REVISITING US BROADBAND POLICY

How reregulation of wholesale services will encourage investment and stimulate competition and innovation in enterprise broadband markets

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Executive Summary

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For decades, the US was a world leader in opening up telecommunications markets to competition and investment. Starting in the 1960s and culminating in the passage of the *Telecommunications Act of 1996* ("TA96"), US regulators adopted measures that not only eliminated legal barriers to entry, but sought to affirmatively facilitate the introduction and development of competition across all telecom sectors. The common thread and theme underlying all of these measures – FCC orders requiring premises equipment and long distance network interconnections, the seminal break-up of AT&T and the Bell System in 1984, and ultimately the 1996 legislation – was the imposition of rules *mandating that incumbent local carriers open their networks to rival providers on a nondiscriminatory basis so as to enable and facilitate competitive entry*. Under this regime, regulation of competitor access to incumbent networks was acknowledged to be an *engine* of competition, catalyzing entry, investment, and innovation.

Several years after TA96, the regional Bell operating companies and other US ILECs began to push back on the FCC's competitive framework and the expansion of competitors under that regime. To garner support for their attack on competition, the ILECs promoted the myth that competitors did not need wholesale access in order to serve business customers and that investment by ILECs and CLECs would be greater if competitors were "forced" to build their own facilities. The ILECs also claimed, based upon the existence of sporadic CLEC facilities in portions of some metropolitan areas, that competition throughout those areas either existed or was feasible. The FCC, under the Bush administration, accepted the myths about competition and investment, and based much of its policy agenda upon these contentions.

But as the decade went on, the evidence became more and more compelling that price-constraining competition had not developed and that, under deregulation, ILEC prices and profits were rising to supracompetitive levels. Without cost-based wholesale inputs, competitors had more difficulty serving enterprise customers' multi-location requirements, CLEC revenues dropped, and CLECs became less – not more – able to attract capital to support investment in their own facilities. At the same time, and because deregulation actually weakened CLECs as competitors in the business market, it removed the competitive challenge that had previously forced ILECs to make major investments in their own broadband facilities. Data available through 2007 (when FCC deregulation permitted large ILECs to discontinue filing this information) shows a significant drop-off in ILEC network investments under the FCC's deregulatory regime.

A new US administration took over just one year ago, and with it, a new FCC. Under its new leadership, the FCC is in the process of reevaluating the policies that have led to higher special access prices and that have constrained competitors to a marginal presence in the business market. As part of this process, the FCC has committed to moving forward in its review of the decade-old special access Pricing Flexibility Rules, and will need to confront the extensive evidence – including major studies from the federal Government Accountability Office and National Regulatory Research Institute – that show the negative effects of those rules upon facilities deployment by competitors and upon prices of the ILECs' *de facto* monopoly services.

The evidence we review here – much of which has been presented to the FCC by a wide variety of parties (including state regulators, independent wireless providers, CLECs, and "think tanks" such as the Harvard University Berkman Center for Internet and Security) – provides a compelling record for reregulating ILEC broadband access facilities.[1] The evidence also shows that a return to a regulatory regime that encourages competition through assured competitor wholesale access to essential ILEC facilities and services will result in increased investment by entrants and incumbents alike. This evidence – along with its express commitments to principles of open access and the reinvigoration of broadband investment – should necessarily lead the FCC to replace the failed deregulatory regime of the prior administration. By restoring regulatory requirements that ensure competitor access to reasonably priced wholesale broadband facilities, the FCC has the opportunity to put the US back on track to its former leadership role in broadband investment, competition, and innovation.

1. This report was prepared by Dr. Lee L. Selwyn, President of ETI, Susan M. Gately, Senior Vice President, Helen E. Golding, Vice President, and Colin B. Weir, Senior Consultant. The views expressed in this report are those of the authors.

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1 THE MYTH CONNECTING DEREGULATION AND BROADBAND INVESTMENT

Looking back and righting the failed US experiment with deregulation as a means to expand infrastructure investment and competition.

Efforts to introduce competition in the US telecommunications industry can be traced back to the late 1960s, when the FCC initiated regulatory actions aimed at removing several legal barriers to the interconnection of non-telco premises equipment (e.g., handsets, private branch exchange (PBX) systems, and modems) and non-telco long distance transport facilities (e.g., private microwave, "specialized" common carrier networks) to the public telephone network. In a series of market-opening initiatives, US regulators, state and federal legislatures, and the federal courts adopted affirmative measures that not only eliminated legal barriers to entry, but sought to affirmatively facilitate the introduction and development of competition across all telecom sectors. The common thread and theme underlying all of these measures – FCC orders requiring premises equipment and long distance network interconnections, the seminal break-up of AT&T and the Bell System in 1984, and ultimately the *Telecommunications Act of 1996* ("TA96") – was the imposition of rules *mandating that incumbent local carriers open their networks to their competitors so as to enable and facilitate their entry*.[2] Regulation of competitor access to incumbent networks was thus seen as an *engine* of competition, catalyzing entry, investment, and innovation.

TA96 – with its assurances of competitive access to wholesale ILEC facilities at prices based upon long run incremental costs – prompted a period of unprecedented competitive market entry and capital investment in telecom plant and equipment both by US ILECs and by US competitive telecommunications service providers ("TSPs"). Resisting persistent efforts by incumbents to be relieved of these regulatory obligations, the FCC and state regulatory commissions strictly enforced and implemented the rules and regulations as required by the *1996 Act*. These market-opening regulations spurred the most competitive market entry and the largest competitive capital investments in US telecom history.

2. The TA96 framework established three separate, but not mutually exclusive, entry paths by which a CLEC could serve a local market: facilities-based entry, unbundled network elements, and total service resale. The 1996 Act also contained provisions intended to safeguard the quality of wholesale service, prevent discrimination by ILECs in favor of their own competitive services and affiliates, and encourage the deployment of advanced services.

Despite RBOC claims that the regulations imposed by the *1996 Act* were onerous, induced uneconomic market entry, and provided an extreme *disincentive* for incumbents to make capital investments, the period of regulatory enforcement immediately following the legislation was a high point for the Regional Bells ("RBOCs") as well. In the six-year period between 1996 and 2001, the RBOCs invested some $150-billion in their networks, and publicly traded competitive TSPs invested some $160-billion in their competitive ventures. At the same time that competitive TSP market valuations reached nearly $430-billion, the four RBOCs achieved their maximum stock market valuations, peaking at over $500-billion. ILECs made massive capital investments in spite of the regulatory environment. The companies that now comprise Verizon[3] had invested some $56.6-billion in new Telephone Plant in Service ("TPIS") over the period 1996-2001, while the predecessor ILEC companies of AT&T Inc.[4] invested a combined $73.7-billion over that same time frame. Nothing indicates that the comprehensive regulation of wholesale services immediately following enactment of the 1996 legislation acted to deter ILEC investments or discourage investors from purchasing RBOC stock.

Within a few years, however, the regional Bell operating companies and other US ILECs began to push back on the FCC's competitive framework and the expansion of competitors under that regime. The ILECs insisted that the requirement to "share" their network facilities with competitors created a disincentive to ILEC investment, and told the FCC that if the CLECs were serious about competing, they should be required to build their own facilities. According to the ILECs, this would result in more overall investment by both ILECs and CLECs. The ILECs also insisted that special access services – used to connect businesses customers to both ILEC and CLEC networks – were now highly competitive, particularly in larger metropolitan areas. In 1999, the FCC adopted its Pricing Flexibility Rules, under which ILECs obtained partial and eventually full deregulation for their special access prices in urban areas nationwide.

The FCC during the Bush administration seemed to have been convinced by the ILECs' contentions and, as a result, had based much of its policy agenda upon a mistaken conviction that deregulation would lead to more competition and more investment. But as the decade went on, the evidence became more and more compelling that this expectation was not consonant with the reality that was taking place. Other deregulatory initiatives adopted by the FCC during that time and founded upon this same basic premise included:

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3. Verizon was created by a merger of Bell Atlantic and GTE in 2000; Bell Atlantic had previously merged with NYNEX in 1997.

4. The company now known as AT&T Inc. was formerly SBC Communications, one of the original seven RBOCs. SBC merged with Pacific Telesis in 1997, with Ameritech in 1999, and with the Southern New England Telephone Company (SNET) in 1998. SBC merged with AT&T Corp. In 2005 and adopted the AT&T name. AT&T Inc. then merged with BellSouth in 2007. The $73.7-billion investment figure for 1996-2001 does *not* include investments made by AT&T Corp., which was not an RBOC during that period.

- withdrawal of mandated availability of several key "unbundled network elements," ("UNEs") including the "unbundled network element platform" ("UNE-P") – the primary driver of (pre-merger) AT&T Corp's and MCI's residential/small business local competition model;

- elimination of "line sharing," by which third-party providers of residential/small business ADSL could obtain access to the DSL channel derived from exchange access lines being provided to ILEC residential and small business customers;

- Forbearance from regulation of most broadband services;

- Reclassification of Internet access as an "information service" rather than a telecommunications service, subject to traditional common carrier regulation.

In addition, the FCC agreed to forbear from requiring AT&T and Verizon to file detailed financial and operations reports that, among other things, had disclosed their excessive earnings on special access services.

These deregulatory moves were rationalized on the basis of an overly optimistic vision – that effective competition for the incumbents' last-mile services had already developed to the point where mandated wholesale access was no longer necessary to assure their availability to competitive carriers – rather than on the reality that a pervasive monopoly still existed for the vast majority of last-mile services. Because that premise was seriously wrong, the outcome of the FCC's withdrawal of regulatory mandates and price constraints on wholesale services has been to dismantle competition, to create increased market concentration and vertical integration,[5] and a large-scale cutback in investment both by ILECs and competitive carriers alike. We discuss this evidence in more detail later in this chapter and in Chapters 2.

Today, after nearly a decade on this deregulatory course, the FCC is confronted with mounting evidence that this approach has failed to yield either competition or investment. The new FCC is looking at this evidence and considering, in the context of its various proceedings on broadband and special access, how to put the US telecommunications industry back on a pro-competitive, pro-investment course. The FCC has reactivated its proceeding to examine the effects of pricing flexibility on special access prices and competition for business services for which special access is a critical input. The FCC will necessarily be reviewing the many studies – including reports by the US Government Accountability Office and the National Regulatory Research Institute (an affiliate of the National Association of Regulatory Utility Commissioners) – that provide evidence that cannot be squared with the rosy picture the large ILECs have painted about competitive conditions and competitor facilities.

5. The withdrawal of the two largest competitive carriers – AT&T Corp. and MCI – from the local and long distance markets and their respective mergers into the two largest incumbent carriers – SBC and Verizon – transformed the competitive landscape. Around the same time, many smaller CLECs also succumbed to the FCC's competition-unfriendly policies.

As the "threat" of non-facilities based or hybrid facilities/non-facilities based competition has waned, US ILECs have generally maintained and in some cases even scaled back their overall investment level.

There has been no dramatic jump in RBOC investment since deregulatory concessions have been implemented by the FCC.[6] Indeed, the level of investment that the RBOCs committed to and spent in this latter period is neither extraordinary nor particularly risky. The Bell broadband investments of recent years represent modest steps in their networks' ongoing evolution. As to the remaining publicly traded US CLECs, investments since the onset of the FCC's deregulatory period are also far lower than they had been during the first six years following passage of the 1996 Act, when wholesale rates and access were regulated.

