FOR ADVANCED LEGAL AND ECON. PUB. POLICY STUDIES (2009), <http://www.phoenix-center.org/pcpp/PCPP37Final.pdf> [hereinafter *Market Definition Paper*—its conclusion that the special-access data is misleading may be correct. See *Phoenix Better Analysis Paper, supra*, at 26.

for failing to gather any market data at all.¹³⁵ The GAO also echoed its own earlier warning to the FCC that “the data necessary for FCC to effectively analyze trends in special access competition *were not provided* by incumbents, competitors, and special access customers.”¹³⁶

B. *Special Access May Be a Natural Monopoly*

Telecommunications services such as special access are characterized by high up-front fixed costs and declining average costs that vary depending on population density. At the outset, building a telecommunications network requires a tremendous amount of capital. Provisioning at the middle mile is expensive because endpoints may be very far apart.¹³⁷ But once that connection is established, provisioning in the last mile is typically relatively inexpensive. Particularly if there are many customers within the last mile, a carrier will have incentive to build the expensive middle-mile connection in order to take advantage of the revenues these customers would provide.

If the carrier spreads the cost of provisioning the expensive middle-mile connection across all of the potential customers within that last mile, it follows that as population density increases, average cost decreases. These characteristics and the declining average cost of providing service to each additional customer after building a network have led some to conclude that a telecommunications network is a natural monopoly.¹³⁸ In 2002, the Supreme Court itself acknowledged that local telephone service was thought to be a natural monopoly at the time of the 1984 breakup of AT&T.¹³⁹ However, some have drawn the opposite conclusion.¹⁴⁰

¹³⁵ See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-10-779, TELECOMMUNICATIONS: ENHANCED DATA COLLECTION COULD HELP FCC BETTER MONITOR COMPETITION IN THE WIRELESS INDUSTRY (2010), <http://www.gao.gov/products/GAO-10-779>. In the Report, the GAO stated that “special access may serve as a barrier to entry and growth for some wireless carriers. . . . Without data on these rates, it is difficult to assess the extent to which the special access market creates barriers to entry and growth.” *Id.* at 41.

¹³⁶ *Id.* at 41 n.54 (emphasis added).

¹³⁷ See *supra* Part II.A.

¹³⁸ See, e.g., STUART MINOR BENJAMIN ET AL., TELECOMMUNICATIONS LAW AND POLICY 443–49 (2d ed. 2006). See also Spulber & Yoo, *supra* note 31, at 20, 23 (“Natural monopoly represented one of the central justifications for early regulatory efforts in the 1920s as well as the Communications Act of 1934. Indeed, the entire telephone network was widely regarded as a natural monopoly until the 1960s. Even after the FCC began to promote competition in complementary services, such as telephone handsets and other customer premises equipment, long distance, and information services, policymakers continued to believe that local telephone service remained a natural monopoly. . . . Because local distribution of cable programming required the deployment of a network of wires as extensive as that required to establish local telephone service, regulatory authorities and commentators have also regarded cable television as a natural monopoly.”).

¹³⁹ Verizon Commc'ns, Inc. v. FCC, 535 U.S. 467, 475–76 (2002) (“[T]he persistently monopolistic local markets [were] thought to be the root of natural monopoly in the telecommunications industry.”).

¹⁴⁰ See Spulber & Yoo, *supra* note 31, at 22 n.137 (citing examples of theorists who found telecommunications networks not to be natural monopolies). See also BRETT M. FRISCHMANN, INFRASTRUCTURE: THE SOCIAL VALUE OF SHARED RESOURCES 213–17 (2012) (discussing the literature on the natural-monopoly status of telecommunications services).

A natural monopoly exists when a firm's costs consistently decline as sales increase until total demand is satisfied.¹⁴¹ In such a case, a single provider can satisfy the entire market demand at a lower cost than can two or more providers. Because a single provider can spread these fixed costs among its customers, competitive entry raises each firm's costs (and if the firm passes these costs along to customers, prices) as each attempts to recoup the initial fixed costs in the middle mile. Over time, there will only be one provider in natural monopoly markets, whether as the result of mergers or market exit.¹⁴²

However, if a single provider can serve the entire demand with the least cost, and over time a single provider remains, it will have incentive to behave as any monopolist does and to charge monopoly rent. Thus the quandary: in unregulated natural monopoly markets, if a single provider exists, there is a risk of supra-competitive prices imposed by the monopolist; if many providers exist, there will be higher prices anyway because the per-customer costs of each market participant will be higher than if there were just one provider.¹⁴³

There is a key difference in the economic characteristics of rural and urban areas, however. In rural areas, where average costs and marginal costs are higher, special access provision may be, or at least operate as, a natural monopoly. The first wired connection (the backhaul, in the middle mile) to more remote towns like Iatan, Missouri, which can be many miles from the nearest provider's office, is the most expensive. These initial fixed costs present substantial barriers to entry. A single provider would best be able to serve the entire market demand in Iatan because after the initial connection is made, each other last-mile connection would be considerably cheaper and would offset the cost of the initial backhaul. Any additional providers that entered that market by building an overlapping (and therefore redundant) connection, also called "overbuilding," would only raise average costs for itself and the incumbent firm because the pool of customers that would offset the cost of the backhaul would be halved, all things being equal.

¹⁴¹ See HERBERT HOVENKAMP, *ECONOMICS AND FEDERAL ANTITRUST LAW* 31 (1985).

¹⁴² See *Omega Satellite Products Co. v. City of Indianapolis*, 694 F.2d 119, 126 (7th Cir. 1982) (Posner, J.) ("You can start with a competitive free-for-all—different cable television systems frantically building out their grids and signing up subscribers in an effort to bring down their average costs faster than their rivals—but eventually there will be only a single company, because until a company serves the whole market it will have an incentive to keep expanding in order to lower its average costs. In the interim there may be wasteful duplication of facilities [due to overbuilding, or redundant provision]. This duplication may lead not only to higher prices to cable television subscribers, at least in the short run, but also to higher costs to other users of the public ways, who must compete with the cable television companies for access to them.").

¹⁴³ See HOVENKAMP, *supra* note 131, at 33 ("The problem of natural monopoly is easily stated: if the market is occupied by a single firm, the firm will charge a monopoly price. If it is occupied by multiple firms, even assuming that the firms behave competitively, they will have higher costs and charge higher prices."). The traditional solution to natural monopoly markets has been price regulation. *Id.*

In urban areas, however, where population density is much higher, the cost of providing service to each additional building is relatively small and the number of customers per building is relatively high. Thus the initial fixed costs per customer of building the network are less substantial, lowering barriers to entry because of the lure of greater potential profit.

The problem is complicated because it is difficult to determine whether a market is truly subadditive—meaning that when a firm enters the market, the sum of the costs of all firms participating in the market increases by more than the costs of the newcomer. A market with high barriers to entry may be close to natural monopoly, but it does not reach the point of subadditivity until fixed costs increase beyond expected profitability of would-be market entrants.

And even if it were possible to draw a bright line, the question remains how broadly to define a geographic region for analysis.¹⁴⁴ Assuming natural monopoly markets will never achieve competition sufficient to control prices, if special access behaves like natural monopoly in at least some areas, it follows that as an area becomes more subadditive, the more strictly that area should be price regulated.¹⁴⁵ While an argument could be made that this is precisely what the FCC's price flexibility plan was intended to accomplish, it misses the mark because the plan accommodates the *possibility* that a given MSA could achieve real competition. Rather, the Commission should adopt a plan that excises this flawed assumption.

C. The Price Flexibility Suspension Order Suggests That the Rules Did More Harm than Good

The Commission's realization that its methods of evaluating competition are ineffective and its initiative to uncover a better means to measure competition are praiseworthy.¹⁴⁶ But its recent order, suspending the price flexibility rules on an interim basis but not detailing a plan to fix them, suggests that the price flexibility rules may be more over-inclusive than under-inclusive.¹⁴⁷ Suspending the grant of new price flexibility requests as it did, without any other action, preserves the status quo—which the Commission has determined does not accurately apply price flexibility to market competitiveness.¹⁴⁸

The FCC could have permitted the price flexibility rules to remain

¹⁴⁴ If it were posited that a rural town, for example, was a pure natural monopoly, some calculus would be required to determine whether the neighborhoods, streets, or even houses that comprise the town are also natural monopoly microcosms. The economies change with the scope of observation, depending on how wide a net is cast.

¹⁴⁵ HOVENKAMP, *supra* note 131, at 33 (“The traditional solution to the problem of persistent, natural monopoly is price regulation.”).

¹⁴⁶ See *supra* pp. 134–136 (discussing the August 22, 2012 Price Flexibility Suspension Order); see also Price Flexibility Suspension Order, *supra* note 7.

¹⁴⁷ See *id.* ¶ 22 (stating that the price flexibility rules are both over- and under-inclusive).