The evidence confirms why "commitments" to change investment behavior in exchange for deregulation must be viewed with skepticism. Like any business, ILECs and CLECs will invest in new technologies (in this case rolling out broadband) only where there is business case to support such an investment – i.e., increased revenue opportunities, response to competition, and/or improved operational efficiencies. Major RBOC broadband investments have mainly focused upon residential markets, where the RBOCs faced a growing cable presence, and even residential investment initiatives

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6. Even earlier, the RBOCs employed the same tactic of promising broadband investment to obtain broader pricing flexibility under state price cap regulation plans. For example, in 1992 Verizon (then Bell Atlantic or "BA-NJ") proposed an accelerated network modernization program entitled *Opportunity New Jersey* ("ONJ") as an integral part of a 5-year plan for alternative regulation. [*See, Application of New Jersey Bell Telephone Company for Approval of its Plan for an Alternative Form of Regulation*, New Jersey BPU Docket No. TO92030358, *Decision and Order*, May 6, 1993 at 1; 73-75, 87-98.] Under the terms of the ONJ plan, BA-NJ committed to accelerate its planned deployment of advanced network technologies and services, in exchange for the adoption of its proposed alternative form of regulation. While BA-NJ reaped significant financial benefits from the ONJ plan it did not reinvest those returns in its infrastructure, BA-NJ actually *disinvested* some $76-million between 1993 and 1995. [See, Economics and Technology, Inc., *A New Opportunity: Cost Based Pricing of Bell Atlantic–New Jersey Access Services*, March 1999, at 6.] In 1997, the New Jersey Ratepayer Advocate reported that BA-NJ actually invested $545-million less in New Jersey than the level that had been forecasted under the ONJ, and in capital-dollar terms, overall capital expenditures had *decreased* under ONJ. [*The Board's Inquiry into Bell Atlantic–New Jersey, Inc.'s Progress and Compliance with Opportunity New Jersey, its Network Modernization Program*, NJ BPU Docket No. TX96100707, *Order Approving Stipulation*, June 10, 1997, at 5, citing Division of Ratepayer Advocate Brief, at 15-16.] Several other jurisdictions also documented the US Bell companies' failure to live up to their capital investment promises. In 2002, the Pennsylvania Public Utility Commission found that Verizon had not fulfilled commitments it had made there [*Re: Verizon Pennsylvania, Inc., Petition and Plan for Alternative Form of Regulation Under Chapter 30; 2000 Biennial Update to Network Modernization Plan*, P-00930715, *Order*, March 28, 2002] In 1999, the Indiana Utility Regulatory Commission concluded that Ameritech (now part of AT&T) had reneged on an infrastructure investment commitment made in connection with the 1994 "Opportunity Indiana" price cap regulation program. [*Petition of Indiana Bell Telephone Company, Incorporated d/b/a Ameritech Indiana, for the Commission to Decline to Exercise in Whole or in Part its Jurisdiction Over, and to Utilize Alternative Regulatory Procedures for, Ameritech's Provision of Retail and Carrier Access Services Pursuant to I.C. 8-1-2.6 et. seq.*, Indiana Utility Regulatory Commission Cause No. 40849, Approved April 28, 1999, at 2. In 2004, after reviewing Qwest's compliance with capital expenditure commitments that had been made as part of a regulatory barging, the New Mexico Public Regulation Commission concluded that Qwest's level of investment was "significantly below its obligation." [New Mexico Public Regulation Commission Media Release, "Public Regulation Commission Orders Qwest to Invest," March 8, 2005, available at: http://www.nmprc.state.nm.us/pdf/qwestafor.pdf]

have been geographically targeted in urban and suburban areas, certainly not uniformly across the RBOCs' operating areas. The ILECs lacked any similar ubiquitous competitor to spur their expansion of infrastructure to serve their business customers.

As the data below demonstrate, recent years' RBOC wireline network investments have actually been less than in the past, and the investments that they are making are more evolutionary than revolutionary – there is no evidence of any extraordinary investment programs spurred on by the broad regulatory relief that the RBOCs have been granted. In fact, as the data reveal, capital investment by the RBOCs in the US has slowed as regulation has decreased.

Although there has been extensive press coverage of Verizon's *FiOS*, and AT&T's *U-verse* rollouts, actual investment is unimpressive. The RBOCs today are only investing about half as much in their networks as the were at the start of this decade. Figure 1 demonstrates this. Looking back over the period from 1996 through the end of 2007 (the most recent year for which financial data is available), RBOC capital investments peaked in the 2000-2001 time frame at approximately $30-billion per year, and dropped off significantly after that. Total capital investments made during 2006 and 2007 was almost half of that amount – approximately $17.5-billion per year.

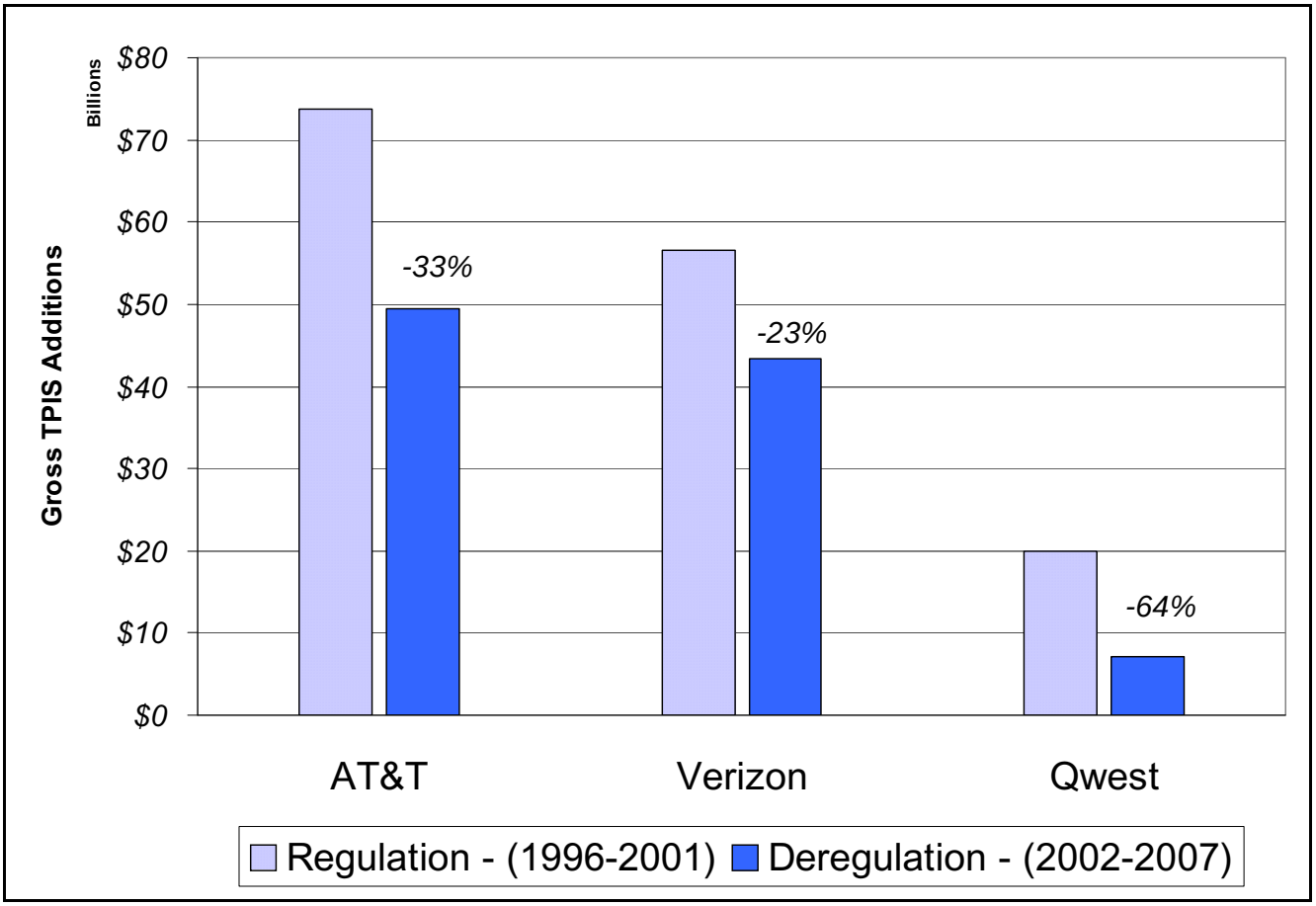

Figure 1. US Regional Bell ILEC capital expenditures (Gross Plant Additions) were greater during the first six years following TA96 while wholesale rate regulation remained in effect, than in the 2002-2007 period when many regulatory constraints and mandates regarding ILEC wholesale services were relaxed or removed.

Figure 2 provides gross ILEC and CLEC investment on an annual basis from 1996 through 2007. The persistent downward trend confirms that the FCC's deregulatory policies – which were supposed to stimulate additional competitive investment – had precisely the opposite effect. The consequent reduced level of competitive activity then enabled the ILECs to scale back on their own investment programs.

In fact, as shown in Figure 3 below, in each of the years since 2001, the largest local carriers in the US have *disinvested* in their networks – with the result that the net book value of plant in place at the end of 2007 is *less* than it was in 2001, and even less than it had been in 1996 when the legislation was enacted. Network *disinvestment* occurs when the depreciation charge in any given year is greater than the amount of new capital investment in the network. The combined net book value of telecom plant

for AT&T, Qwest and Verizon was $142-billion in 1996, it increased to $155-billion in 2001 and had dropped by a third to $101-billion in 2007.[7]

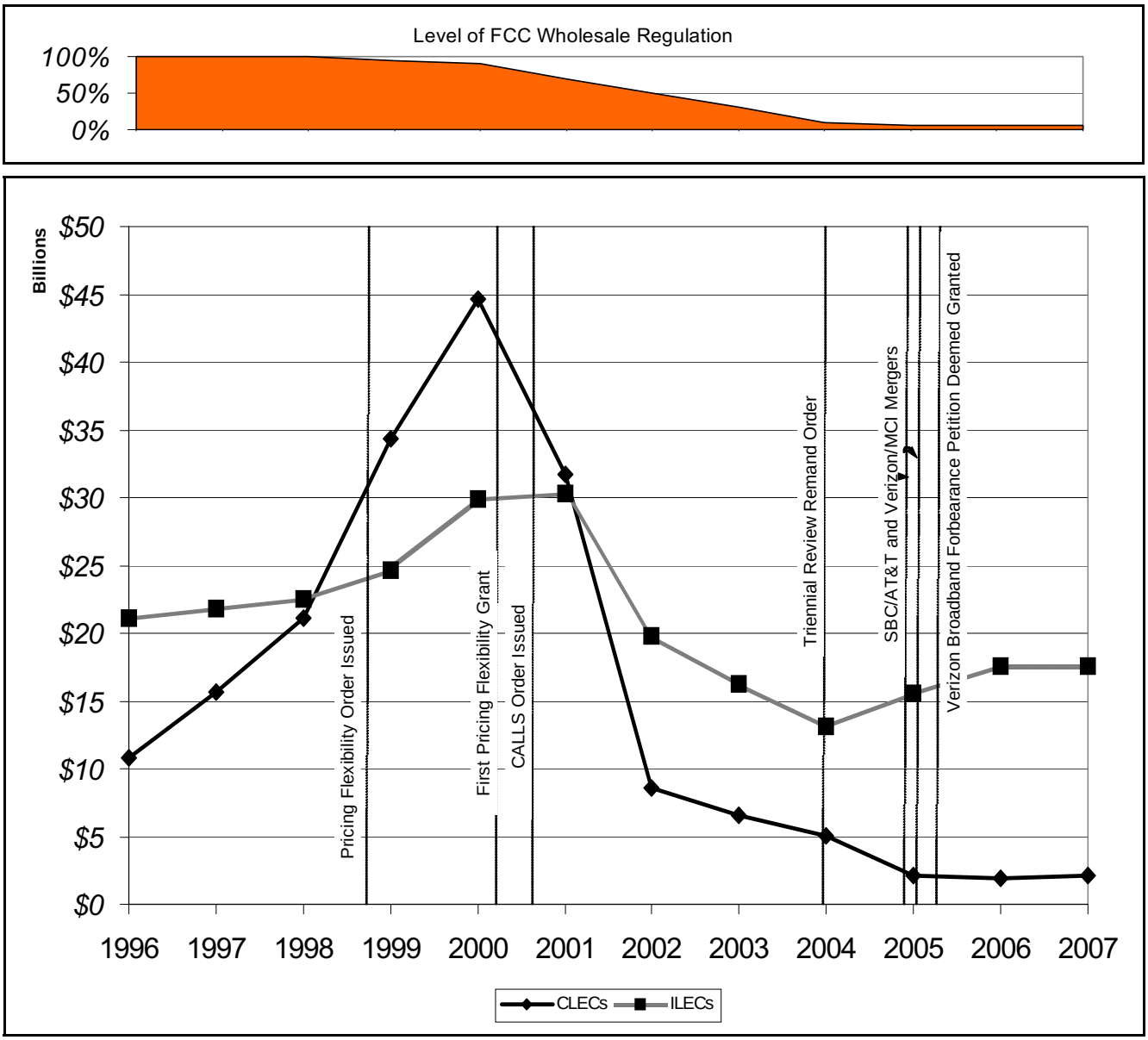

Figure 2. US ILEC and Competitive TSP Capital Expenditures, 1996-2007.

7. Federal Communications Commission, ARMIS Report 43-02, USOA Report: Table B-1.B, Years ending 1996-2007; ARMIS Report 43-02, USOA Report: Table B-5, Years ending 1996-2007. Available at http://www.fcc.gov/wcb/eafs (accessed March 4, 2009).

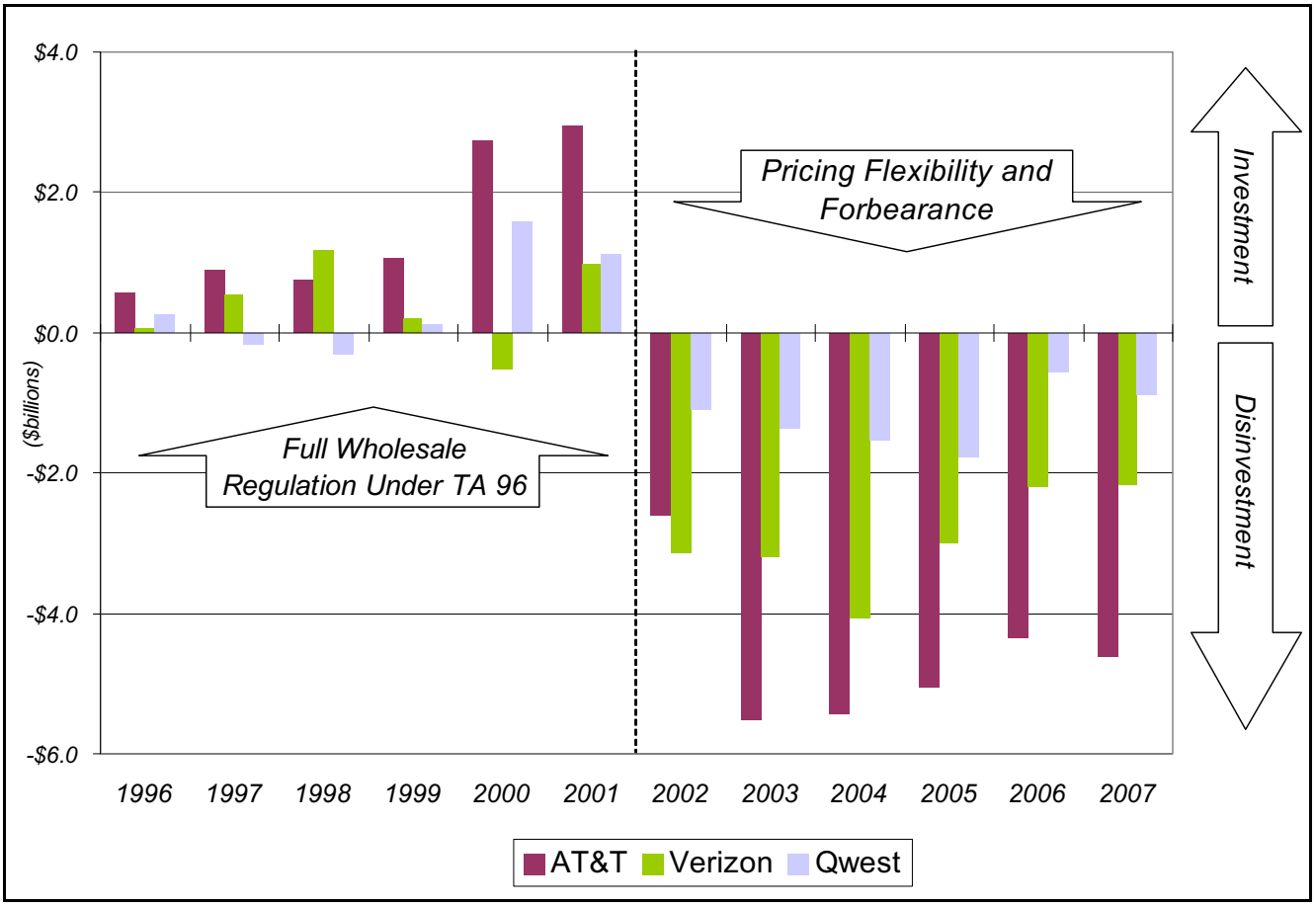

Figure 3. Positive Net Investment in RBOC plant became negative after 2001, when the RBOCs began *disinvesting* in their core ILEC networks.

In the US, deployment of competitive fibre remains sparse, even in major urban areas

In the US, the extremely sparse deployment of competitor facilities, particularly to the vast number of locations requiring DS-1 and DS-3 capacity services – combined with the FCC's premature deregulation of such services – has permitted US ILECs to increase prices far beyond the levels that could be achieved or sustained in a competitive market or that, in its absence, regulation should tolerate. When dedicated last-mile broadband facilities are priced inefficiently, the economic harm is not confined to the telecommunications sector of the national economy. Because of the role of broadband last-mile facilities as essential inputs to a broad spectrum of economic activity nationwide, the sustained overpricing of these services results in an economic "deadweight loss" with far-reaching negative impacts upon the efficiency and competitiveness of the economy overall.

The evidence that effective competition has not developed for special access service is compelling. Before they were acquired by large ILECs in 2006, AT&T and MCI had regularly

proffered evidence of the economic barriers to deploying last-mile broadband facilities, and their contentions were borne out by evidence produced in connection with the merger review proceedings.[8] Since their elimination, several reliable surveys have confirmed that, particularly for locations requiring DS-1 and DS-3 level services, the ILECs own the vast majority of the last-mile broadband in the US, including in densely populated urban areas. Ironically, the FCC granted large ILECs significant pricing flexibility in many Metropolitan Statistical Areas[9] ("MSAs") based upon the existence of competitive facilities deployed by AT&T and MCI, but it did not revisit these reclassifications after AT&T and MCI (and the bulk of their access facilities) were acquired by SBC and Verizon.

Independent Study Conducted by Regulators: The most recent addition to the independent studies of special access competition is a January 2009 report prepared by the National Regulatory Research Institute (NRRI) for the National Association of Regulatory Utility Commissioners (NARUC). In its report, *Competitive Issues in Special Access Markets*, NRRI concluded that the US ILECs continued to have "strong market power" for last mile services at the DS-1 level. The ambitious report attempted a broad-based analysis that involved surveying both buyers and sellers of access services and analyzing pricing, earnings and deployment data (notably hampered by a lack of cooperation on the part of the largest US ILECs). While we would take exception to some aspects of NRRI's analysis, the bottom line conclusions of the report are entirely consistent with the results of the 2006 Study prepared by the U.S. Government Accountability Office (GAO),[10] ETI's 2007 Special Access Report, and the evidence produced by CLECs in the recent FCC forbearance dockets (discussed in more detail below). Given that the report was commissioned and executed by a neutral third party that is neither a purchaser nor a provider of special access services, its conclusions – affirming continuing ILEC dominance in the provision of the most commonly used last-mile access facilities – are an important addition to earlier studies that have documented this same result.

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8. *In the Matter of SBC Communications Inc. and AT&T Corp. Applications for Approval of Transfer of Control*, WC Docket No. 05-65, *Memorandum Opinion and Order*, 20 FCC Rcd 18290 (2005)("SBC-AT&T Merger Order"); *In the Matter of Verizon Communications Inc. and MCI, Inc. Applications for Approval of Transfer of Control*, WC Docket No. 05-75, *Memorandum Opinion and Order*, 20 FCC Rcd 18433 (2005) ("Verizon-MCI Merger Order"); see also, e.g., U.S. Department of Justice, Antitrust Division, Complaint, *U.S. v. SBC and AT&T Corp.*, U.S. District Court for the District of Columbia, No. 1:05CV02102 (filed October 27, 2005) at paras. 15-16.

9. A Metropolitan Statistical Area ("MSA") is a concept employed by the U.S. Census Bureau, consisting of "a core area containing a substantial population nucleus, together with adjacent communities having a high degree of economic and social integration with that core." The Census Bureau reviews and revises the standards for defining these areas once every ten years, prior to each decennial census. U.S. Census Bureau website, "Current Lists of Metropolitan and Micropolitan Statistical Areas and Definitions," http://www.census.gov/population/www/metroareas/metrodef.html (access 2/8/2009).

10. US Government Accountability Office, FCC Needs to Improve Its Ability to Monitor and Determine the Extent of Competition in Dedicated Access Services, Report to the Chairman, Committee on Government Reform, House of Representatives, GAO-07-08, November 2006 ("GAO Report"). The GAO is a research unit of the United States Congress, and reports its results to the Congress.

CLEC evidence in post-merger forbearance proceedings: Shortly after its merger with MCI, Verizon petitioned the FCC to forbear from regulating special access in six East Coast MSAs (Boston, Providence, New York, Philadelphia, Pittsburgh, and Norfolk/Virginia Beach). Using data obtained from a commercially available source (GeoResults) and that had been used by Verizon itself in other contexts, a coalition of competitive carriers submitted evidence showing that even in markets hand-picked by Verizon as the most competitive in its operating areas, competitor-owned facilities were connected to less than one percent of the commercial buildings in these markets.[11] Several months later, Qwest filed similar petitions covering four of its major MSAs (Denver, Minneapolis/St. Paul, Phoenix and Seattle). Again, the GeoResults data showed competitor facilities at less than one percent of the commercial building locations within the MSAs that Qwest had identified as highly competitive.[12] Table B1 in Appendix B provides, for each MSA, the percentage of buildings identified as having CLEC facilities available as reported in the GeoResults data that had been filed in response to both the Verizon and Qwest Petitions.

The same group of competitive carriers also provided data on the number of wire centers (local ILEC serving offices) within each of the ten metropolitan areas covered by the Verizon and Qwest forbearance petitions that had even a single CLEC-lit building within its service area. The data reveals that in more than 50% of the wire centers in these ten purportedly highly competitive MSAs, there was not even one facilities-based competitor providing special access type service to any building within the wire center serving area (see Appendix B, Table B2). Moreover, even for the one wire center in each metropolitan area with the highest percentage of commercial buildings with competitor facilities in place, the evidence (detailed on Table 1 below) shows the ILEC as the sole provider of last-mile broadband at between 95% and 99% of the business locations.

In their most recent evidentiary filings in the FCC's Special Access proceeding, US CLECs report no significant change in CLEC penetration in the channel termination market. Although the CLECs classify their carrier-specific data as confidential, CLEC Level 3 (said to be the largest US CLEC, with a fibre presence in 46 of the top 50 MSAs and some 7500 on-net "lit" buildings), advised the FCC that "the approximate number of buildings that Level 3 reaches nationwide equals only 10% of the *total number of the largest commercial buildings located just in the Chicago Metropolitan Statistical Area ('MSA'') alone*"[13]

11. GeoResults data presented in an *ex parte* submission filed October 1, 2007 in FCC WC Dockets 06-172, 07-97, 06-125, 06-147 and 04-440 by Covad Communications Group, NuVox Communications and XO Communications LLC, (the "Joint CLECs"). See Table 1 above.

12. *Ex Parte* Letter filed by Joint CLECs, July 17, 2008, in WC Docket 07-72. See Table 1 above.