¹⁴⁸ See *id.*

in place while it considers a more effective scheme, but it did not. In the Commission's view, then, the public must benefit more by the suspension of the rules than their continuance, or else suspending the rules would have betrayed the agency's public interest mandate.¹⁴⁹ It must follow, then, that continuing to grant additional price flexibility petitions would fail to serve the public interest in the aggregate.¹⁵⁰

The Commission had at least two options when issuing the August 22nd Order: it either could have continued granting price flexibility petitions, or discontinued granting them, until it finds a better means to measure competition. The Commission's ultimate decision to discontinue granting price flexibility petitions lends itself to the conclusion that, taken as a whole, the price flexibility rules may harm the public more than they benefit it—and that deregulation of special access prices enables providers to reap monopoly profits to a greater degree than failing to deregulate prevents competitive entrants from recouping their costs.

There are other avenues available to the Commission in this interim period that would mitigate the harms caused by the failure of the price flexibility rules to properly deregulate only where competition has arisen. The Price Flexibility Suspension Order preserves the status quo; and in doing so, it preserves the harm caused by over- or under-extension of price flexibility. In the intervening years until the Commission discovers a better metric than collocation and a better market approximation than the MSA, the Commission should be *mitigating* the harm it has done—not merely declining to aggravate it.

One way it could do this is by returning to price-cap regulation in the interim period rather than simply freezing the status quo. Although price caps may not be an optimal long-term solution, doing so would certainly limit the harm to businesses and consumers by imposing cost-independent price caps on ILECs.¹⁵¹ It would also account for some of

¹⁴⁹ See, e.g., 47 U.S.C. §§ 157, 160–61, 201, 251, 254 (2006); *WOKO, Inc. v. FCC*, 109 F.2d 665, 667–68 (D.C. Cir. 1939) (“The underlying policy of the Communications Act is the securing and protection of the public interest. . . . [T]herefore, in order that a person, who challenges a decision of the Communications Commission . . . may succeed, he must show that the Commission's action of which he complains is contrary to the public interest, convenience, or necessity.”).

¹⁵⁰ See, e.g., 47 U.S.C. § 160 (“[T]he Commission shall forbear from applying any regulation or any provision of this chapter to a telecommunications carrier or telecommunications service, or class of telecommunications carriers or telecommunications services, in any or some of its or their geographic markets, if the Commission determines that . . . (3) forbearance from applying such provision or regulation is consistent with the public interest.”).

¹⁵¹ *Id.* ¶¶ 9–10 (“[I]n 1991 the Commission implemented a system of price cap regulation that altered the manner in which the largest incumbent LECs . . . established their interstate access charges. The Commission's price cap plan for LECs was intended to avoid the perverse incentives of rate-of-return regulation in part by divorcing the annual rate adjustments from the cost performance of each individual LEC, and provide for sharing efficiency gains with customers in part by adjusting the cap based on industry productivity experience. . . . In contrast to rate-of-return regulation, which focuses on an incumbent LEC's costs and fixes the profits an incumbent LEC may earn based on those costs, price cap regulation focuses primarily on the prices that an incumbent LEC may charge.”).

the natural-monopoly properties of special access and limit the harms of the Commission's over-inclusive deregulation. Any plan that mitigates, rather than preserves, consumer harm is preferable until the Commission discovers and implements a better measurement of competition.

D. Incentives and Behavior as Justifications for Geographic and Structural Separation

The price regulation that the FCC has implemented has always been with an eye to the future. It hopes that if it limits the prices that ILECs can charge for special access, competition will eventually arise and lower prices, obviating the need for any regulation.¹⁵² However, if special access behaves as a natural monopoly in many parts of the country, such competition will never arise, and the price flexibility rules merely allow ILECs to collect monopoly rents in areas not actually subject to competition. Even if competition were to arise, self-interest dictates that competing companies would either merge or divide the market, so that *both* could benefit from the supra-competitive pricing that is characteristic of monopolies.

And in fact, this is what telecommunications companies have been doing. It is no coincidence that after the 1984 breakup of AT&T into a long-distance carrier and seven RBOCs, within twenty years the children of "Ma Bell" merged into only a handful of companies.¹⁵³ It is no coincidence that the remaining few maintained their own regional monopolies instead of invading their competitors'.¹⁵⁴ And finally, it is no coincidence that Comcast and Verizon recently agreed to promote,

¹⁵² See Price Flexibility Suspension Order, *supra* note 7, ¶ 3 ("We continue to strongly believe . . . that regulation should be reduced wherever evidence demonstrates that actual or potential competition is acting as a constraint to ensure just and reasonable rates, terms and conditions for special access services.").

¹⁵³ In 1984, right after the Bell divestiture, there were seven RHCs There were also two large ILECs not associated with the former Bell System By 2001, only four large local exchange carriers remained. That change in number reflected the merging of [four carriers] into SBC Communications, and the merging of [three carriers] into Verizon Communications. Perhaps more strikingly, by the end of 2005 both AT&T and MCI no longer existed as independent firms. SBC merged with AT&T (and took its name) and Verizon merged with MCI.

BENJAMIN ET AL., *supra* note 138, at 1056. AT&T was sometimes known as "Ma Bell" prior to the 1984 breakup as an expression of AT&T's supremacy over telephone services due to its regulated monopoly status and pervasive influence.

¹⁵⁴ This is evidenced by the virtual absence of competition in the broadband Internet service industry. (The ILECs AT&T and Verizon, for example, provide broadband Internet services that compete with cable companies such as Comcast and Time Warner Cable.) The FCC reported in the National Broadband Plan that 96 percent of Americans only have one or two choices for broadband Internet access. NATIONAL BROADBAND PLAN, *supra* note 4, at 37 ("Given that approximately 96% of the population has at most two wireline providers, there are reasons to be concerned about wireline broadband competition in the United States. Whether sufficient competition exists is unclear and, even if such competition presently exists, it is surely fragile."). The Commission also noted that "[i]n general, broadband subscribers appear to have benefited from the presence of multiple providers . . . but the data available only provide limited evidence of price competition among providers." *Id.*

rather than compete with, each other's services.¹⁵⁵ To a natural-monopoly provider, the most profitable course of action when facing competitors is to merge or divide—never to overlap coverage and legitimately compete.

Whether consumers are better served by robust competition that lowers prices, or by the existence of a few quasi-regulated monopolist firms is a more difficult question than it appears to be. Both scenarios could be inefficient. In a theoretical market of perfect competition, the inefficiency is derived from the high barriers to entry and cost structure of the telecommunications industry. If there were a few monopolists, while each arguably would have incentives to raise prices and not to invest in infrastructure or innovate, they would be more able to do so than firms in a competitive market.¹⁵⁶ This dual problem indicates that a hybrid approach, perhaps wherein each geographic area is limited to one strictly regulated and monitored provider, may be more socially efficient.¹⁵⁷

Professor John Blevins suggested such a plan of structural and geographic separation, under which special access providers would be required to sever ties with their ILEC principals and divide market areas.¹⁵⁸ Blevins argued that this would be an effective solution for three main reasons: first, past structural remedies have succeeded; second, it would remove the incentives of providers to drive competitors

¹⁵⁵ Neil Smit, *Comcast, Time Warner Cable, Bright House Networks and Verizon Wireless Enter into New Agreements*, COMCAST CABLE (Dec. 2, 2011), <http://blog.comcast.com/2011/12/comcast-time-warner-cable-bright-house-networks-and-verizon-wireless-enter-into-new-agreements.html>. The plan has been criticized by many, including some well known policy experts. See Timothy B. Lee, *Witnesses Warn Verizon-Comcast Deal Will Damage Competition*, ARS TECHNICA (Mar. 21, 2012, 8:20 PM), <http://arstechnica.com/tech-policy/2012/03/witnesses-warn-verizon-comcast-deal-will-damage-competition>. The two companies recently reached a settlement with the Department of Justice, which allowed the competing firms to cooperate in this manner. See Jon Brodtkin, *US DOJ Just Barely Preserves Competition Between Verizon FiOS, Cable*, ARS TECHNICA (Aug. 16, 2012, 1:35 PM), <http://arstechnica.com/tech-policy/2012/08/us-doj-just-barely-preserves-competition-between-verizon-fios-cable>.

¹⁵⁶ These incentives exist because customers cannot switch to an alternative provider if they find the monopolist's offerings inadequate. Therefore, they must put up with the provider's high prices or low quality of service, or they must simply go without service. In a system of perfect information, a monopolist will raise prices until it reaches the exact point after which total revenue will decrease. Similarly, because no other firms offer better service, a monopolist will underinvest in improving its infrastructure until its customers would prefer not to buy.

¹⁵⁷ Of course, heavy regulation may present its own problems in the form of taxpayer expense to monitor the provider, assuming a government agency would be competent to monitor such an enormous entity effectively.

¹⁵⁸ Professor Blevins suggested a substantial overhaul of wireline special access providers and their downstream affiliates:

[W]e should begin at least debating more aggressive structural remedies. These remedies could take multiple forms, but some of the most obvious ones would include: (1) prohibiting wireless/wireline affiliations; (2) prohibiting entities with special access infrastructure from entering the retail wireless market; (3) structural, or at least functional, separations between wholesale broadband access providers and retail Internet service providers (coupled with prohibitions on exclusivity agreements); (4) breaking up the AT&T and Verizon wireline divisions in a manner similar to the original breakup of AT&T.