13. Comments of Level 3 Communications, LLC in WC Docket No. 05-25, January 19. 2020, at 2, 12.

Table 1

Evidence Demonstrates That Even in the Wire Centers With the Highest CLEC Penetration, Only a Small Fraction of Buildings Have CLEC Service

	Wire Center (ILEC Service Office) w/ Highest % of CLEC Served Buildings	Total Number of Commercial Buildings in MSA per GeoResults	% of Buildings Identified as Having CLEC Facilities	Number of Buildings with CLEC Facilities in Place (1)
Boston	WLHMMAWE	1,007	1.49%	15
New York	NYCMNYBS	4,008	1.07%	43
Norfolk / Virginia Beach	NRFLVABL	1,654	4.29%	71
Philadelphia	PHLAPALO	4,676	0.68%	32
Pittsburgh	PITBPADT	4,137	1.09%	45
Providence	PRVDRIWA	8,129	0.97%	79
Denver	ENWDCOMA	2,433	2.28%	55
Minneapolis / St. Paul	MPLSMNDT	1,574	3.63%	57
Phoenix	PHNXAZSE	1,095	1.46%	16
Seattle	STTLWAEL	666	3.12%	21
Total		29,379	1.48% (1)	434

(1) Calculated from other data on table.

SOURCE: GeoResults data presented in an *ex parte* submissions filed October 1, 2007 by Covad Communications Group, NuVox Communications and XO Communications LLC, (the "Joint CLECs"), in FCC WC Dockets 06-172, 07-97, 06-125, 06-147 and 04-440 and on July 17, 2008 in FCC WC Docket 07-97.

Government Accountability Office (GAO) Report: In November 2006, the GAO issued a report entitled *FCC Needs to Improve Its Ability to Monitor and Determine the Extent of Competition in Dedicated Access Services*. GAO's findings are entirely consistent with the previously described CLEC coalition data. The GAO found that competitive alternatives to ILEC special access services do not exist at the vast majority of commercial locations where customers need to buy those services. As shown in Table 2, service demand at DS-1 and DS-3 levels is what is required at 99% of all buildings within the sixteen MSAs surveyed by GSA and no competitive alternatives exist at 94% of those locations. Importantly, the GAO also found that the presence of one or more competitors offering facilities at specific buildings in no way translates into a competitive marketplace for services at other locations – including locations in close geographic proximity to the places where competitive services are being offered.

Table 2

Percentage of US Commercial Buildings with Demand at or above DS-1 Where a Fibre-Based Competitive Alternative is Available (July 2006)

Service level (demand)	Total number of buildings in segment	% of Total buildings with demand	Number of buildings with a "lit" CLEC competitor	Percent of buildings with a "lit" CLEC competitor
DS-1	177571	97%	10322	5.8%
DS-3	3916	2%	599	15.3%
2 or more DS-3s	1510	1%	375	24.8%
Total no. of Buildings	182997		11296	6.2%

Source: GAO Report, Table 2.

Urban myth dispelled (fibre in street vs. connections to buildings): US ILECs have persisted in arguing that a CLEC's deployment of fibre in urban areas makes it economically feasible for the CLEC to provide service to any customer in the vicinity of its fibre. The evidence also shows this conclusion to be false. The map below (Figure 4), submitted to the FCC by SBC in 2003 (before the elimination of legacy AT&T and MCI as independent companies), illustrates competitor fibre deployed along streets in the San Francisco financial district as well as the locations at which SBC supplied special access services to CLEC customers. An analysis of this map reveals more than 436 instances where SBC special access services were being provided to CLEC customers located on streets where competitive fibre was in place.[14]

SBC (now AT&T) has never updated this map, and the information necessary to update it is not independently available. However, the economic conditions that limit competitors' ability to deploy fibre to individual buildings have not improved since 2003 – virtually all of the same cost elements apply, and some have increased. In addition, since the majority of the competitor facilities shown on this map most likely belonged to AT&T, a significant portion of these connections are no longer in competitors' hands.

14. Attachment A of SBC Communications *ex parte*, filed August 18, 2004 in CC Docket No. 01-338, *Unbundling Obligations for Incumbent Local Exchange Carriers*. The San Francisco results are not atypical; ETI analyzed data for other SBC and found similar results.

Figure 4. SBC map of Downtown San Francisco showing CLEC enterprise customers being served using Special Access and CLEC "lit" buildings.

In the US, the elimination of broadband unbundling requirements has had no obvious beneficial effect with respect to broadband deployment in remote or rural areas.

US ILECs continue to be very targeted in their broadband investments, concentrating on the highest-revenue (and lowest cost) geographic markets. Overall, there is no evidence that the regional Bell operating companies – AT&T, Verizon, and Qwest – have any particular incentive to invest in broadband facilities to remote areas and even less so when there is no cable CLEC presence. In fact, Verizon and Qwest have divested or are in the process of divesting much of their rural service areas to considerably smaller buyers that have no immediate plans or intentions to deploy high-bandwidth broadband facilities, choosing instead to offer only relatively low-speed ADSL to residential customers and, for that matter, not even to all of them. Having blamed regulation for their reluctance to invest, the RBOCs have not significantly expanded their rural broadband deployment since the elimination of regulatory requirements.

Verizon in particular has been engaged in an aggressive campaign that may ultimately result in its selling off all of its ILEC operations in areas where it is unwilling to invest in FiOS. Having already off-loaded its ILEC business in New Hampshire, Maine, Vermont, and Hawaii to purchasers that have proven to be incapable of assuming responsibility for the existing formerly-Verizon "plain old telephone service" legacy operations,[15] Verizon is currently awaiting regulatory approvals to complete the sale of its ILEC operations in 14 additional states.[16] Moreover, the sale to Frontier includes only residential and small business customers – Verizon is retaining ownership of the services and facilities it provides to large enterprise customers in these areas – offering yet another demonstration of the importance of having a geographically extensive network in meeting an enterprise customer's entire multi-location requirement, an advantage incumbent LECs would not be so quick to relinquish.

Despite having granted ILECs virtually all of their deregulatory wish list with respect to unbundling, price deregulation, and cost allocation, the US government, still frustrated by the lack of broadband services in rural and other underserved areas, in 2009 earmarked more than $7-billion in

15. Hawaiian Telecom, a former-GTE operating company that became part of Verizon in 2005 with the merger of Bell Atlantic and GTE, was sold to The Carlyle Group, a private equity investment firm with no actual operational experience in the telecommunications business. The Carlyle-owned company filed for Chapter 11 bankruptcy protection in 2009. The three former NYNEX/Bell Atlantic operations in northern New England were sold in 2008 to FairPoint Communications, a small North Carolina-based rural telephone company that, prior to its acquisition of the Verizon properties, served only about 300,000 rural customers. With the addition of the acquired Verizon lines, FairPoint's size mushroomed by a factor of six. The company suffered massive operational problems in all three states, and in 2009 also filed for Chapter 11 bankruptcy protection.

16. These territories include much of the former GTE operations and the former Bell Atlantic state of West Virginia. Verizon had made minimal investments in FiOS upgrades in these areas (and currently provides FiOS Internet service to about 110,000 customers in certain of the former GTE territories). Verizon has been providing basic ADSL to only some – far less than all – of subscribers in the areas to be sold to Frontier. Frontier recently indicated that it will expand availability of relatively low-speed ADSL in the former Verizon territories, but has not committed to anything close to 100% coverage. There is no indication as to the future of the 110,000 or so FiOS lines that are included in the sale to Frontier, but there is certainly no announced plan or commitment by Frontier for any further FiOS (or other FTTH) deployment.

economic stimulus grants to fund broadband construction in these areas. Although a portion of this funding is available to the "big three" ILECs,[17] it remains unclear whether they will actually apply for any of this funding if the rules ultimately adopted by the FCC require grant recipients to offer open access to the federally supported facilities.[18]

In any event, although the need to develop remote/rural residential broadband must be a component of any national broadband policy, it must not be allowed to become the sole or primary driver: If competition cannot be expected to bring broadband to remote communities and rural locations, then area-specific policies – including outright grants as in the US – should certainly be considered. However, the CRTC would be making an unwise bargain if it were to jeopardize opportunities for competition to develop *nationwide* in exchange for promises of rural broadband investment by ILECs that experience shows they are unlikely to fulfill.

Rather than compelling CLECs to invest in more facilities, the FCC policies that limited CLEC access to broadband components actually raised the barriers to additional CLEC investment.

With a legislative mandate for local competition, along with supportive FCC policies, US CLECs grew rapidly and expanded their capital investments in the period immediately following passage of the *1996 Telecom Act*. Special access and other wholesale broadband services key components of most CLECs' business models. When these services became subject to *de facto* deregulation, it undercut the viability of many US CLECs. Although it was the FCC's express intent in adopting its deregulatory policies to pressure CLECs to deploy their own facilities and become less dependent upon ILEC networks, the deregulation appears to have produced precisely the opposite result. CLECs' capital expenditures dropped off (and never recovered) once ILECs had regulators' permission to deny competitors access to reasonably priced wholesale inputs.

Many of the CLECs in existence when TA96 was enacted or that were formed shortly thereafter have since gone out of business or been acquired following deregulation of ILEC wholesale services, leaving billions of dollars of pre-deregulation CLEC investment for the financial rubbish heap. Those CLECs that have not gone out of business have either been acquired by others – often at bargain basement prices – or have significantly curtailed their capital spending and business ambitions. Table 3 below shows the decline in CLEC market capitalization as CLEC companies went bankrupt, were bought by their ILEC competitors, or were consolidated.

17. These grants were part of the economic stimulus package enacted into law in the American Recovery and Reinvestment Act of 2009, Pub.L. 111-5.

18. See, Bloomberg.com, "Verizon, AT&T May Tell U.S. to Keep $7.2 Billion Stimulus Money," (accessed 1/28/10 at http://www.bloomberg.com/apps/news?pid=20670001&sid=aXx.QVEa9vpM).

Table 3

Changes In US CLEC Market Capitalization
(1999-2006)

	September 30, 1999			July 2006			
		In Millions			In Millions		
Company	**Stock Price**	**Shares out-standing**	**Market Cap**	**Stock Price**	**Shares out-standing**	**Market Cap**	**% change from 9/30/99 to 2006[1]**
Adelphia	$ 28.00	51.42	$ 1,439.67	—	—	—	—
Allegiance	$ 63.00	64.86	$ 4,086.48	—	—	—	—
AT&T Corp	$ 47.44	3,195.63	$ 151,592.86	Acquired	—	—	—
Commonwealth Tele	$ 44.00	22.11	$ 972.77	32.71	21.41	$700.32	-28.01%
CoreCom	$ 37.19	72.05	$ 2,679.43	—	—	—	—
CTC Communications	$ 16.44	14.55	$ 239.24	—	—	—	—
CTCI	$ 47.00	19.93	$ 936.49	23.95	19.22	$460.32	-50.85%
Intermedia	$ 25.00	50.99	$ 1,274.64	—	—	—	—
Focal	$ 23.94	60.65	$ 1,451.72	—	—	—	—
Global Crossing	$ 26.50	794.77	$ 21,061.42	—	—	—	—
GST Telecomm Inc	$ 7.03	37.71	$ 265.18	—	—	—	—
McLeodUSA[2]	$ 41.06	155.30	$ 6,376.62	Bankrupt, relisted, taken private			—
Northpoint	$ 24.31	125.24	$ 3,044.88	—	—	—	—
ICG Communications	$ 15.56	47.34	$ 736.77	Bankrupt, acquired by Level3			—
Level 3 Communications	$ 52.22	341.08	$ 17,810.58	4.23	846.84	3,582.13	-79.89%
Worldcom (MCI)	$ 76.88	1,880.22	$ 144,541.84	Bankrupt, acquired		—	—
RCN	$ 49.69	76.18	$ 3,785.42	Bankrupt, relisted		—	—
Sprint	$ 54.25	785.21	$ 42,597.39	19.54	2980.00	58,229.20	36.70%
Time Warner Telecom	$ 20.88	104.54	$ 2,182.75	13.86	119.88	1,661.54	-23.88%
Winstar Comm Inc	$ 39.06	54.93	$ 2,145.89	—	—	—	—
XO Comm/Nextel	$ 61.38	315.45	$ 19,360.84	Bankrupt, relisted without Nextel			—

Source: carrier 10Q reports, www.thedigest.com/stocks/, finance.yahoo.com

Notes:

— Indicates that the company has filed Chapter 11 or has been delisted from public exchanges

[1] All data is current through July 2006.