Blevins, *supra* note 51, at 141.

out of business; and third, creating smaller entities would lower administrative costs of monitoring and regulating.¹⁵⁹

Though it may be idealistic to expect the Commission to follow a plan like this—as Professor Blevins admits¹⁶⁰—it may be the ideal approach. In order to guarantee lower prices of special access, the most efficient outcome is achieved by dividing the telecommunications market up geographically and by the type of services in which each company specializes, and guarantee each regional LEC a monopoly over a given area. In exchange, the Commission would require each to limit its prices or profits—as it did until 1990¹⁶¹—and to interconnect with all other carriers. This would establish many discrete, integrated networks across the country, guarantee each firm a given profit, and guarantee low prices for consumers.

CONCLUSION

Special access is marked by uncertainty. The technology, the economics, and the regulatory history are extremely intricate, and at times, vague. Yet it is a crucial component of most modern telecommunications networks that has a far-reaching impact on businesses and consumers alike. It suffers from market concentration and problematic, untimely deregulation. The Commission has tried, in several iterations, to jumpstart competition in the industry to repair the problems caused by the economics of special access, but to no avail. Its own wave of deregulation has impeded its responsibility to ensure that special access be provided at reasonable rates. This premature deregulation will continue to harm consumers, particularly as the Commission remains focused on subsidizing rural broadband provision.

While last generation's technology consisted of single-purpose devices like radios, TVs, and telephones, today we expect a full menu of services from every device. Our televisions announce who's calling on our VOIP phone lines;¹⁶² our cell phones surf the web and communicate with computers over the Internet through apps; GPS devices can play FM radio. And when it comes to the Internet, every device communicates using the exact same protocol.¹⁶³ It does not matter in the least whether a computer is "talking" to another computer, a phone, or a television, for the purposes of the message's comprehension. Earl Comstock, ex-CEO of COMPTTEL, agreed:

¹⁵⁹ *Id.* at 141–43.

¹⁶⁰ *See id.* at 141 ("For this reason, the ultimate solution may require structural remedies that would essentially break up the industry into relatively smaller entities. Although these remedies would arguably be the most effective, they are also the most politically unrealistic.")

¹⁶¹ *See supra* Part III.

¹⁶² VOIP stands for "Voice over Internet Protocol." It is a voice communication service that employs a device connected to a data network such as the Internet. In contrast, telephone service uses a traditional switched network.

¹⁶³ Protocols such as TCP/IP are methods of encoding data to be transmitted on a network in order to be properly "understood" by the other party.

The Internet, as opposed to Internet applications, is nothing more than the next-generation telephone network. It's physical infrastructure, it's transmission; the whole TCP/IP stack is nothing more and nothing less than about getting your information from point A to point B without screwing it up. That is the *definition* of telecommunications.¹⁶⁴

Therefore, if telecommunications carriers and cable operators provide mere end-to-end services, then, as our technologies converge, all of these market participants ought to be subject to the same regulations. Distinctions based on speed or conduit-owners' identities are arbitrary and meaningless. So *if* we are to regulate the telecommunications industry, we should regulate all players identically.

And regulate them we should. Despite its best efforts, the FCC has been unable to effect lasting competition in cable, telephone, or Internet provision—the industries most dependent on telecommunications infrastructure. The Commission's pattern of deregulating crucial inputs into these industries has not produced the competition that it intended to generate, and the agency has waited too long after its initial 2005 inquiry to expediently adjust to the market. It has been seven years since the FCC first asked how best to regulate special access—how much longer must the nation wait for resolution?

*Cary E. Adickman**

¹⁶⁴ Telephone Interview with Earl Comstock, ex-CEO, COMPTTEL (Nov. 18, 2011).

* *Senior Articles Editor*, CARDOZO ARTS & ENT. L.J. Vol. 31; J.D. candidate, Benjamin N. Cardozo School of Law (2013); B.A., Washington University in Saint Louis (2007). Many people contributed to this Note, without any one of whom it would not have been possible. Thanks to Professors Susan P. Crawford and Brett M. Frischmann for their direction, wisdom and support; to Earl Comstock and M. Christopher Riley, who very generously lent their time and expertise; and to Eric Null, Nathan M. Davis, and the 2012 editors of the Cardozo Arts & Entertainment Law Journal for their tremendous guidance and leadership. Finally, I wish to thank Sarah L. Farhadian for her constant love, support, and inspiration, and my loving parents, Joan and Marty, for always believing in me and for their infinite encouragement in everything I do. © 2012 Cary E. Adickman.