[2] Stock price for 1999 is as of March 22, 1999

Moreover, those few surviving competitive TSPs have not dramatically increased their capital expenditures as had been predicted. In fact, current competitive TSP capex levels are not even close to their historic highs at the peak of FCC regulation of wholesale services. Figure 5 compares the historic level of competitor investment over the period 1996-2001 with the competitive TSP

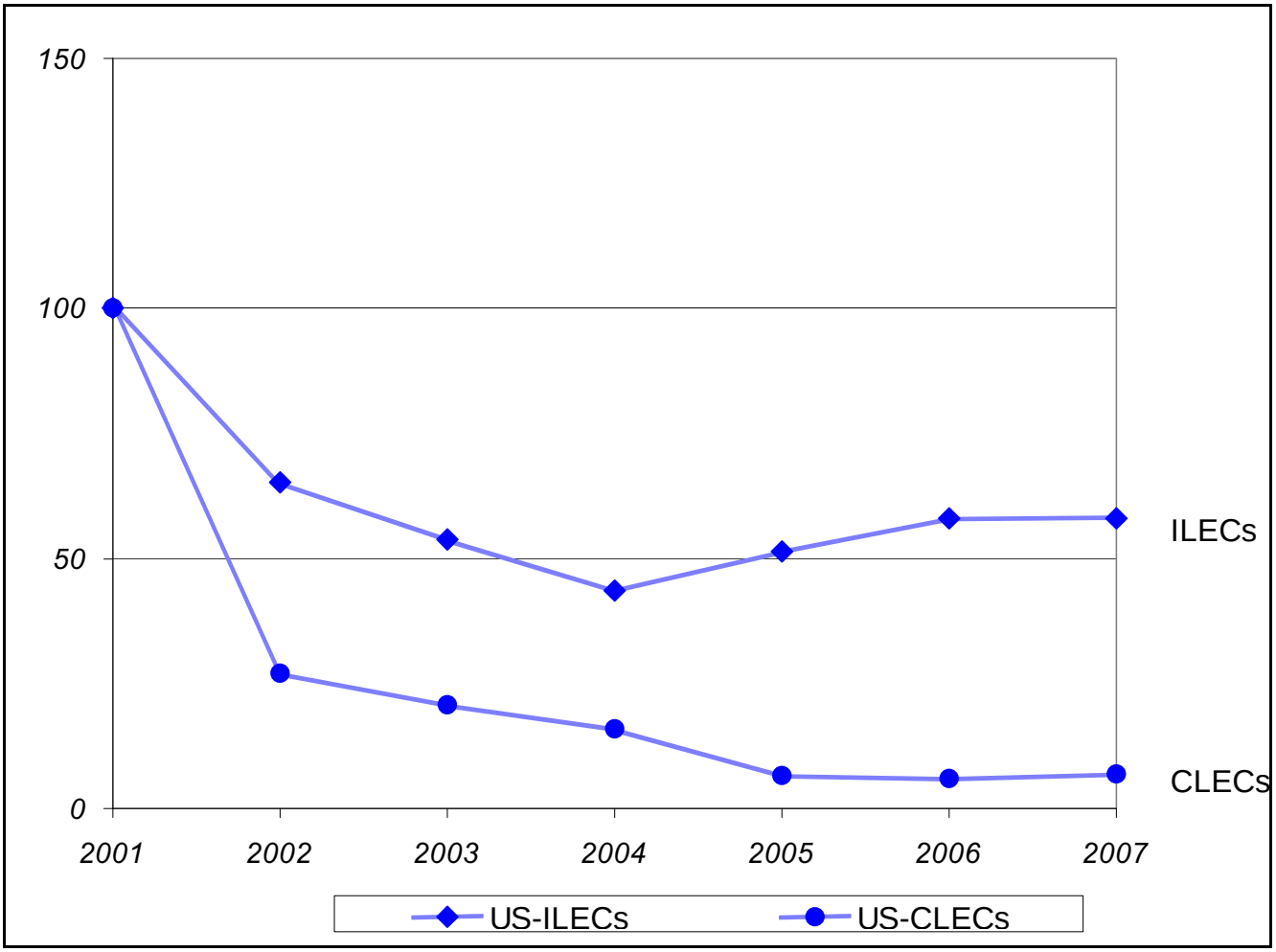

Figure 5. US ILECs and non-cable CLECs scaled back their capital investment spending once FCC regulation of ILEC wholesale services had been eliminated.

SOURCES: US ILEC data is drawn from the Federal Communications Commission, ARMIS Report 43-02, USOA Report: Table B-1.B, Years ending 2001-2007. ILECs are no longer required to provide this data for years beginning after 2007. Available at http://www.fcc.gov/wcb/eafs (accessed March 4, 2009). CLEC data is drawn from company 10-K annual reports filed with the Securities and Exchange Commission, available at http://www.sec.gov/edgar/searchedgar/webusers.htm (accessed February 2009).

investment level for the period 2002-2007. As can be seen, levels of investment have done everything except climb in the wake of widespread deregulation.

Not only did the sea change in FCC policy toward regulation of ILEC wholesale services fail to encourage additional CLEC investment – as we have noted, it had precisely the opposite effect – its other unintended consequence was a significant drop-off in ILEC investment as the threat of a serious CLEC challenge to the ILECs' dominance waned. (See Figure 5 above.) The conclusion is particularly compelling. Under the US FCC deregulatory approach, capital expenditures decreased

sharply both for ILECs and for non-cable CLECs.[19] By 2007, US ILEC capital expenditures had dropped to around 60% of their 2001 level, whereas non-cable CLEC capital expenditures had fallen to less than 10% of where they had been in 2001. Under the then-in-effect deregulatory culture pervading the FCC, non-cable CLEC capital spending continued to decline, while the drop in ILEC capex lasted until approximately 2004, after which it had remained steady and increased only slightly through 2007.

Regulated access to ILEC wholesale facilities stimulates competitive carrier investment by making competitors more viable and responsive competitors, offering customers geographic scope comparable to that available from ILECs. It also stimulates ILEC investment responsive to competitive TSP innovations. Deregulation of wholesale ILEC services operates to insulate ILECs from competitive inroads and pressures, confining the remaining competitors to a role of marginal, fringe players incapable of offering a competitive challenge to the ILECs. The result is restoration of *de facto* ILEC monopoly much as it had existed throughout the last century – except with a seriously scaled back regulatory infrastructure that lacks the tools to assure that ILEC services will continue to be offered at just and reasonable rates and in the public interest.

19. We consider the consequences of FCC deregulation of wholesale ILEC services for *non-cable* CLECs only. Cable television providers entering the residential telephone market were able to utilize their own fibre/coax infrastructure upgraded for two-way digital communications, enabling them to offer both high-speed Internet access as well as residential telephone service without the need for ILEC wholesale services, such as UNE-P.

2 US BROADBAND POLICIES HAVE LED TO HIGHER PRICES AND FEWER COMPETITIVE INNOVATIONS

Deregulation of special access and broadband facilities used by enterprise customers has led to higher prices, which has further suppressed competition.

In the US, the dedicated access connecting to the vast majority of business locations continues to be provided over legacy TDM services (equivalent to CDN in Canada), at DS-1 and DS-3 levels of service. But none of the underlying competitive conditions would be altered by stating the service tiers in terms of their next generation service counterparts. As an economic matter, what is most important is that, whether supporting legacy TDM or next generation IP services, the vast majority of last-mile broadband demand falls at the lower capacity service tiers, and this demand is spread throughout all segments of the national economy. Thus, the competitive conditions described in this report – and the implications of deregulating prices for dedicated last-mile broadband – apply equally to next-generation services in Canada. In the US, the extremely sparse deployment of competitor facilities, particularly to the vast number of locations requiring DS-1 and DS-3 capacity services – combined with the FCC's premature deregulation of such services – has permitted US ILECs to increase prices and generate levels of profit far beyond anything that could be achieved or sustained in a competitive market or that, in its absence, regulation should tolerate.

Over the past seven years, ETI has conducted numerous analyses of special access pricing and has repeatedly found that the large ILECs have consistently increased (or at least held steady), not decreased, their prices for high capacity services in those putatively competitive areas where they have been granted pricing flexibility.[20] In fact, in most cases, those prices are now higher than the prices for the identical services in areas still regulated under price caps – i.e., offered by the same companies in the same states, and falling within the same density zones.[21]

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20. See, e.g., Economics and Technology, Inc., *Competition in Access Markets: Reality or Illusion. A Proposal for Regulating Uncertain Markets* (August 2004), Attachment A to Comments of Ad Hoc Telecommunications Users Committee, filed May 13, 2005 in WC Docket No. 05-25, Special Access Rulemaking; see also, ETI 2007 Special Access Report.

21. For example, Verizon's price for a ten-mile DS1 special access circuit (using two channel terminations and ten miles of interoffice mileage) in downtown Providence, RI (a city that had been granted full pricing flexibility) had risen to $914.82 per month – 30% higher than the price that would be in effect under price cap constraints.

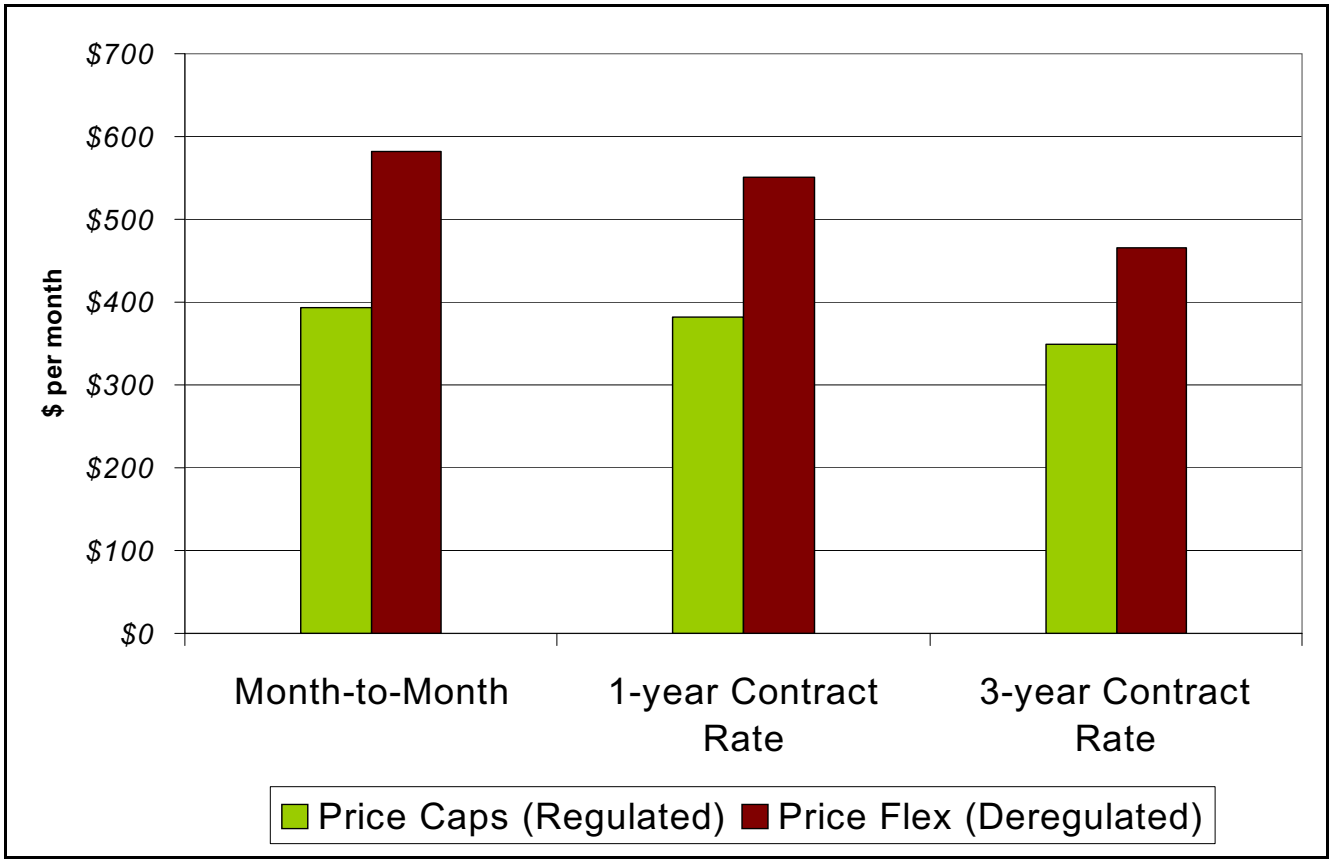

Figure 6. Qwest's prices for DS1 last mile special access facilities are higher in areas that have been deregulated than in areas that remain subject to the FCC's price cap rules.

For Verizon and AT&T, this trend has been mitigated somewhat as a result of temporary price freezes that had been imposed by the FCC as a condition of its approvals of the Verizon/MCI and AT&T/SBC/BellSouth mergers.[22] Additionally, as a condition of the AT&T/BellSouth merger, the AT&T operating companies were required to "roll back" prices in pricing flexibility areas to the levels found under price caps for a three year period (ending July 1, 2010). With the last of these conditions about to expire, CLECs and business customers are already bracing for the expected price increases. AT&T's interstate tariff already discloses rates that will go into effect in some pricing flexibility areas as of July 1, 2010 – rates that are 17% to 25% higher than those in effect under the freeze.[23]

22. Merger conditions are set forth in SBC-AT&T Merger Order at Appendix F; Verizon-MCI Merger Order at Appendix G; and *In the Matter of AT&T Inc. and BellSouth Corporation, Application for Transfer of Control*, WC Docket No. 06-74, *Memorandum Opinion and Order*, 22 FCC Rcd 5662 (2007) ("AT&T-BellSouth Merger Order") at Appendix F.

23. Level 3 Comments at 21, fn. 44; see, Southwestern Bell Telephone Company, Tariff FCC No. 73 (Access Service), 9th Revised Page 39-8.1 (noting "temporary" rate reductions pursuant to merger conditions), 5th Revised Page 39-124.1 (listing rates effective through June 30, 2010), and Original Page 39-124.13 (listing higher rates effective July 1, 2010).

Meanwhile, the special access pricing practices of Qwest – the largest ILEC unaffected by merger conditions – have continued to reflect the pricing trajectory previously observed with respect to AT&T and Verizon. As Figure 6 demonstrates, Qwest's prices for a DS-1 last mile special access circuit in areas where the FCC has granted pricing flexibility are much higher than in those areas still subject to the nominal price regulation found in the FCC's price caps plan.

Very similar conclusions about special access pricing were also reached by the US Government Accountability Office ("GAO") in its 2006 Report.[24] The GAO made direct service-to-service price comparisons of services sold on a monthly basis and under various term contracts. For each type of service, prevailing prices for DS-1 and DS-3 channel components were compared with the price levels in effect before the implementation of pricing flexibility. These comparisons revealed a consistent pattern across all density cells and all term commitment levels: Prices in areas subject to pricing flexibility had increased, whereas prices in areas still subject to price caps had fallen.[25] The GAO focused particular attention upon areas with the highest building density, since competitive fibre, where it exists, is largely concentrated in areas of high density, i.e., in the central business districts of an MSA (typically designated as Zone 1).[26] As the summary GAO data in Table 4 below confirms, even in areas that are presumably the most likely to attract competitive entry, the ILEC had raised rates more in areas subject to pricing flexibility than in those (putatively less competitive) areas where price caps had remained in effect.

Despite the FCC's reluctance to address the economic dysfunction that has resulted from failing to reimpose pricing constraints on noncompetitive special access services, it cannot have been unaware of these conditions. In a paper published in 2004 (based largely on 2002 data), two FCC staff economists observed that:

> The question that has arisen is whether the price cap LECs have market power in supplying special access service and whether they have taken advantage of this. The data clearly show that this is the case. One significant indicator of market power is the ability to raise prices without losing customers. The foregoing analysis clearly indicates this to be the situation.

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24. U.S. Government Accountability Office, FCC Needs to Improve Its Ability to Monitor and Determine the Extent of Competition in Dedicated Access Services, Report to the Chairman, Committee on Government Reform, House of Representatives, GAO-07-08, November 2006 ("GAO Report"). The GAO is a research unit of the United States Congress, and reports its results to the Congress.

25. GAO Report, at 28.

26. Special access rates are generally deaveraged into three "density zones," with Zone 1 representing the highest density areas and Zone 3 the lowest. See, *In the Matter of Expanded Interconnection with Local Telephone Company Facilities; Amendment of the Part 69 Allocation of General Support Facility Costs*, CC Docket No. 91-141; CC Docket No. 92-222; 7 FCC Rcd 7369 (1992); *see also, e.g., In the Matter of Bell Atlantic Telephone Companies; Centel Telephone Company; Southwestern Bell Telephone Company; United Telephone Companies, Zone Density Pricing Plans*, 8 FCC Rcd 5529 (1993).

Table 4

Changes in Special Access Prices for Like Services Since the Onset of Pricing Flexibility (Highest Density Zones)

	Density Zone 1	
Special Access Component Prices	**Pricing flexibility areas**	**Price cap areas**
DS-1 Channel Termination, Monthly	▲ $17.76	▼ $1.20
DS-1 Channel Termination, 3-year term	▲ $ 0.87	▼ $9.80
DS-1 Fixed Transport, Monthly	▲ $ 3.60	▼ $4.11
DS-1 Fixed Transport, 3-year term	▲ $ 0.07	▼ $6.11
DS-1 Variable Transport, Monthly	▲ $ 1.28	▼ $1.91
DS-1 Variable Transport, 3-year term	▲ $ 0.51	▼ $2.39
DS-3 Channel Termination, Monthly	▲ $ 127.88	▼ $112.81
DS-3 Channel Termination, 3-year term	▲ $ 82.17	▼ $114.37
DS-3 Fixed Transport, Monthly	▲ $ 21.72	▼ß $52.32
DS-3 Fixed Transport, 3-year term	▲ $ 3.12	▼ $66.19
DS-3 Variable Transport, Monthly	▲ $ 3.51	▼ $11.83
DS-3 Variable Transport, 3-year term	▲ $ 2.05	▼ $12.30
Source: GAO Report, Appendix II, Tables 11, 12, at pp. 67-70.		

> There is nothing wrong with wanting to deregulate a market. The benefits to consumers from competitive interaction can be quite substantial. The market, however, needs to be conditioned so that effective competition can actually occur. The Federal Communications Commission made an error in its definition of just what constitutes potential competition. The metrics chosen simply are not adequate in this regard. Given the prevailing situation, there is a clear need to revisit the pricing flexibility order.[27]

This analysis *predated* the AT&T/SBC and MCI/Verizon mergers. Those mergers eliminated the two largest purchasers of special access services from SBC and Verizon. The mergers also eliminated the two largest non-ILEC suppliers of special access type services then in competition with SBC and Verizon. Even with the temporary limits placed on Verizon and AT&T special access prices under the merger conditions imposed by the FCC, RBOC earnings from these services continued to escalate,

27. Noel D. Uri and Paul R. Zimmerman, "Market Power and the Deregulation of Special Access by the Federal Communications Commission," *Information and Technology Law*, v. 13, no. 2, 2004.

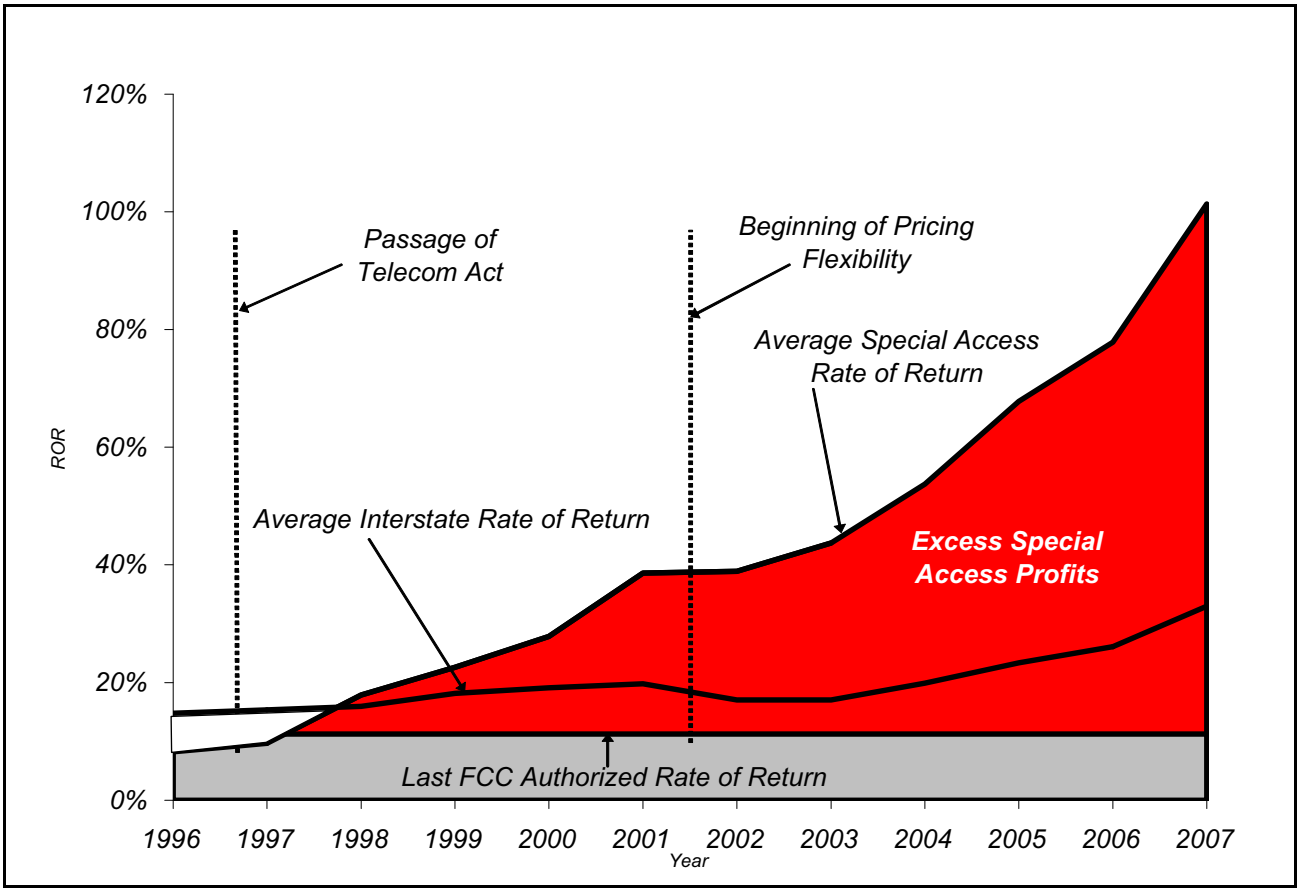

Figure 7: Average RBOC Special Access realized rates of return, 1996-2007.

rising to levels unimaginable in any competitive market or regulated industry. As Figure 7 documents, through 2007, the last year for which the RBOCs were required to report such information to the FCC, the average realized rate of return on special access services had soared to more than 100%. Not surprisingly, the persistent escalation in ILEC earnings levels that had caused the FCC's own staff to recommend, in 2004, that pricing flexibility be revisited were modest when compared to today's ILEC special access earnings levels, now in the high double-digit and even triple-digit range. There is no possibility that such extraordinary earnings levels could be sustained in a market in which meaningful competition was present.

3 FAILED US DEREGULATORY POLICIES NOW UP FOR REVISION

US policymakers are beginning to rethink policies that have limited open access to ILEC broadband, as they consider ways to optimize broadband availability and functionality

The pro-competitive policies contained in the *1996 Telecommunications Act* suffered at the hands of an FCC that acceded to the large ILECs' demands for deregulation in exchange for generally nonspecific promises of widescale broadband investments. Nearly a decade has now passed, yet much of the promised broadband investment has never materialized, and what has been built would have been done anyway, without any regulatory concessions. With the change in the US administration in 2009, top regulators have begun to reassess the policies adopted earlier in the decade that have led to higher prices, fewer choices, and less innovation. The Congressional mandate to develop a National Broadband Plan is causing the FCC to examine a broad range of policies that relate to broadband deployment, competition, and access to next generation services.[28] While it is too early to predict where these policy reviews will lead, the questions being asked by the FCC are encouraging.

Rethinking the FCC's decade-old special access pricing flexibility rules

The FCC adopted its pricing flexibility rules for special access services – the US counterpart of CDN services – in 1999, on the theory that dedicated ("special") access facilities were becoming competitive in some geographic markets. The theory behind the rules was that the ILEC should not be "held back" by price regulation in markets where it faced competition. To determine whether and when such "competition" had arisen, the FCC adopted several threshold conditions ("triggers") that had virtually nothing to do with, and were thus utterly incapable of identifying, an actual price-constraining competitive presence in a particular geographic market. Under the FCC's pricing flexibility rules, large ILECs obtained dispensation to vary their prices from price cap levels once they supplied evidence that a "trigger" had been satisfied in a sufficient percentage of ILEC wire centers in a given MSA. At a somewhat higher "competitive threshold," the FCC rules implemented complete price deregulation for the ILEC's special access offerings in the affected MSA.

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28. *In the Matter of A National Broadband Plan for Our Future*, GN Docket No. 09-51, *Notice of Inquiry*, 24 FCC Rcd 4342 (2009) ("*National Broadband Plan Inquiry*").

As discussed in Chapter 2, it soon became apparent that the new pricing flexibility rules were permitting the ILECs to exercise market power and raise prices to supracompetitive levels precisely because the threshold conditions established by the FCC for pricing flexibility (the "triggers") . In less than three years, the negative competitive consequences of the FCC's pricing flexibility rules had already begun to be clear to its largest customers, including the largest interexchange carrier, (legacy) AT&T Corp. In 2002, AT&T Corp. petitioned the FCC to suspend the pricing flexibility rules, to reinitialize rates based upon normal (competitive) earnings levels, and to reinstate price cap regulation. It took three years (and a court mandate) for the FCC to open its Special Access Rulemaking proceeding, which did not occur until 2005. Even so, by the end of the Bush administration in 2008, the FCC had still not issued a decision in this docket, and rates in pricing flexibility markets continued to escalate.

Recently, however the FCC has shown a willingness to question the assumptions and analytical framework underlying the pricing flexibility rules, including the market definitions and "triggers."[29] The FCC has asked for guidance as to how it should go about determining "whether the current price cap and pricing flexibility rules are working properly to ensure just and reasonable rates, terms, and conditions" as well as "to provide flexibility in the presence of competition." In a recent notice, the FCC points to different analytical approaches that might explain the persistent complaints that the pricing flexibility rules have failed to ensure just and reasonable rates – including questions about whether wire center collocation is a reasonable proxy for competition in the relevant geographic market, what economic conditions make new construction feasible for a competitor, and whether the mere prospect of "potential" competition is sufficient to discourage exclusionary pricing behavior by incumbents. Coming at a time when the FCC is focusing significant efforts toward promoting US broadband capabilities, these questions show that the FCC is aware of the possibility that special access price deregulation has been premised upon flawed assumptions about the economic conditions that permit competitors to deploy new facilities, even in dense urban environments.

Among the comments filed with the FCC in response to this Notice was one submitted by a state regulatory agency – the Massachusetts Department of Communications ("DTC") – that is particularly noteworthy:

> Record evidence supports certain carrier arguments that competition is limited within the special access market [and that] the current regulations for interstate special access circuits have created conditions in which dominant providers are using their market power to charge high prices and impose unreasonable non-price terms and conditions.[30]

29. Public Notice, Parties Asked to Comment on Analytical Framework Necessary to Resolve Issues in *Special Access NPRM*, DA 09-2388, rel. November 5, 2009.

30. Massachusetts Department of Telecommunications and Cable, Comments filed January 19, 2010, in Special Access Rulemaking (WC Docket 05-25), at 5.

The Massachusetts DTC endorses the assessments contained in the 2006 GAO Report, including the recommendation that "significant reform of the special access pricing regime is warranted" and its conclusion that the "FCC's competitive triggers may not accurately predict competition at the building level."[31] Importantly, this unbiased commentator points out that the core assumption in the FCC's pricing flexibility rules – that the economic feasibility of a competitor's deploying facilities to any particular building can be inferred from competitor collocation at a wire center somewhere in the MSA – has been repeatedly shown to be incorrect.[32]

National Broadband Inquiry

Under the leadership of its new Chairman, the FCC has initiated a broad inquiry to examine U.S. broadband policies. The FCC issued its broad *Notice of Inquir*y in April 2009, and since that time has published approximately 30 additional public notices delving in more detail into various broadband policy questions. Two recent letters, one from the National Telecommunications and Information Administration (NTIA is part of the executive branch within the US Department of Commerce) and another from the US Department of Justice (the federal agency responsible for enforcing the antitrust laws and for promoting competition), express important views on the status and future direction of US broadband policy. Importantly, both conclude that the only ubiquitous wireline broadband networks in the US will be those of the ILEC and the incumbent cable company.[33] As the Department of Justice observes:

> The enormous sunk cost of wireline broadband networks makes it unlikely that additional wired broadband competitors will enter many geographic areas other than those with the greatest density of users. According to the FCC Broadband Status Report, "[a]t most 2 providers of fixed broadband services will pass most homes." Unfortunately, even in areas where two wireline networks are deployed, consumers seeking to use the most bandwidth-intensive applications may not have more than a single viable choice. The FCC Broadband Status Report goes on to state, "50-80% of homes may get [the] speeds they need from only one provider." If this proves to be supported by further data, it will be highly significant, and rather discouraging, in terms of effective broadband competition in the years ahead.[34]

Although both NTIA and the Justice Department express a desire to see more intermodal (wireless) competitors in the future, they acknowledge that there are many variables and uncertainties that will

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31. *Id*., at 6

32. *Id.,* at 9-10.

33. US Department of Justice, Ex Parte Submission filed January 4, 2010 in National Broadband Inquiry ("DoJ Ex Parte"), at 13; US Department of Commerce, National Telecommunications and Information Administration, Ex Parte Letter filed January 4, 2010 in National Broadband Plan Inquiry, at 3.

34. DoJ *Ex Parte,* at 13.

affect whether wireless broadband exerts competitive discipline on the prices of wireline providers.[35] Both of these agencies' focus is limited to *residential* broadband and, while conceding that residential wireline broadband is, at best, a duopoly, still appear to cling to the fantasy that some future break-through in wireless technology and/or spectrum availability will bring about the competition for the wireline duopoly that would obviate the need for regulation of wholesale services. The DoJ/NTIA view seems to ignore the fact that, even with a wireless "last half-mile" link into the home, an extensive very high capacity wireline (probably fibre) infrastructure would still be needed to connect the wireless drops to the Internet itself, and this infrastructure would necessarily be that of the incumbent wireline LEC or incumbent cable system. Finally, neither the NTIA nor the DoJ have said anything about broadband services in the business market, where no practical wireless solution is even being discussed, let alone "just around the corner."

One of the most proactive and creative proposals submitted to the FCC came from Public Knowledge, which describes itself as "public interest group working to defend citizens' rights in the emerging digital culture."[36] Public Knowledge strongly advocates that the FCC reinstate the classification of ILEC broadband Internet access services as "common carrier" services, subject to Title II of the Communications Act of 1934. Title II regulation requires, *inter alia*, that such services be offered at "just and reasonable" and nondiscriminatory rates, but nonetheless permits the FCC broad discretion to forbear from regulation.[37] Since 2004, the FCC's policies have classified broadband Internet access as "information services" subject only to an ambiguous, ancillary oversight authority. Public Knowledge notes that:

> The Commission based its decision to classify broadband as an information service on several factors: the level of integration of the transmission and information processing components, the expectation that new facilities based competitors would emerge, and the conclusion that the Commission retained adequate authority under Title I to protect consumers and otherwise safeguard the development of the Internet.[38]

It continues:

> Events demonstrate that all three of these assumptions warrant reevaluation. The information processing elements of broadband have become increasingly disaggregated, including DNS service. New facilities based competitors have not emerged. To the contrary, the broadband

35. DoJ *Ex Parte*, at 8-11 (noting cost structure, pricing, and functionality differences between wireline and wireless services, and observing that "[i]t is premature to predict whether the wireless broadband firms will be able to discipline the behavior of the established wireline providers"); see also, NTIA *Ex Parte*, at 3-4.

36. http://www.publicknowledge.org/about

37. Public Knowledge, Reply Comments filed January 26, 2010 in National Broadband Proceeding (pursuant to NBP Public Notice #30).

38. *Id.*, at 2.

> market has become more concentrated since the 2005 Wireline Framework Order as a result of the decline in the number of ISPs available through "intramodal" competition with no increase in the number of "intermodal" competitors. Finally, recent events have called into question the ability of the Commission to protect the open Internet or implement the [National Broadband Plan] using its Title I ancillary authority.[39]

National Broadband Inquiry – Report by Harvard Berkman Center for Internet & Security

As part of its comprehensive effort to develop a National Broadband Plan, the FCC has solicited studies on key issues from highly reputable independent "think tanks." A major study prepared by Harvard University's Berkman Center for Internet & Society addresses the question, "how does the US compare with other developed and developing countries with respect to broadband and 'next-generation' connectivity?" and, more importantly, "what policies have been the most successful in supporting the transition to broadband in 'high-performing' countries?"[40] The Berkman study concludes unequivocally:

> Our most surprising and significant finding is that "open access" policies – unbundling, bitstream access, collocation requirements, wholesaling, and/or functional separation – are almost universally understood as having played a core role in the first generation transition to broadband in most of the high performing countries; that they now play a core role in planning for the next generation transition; and that the positive impact of such policies is strongly supported by the evidence of the first generation broadband transition.
>
> The importance of these policies in other countries is particularly surprising in the context of U.S. policy debates throughout most of this decade. While Congress adopted various open access provisions in the almost unanimously-approved Telecommunications Act of 1996, the FCC decided to abandon this mode of regulation for broadband in a series of decisions in 2001 and 2002. Open access has been largely treated as a closed issue in U.S. policy debates ever since.
>
> Yet the evidence suggests that transposing the experience of open access policy from the first generation transition to the next generation is playing a central role in current planning exercises throughout the highest performing countries.[41]

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39. *Id.*, at 2-3.

40. "Comments Sought on Broadband Study Conducted by the Berkman Center for Internet and Society," NBP Public Notice #13, DA 09-2217, released: October 14, 2009.

41. The Berkman Center for Internet & Society at Harvard University, *Next Generation Connectivity: A review of broadband Internet transitions and policy from around the world*, October 2009 (Draft), at 11.

The Berkman report explains why, as a theoretical matter, open access policies promote competition, but it goes much further – analyzing actual data from around the world and determining, based upon this broad evidence, that well-enforced open access policies lead to more competition, lower prices, and more rapid advancements in broadband functionality:

> We find that in countries where an engaged regulator enforced open access obligations, competitors that entered using these open access facilities provided an important catalyst for the development of robust competition which, in most cases, contributed to strong broadband performance across a range of metrics. Today these competitors continue to play, directly or through successor companies, a central role in the competitiveness of the markets they inhabit. ... The highest prices for the lowest speeds are overwhelmingly offered by firms in the United States and Canada, all of which inhabit markets structured around "inter-modal" competition – that is, competition between one incumbent owning a telephone system, and one incumbent owning a cable system. The lowest prices and highest speeds are almost all offered by firms in markets where, in addition to an incumbent telephone company and a cable company, there are also competitors who entered the market, and built their presence, through use of open access facilities.[42]

National Broadband Inquiry – Importance of "Middle Mile" facilities

Although the focus of open access policy has frequently concerned "last-mile" connections, the FCC has also heard from companies attempting to offer broadband Internet access services that "adequate, reasonably priced, and efficiently provided access to middle and second mile transport services and facilities play an important—if not gating—role in the economics of broadband deployment, particularly in rural, unserved, and underserved areas."[43] For this reason, the FCC has agreed to take a closer look at competitor requirements for "middle mile" facilities and at the adequacy of the existing regulatory regime to ensure that the necessary connectivity is "reasonably priced" and "efficiently provided."[44] The FCC also probes into the economics of "middle mile" facility deployment, including both the costs and the revenue opportunities for different types of providers. (For example, the FCC asks whether the deployment of very high capacity middle mile facilities may be more feasible for cable providers by virtue of their ability to sell video transmission applications along with Internet access services).[45] The wireless providers not affiliated with AT&T or Verizon have

42. *Id,*, at 12.

43. "Comment Sought on Impact of Middle and Second Mile access on Broadband Availability and Deployment," NBP Public Notice # 11, DA 09-2186, released October 8, 2009, at1.

44. *Id.,*at 2, 3, 6.

45. *Id.*, at 6.

repeatedly told the FCC of their networks' dependence upon ILEC access and transport facilities.[46] From the questions posed in the *Middle Mile Notice*, the FCC now appears more receptive to finding new approaches to dealing with these long-standing roadblocks to broadband-enabled services.

Agencies that represent the perspective of the Executive Branch have emphasized the importance of competitor access to middle mile facilities. The Administrator of the National Telecommunications and Information Administration (part of the Department of Commerce) commented that even if the FCC were to expand broadband competition by allocating additional spectrum for broadband uses, "it will remain important for the Commission to assure *competitive access* to high capacity wireline back haul facilities."[47]

Open access in the form of "net neutrality"

The FCC's renewed interest in fortifying its net neutrality policy is another highly encouraging policy initiative that reflects the new administration's commitment to open access. The *Net Neutrality NPRM*[48] issued in October 2009 explicitly recognizes the threat that access bottlenecks controlled by vertically integrated providers poses to the openness that has been a core strength of the Internet, noting that

> In many parts of the United States, customers have limited options for high-speed broadband Internet access service. Moreover, broadband providers generally sell other services – such as voice and video – that face competition from content and applications offered by others over the Internet. As a result, broadband providers' interests in maximizing profits may not always align with the interests of end users and the public.[49]

Under new rules, the FCC would impose an explicit requirement that any broadband Internet access service provider treat lawful content, applications, and services in a nondiscriminatory manner. This requirement for nondiscriminatory treatment of competitive applications and content would address

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46. See, e.g., Comments of Sprint Nextel Corporation WC Docket 09-51, NBP Notice #11, filed November 4, 2009, at ii ("Sprint remains heavily reliant on incumbent LECs for the connections needed to link Sprint's wireless base stations to its fiber rings and mobile switching centers, as well as the connections needed to link its wireline enterprise customers to entrance facilities that reach Sprint's points of presence (POPs). For example, a survey conducted by Sprint in 2007 showed that competitive providers' facilities reached only a little over one percent of over 50,000 cell sites for which Sprint sought competitive alternatives to the incumbent LECs. Overall, Sprint depended on incumbent LECs for more than 96 percent of all DS 1 and DS3 last mile and second mile circuits terminating at customer premises or Sprint cell sites located in the top 50 MSAs. This dependency persists despite Sprint's aggressive efforts to deploy its own facilities where feasible and to rely on competitive providers whenever possible.")

47. NTIA *Ex Parte* Letter at 5.

48. *In the Matter of Preserving the Open Internet; Broadband Industry Practices*, *Notice of Proposed Rulemaking*, 24 FCC Rcd 13064 (2009).

49. *Id.*, at 13067.

some concerns about Internet access providers' ability to use their access monopoly (once the customers has subscribed, his or her Internet access path is exclusive) to discriminate against content providers in favor of their own (competing) content services.

The FCC has received thousands of comments supporting the formalization of its "net neutrality" policies and the expansion of those policies to mandate and provide the means to enforce non-discrimination. Only ILECs and cable companies (and some wireless companies that aspire to join their Internet access "bottleneck club") continue to raise objections to explicit rules that would limit their ability to leverage their market power with respect to Internet access. Amidst the core arguments raised by ILECs and cable companies is a familiar refrain: that any regulatory constraints (this time, on Internet access) will dampen their incentives to invest in broadband. If the FCC heeds the majority of commenters, however, it will proceed with the fortification of its "net neutrality" policies. In parallel with these policies, the FCC has the opportunity to promote broadband investment by reinstating wholesale access requirements that reinvigorate competition.

Realigning broadband policies with competitive realities

The FCC's deregulatory decisions with respect to special access and broadband services – and the ILECs' the wholesale obligations generally – reflected a somewhat irrational exuberance about the expansion of competition following the market-opening mandates of the 1996 Telecom Act. This perception did not match the reality. While competitors were growing and investing incrementally, they certainly never attained the network coverage necessary to impose competitive discipline on incumbents' prices. However, with wholesale inputs assured, competitors did invest heavily in their own networks, and their growth spurred incumbents to do the same. Deregulation of special access and other broadband services provided over last- and middle-mile facilities made it harder for entrants to serve customers' entire network requirements on a profitable basis, which in turn made it more difficult for entrants to invest in new facilities. Faced with less competition for their business customers, ILECs have been able to increase prices and garner higher earnings. With less competition, they have had no strong incentive to upgrade the facilities serving business customers, and this is reflected in the fall-off in their broadband investments.

During the period when the FCC was actively deregulating special access and broadband services, it had based its policies upon "shadow evidence" of competition and upon "predictive judgments" about where competition might potentially develop. The evidence discussed in Chapter 2 clearly shows that assumptions that the presence of competitor facilities at a smattering of buildings in a metropolitan area (or even within the area served by a particular ILEC wire center) do not remotely demonstrate either the existence or the feasibility of facilities-based competition at all buildings in the MSA. The comments that the FCC has received on its approach to special access deregulation – from large businesses (retail customers), competitors (wholesale customers), and state regulators confirm that neither actual nor potential competition can be inferred just because competitors have been able to deploy *some* facilities at *some* very small number of commercial buildings.

It has become clear to virtually every stakeholder interest that the facilities-based competition the FCC had been predicting has failed to materialize, particularly for business customers. Competitors unable to serve customers' entire multi-location requirements because of the unavailability of wholesale access – or because the ILECs' prices are too high – have lost revenues that could have supported additional investment. ILECs are also well aware of the failure of geographically extensive facilities-based competition to emerge in the market for enterprise services, and have exploited the FCC's deregulatory policies by imposing supracompetitive prices for what continue to be *de facto* monopoly wholesale services, enabling them to further suppress the development of competition by making it harder for entrants to serve multi-location business customers.

The FCC's deregulatory decisions are ripe for reassessment.[50] The current FCC has committed to taking a fresh look at the competitive conditions for special access and broadband services. As part of that review, the FCC will be confronted with facts that ILEC broadband prices have risen in the very markets where they claim competition exists and evidence that shows that investment benefitted from competition and has suffered since deregulation made competition less feasible. With this evidence in hand, the FCC has the opportunity – and, in fact, the obligation – to restore regulation of ILEC facilities and the various wholesale broadband services provided over them so as to achieve the pro-competitive conditions mandated in the *1996 Telecom Act*.

50. Some may argue that the FCC's deregulatory decisions on Internet access services and wholesale unbundling of certain network components have been ratified by the US federal courts. However, when the federal courts upheld the FCC's deregulatory decisions, they were deferring to the agency's expertise in assessing competitive conditions in the telecommunications industry. If the new FCC were to find, for example, that current competitive conditions today do not match its earlier findings, that the proxies used to predict competition do not accurately identify its existence, or that Internet access services are less "integrated" than initially assumed, it could use these findings as a basis to revise its earlier policies without being considered to be "inconsistent."

Appendix A | RBOC Investment Levels 1996 to 2007

A detailed review of individual Regional Bell capital additions during the last dozen years for which data is available (the 1996 to 2007 time frame discussed above) confirms that the capital spending by all three carriers conforms to the same overall pattern:

Verizon

During the six year period from 1996 to 2001, while regulation of wholesale services was still in effect, the companies that comprised Verizon increased their gross Telephone Plant in Service ("TPIS") by $56.5-billion. For the subsequent six-year period (2002-2007) – the deregulatory period – Verizon's gross TPIS additions were substantially lower – at $39.8-billion. Verizon and its predecessor companies (NYNEX, Bell Atlantic and GTE) spent 42% more on telecommunications plant during the six year period during which regulation of wholesale rates was in effect than during the subsequent six year period of deregulation.[51] That means that even including its highly publicized *FiOS* investment – Verizon's foray into fibre-to-the-home and the video market – Verizon spent about 30% less than it had been spending while subject to price regulation.

While it is not possible to definitively isolate Verizon's capital investments in the residential market (where it is racing to compete with cable TV companies for the "triple-play" phone/Internet/video bundle) from its capital investments in enterprise service broadband facilities – there is considerable evidence that the bulk of its recent capital spending has been directed mainly at the residential markets – not at business broadband. Verizon began investing in *FiOS* in 2004, and projected that it would spend approximately $23-billion by the end of 2010.[52] According to data filed with the FCC, Verizon's ILEC operations invested a total of $25.8-billion in Verizon's entire network over the first four years of that 7-year deployment period (compared to single-year network investments of $30-billion for each of 2000 and 2001), and $11.2-billion of that was investment was in Cable and Wire Facilities (CWF). The CWF category contains both the last mile transport facilities

51. The data includes Verizon's predecessor ILEC companies: Bell Atlantic and non-RBOC GTE.

52. *Verizon Provides New Financial and Operational Details on its Fibre Network as Deployment Gains Momentum,* Verizon Investor Relations, "News-at-a-glance", September 27, 2006.

being upgraded for residential *FiOS*, last mile business special access facilities, and interoffice transport facilities. Since Verizon reported to its investors that $8- to $10-billion or more of that was for *FiOS*, that leaves only about $2-billion (or $500-million per year) for all other interoffice transport and enterprise and wholesale last mile facilities combined. This $0.5-billion per year is considerably less than Verizon had been spending on (non-*FiOS*) CWF facilities for the preceding period (for purposes of our analysis – 1996 to 2003) during which Verizon's annual CWF plant additions averaged $2.4-billion.

AT&T Inc.

During the same 1996-2001 period, the RBOCs that now comprise AT&T Inc. (SBC, Pacific Telesis, Ameritech, BellSouth and the Southern New England Telephone Company) increased their total TPIS by $73.7-billion. For the subsequent six-year period 2002-2007, AT&T Inc.'s (and its legacy RBOCs') TPIS additions were, like Verizon's, substantially lower – at $49.4-billion. Facing the same regulatory environment as Verizon, AT&T Inc.'s investment patterns were similar – spending almost 50% more on telecom plant during the six years when price regulation was in effect than over the subsequent six-year period of deregulation.[53] That means that even including its mass-market *U-verse* Internet and video deployment, AT&T Inc. spent about one-third less during the post-regulation time frame than when wholesale services prices and access were still being regulated.

Qwest

The drop-off in Qwest's gross capital additions to its network is even more striking than either Verizon's or AT&T's. For the 1996-2001 period, Qwest increased its gross TPIS by $20-billion. But in the 2002-2007 period under pricing flexibility and other deregulatory measures that Qwest had actively sought, the Company's gross TPIS additions had dropped by almost two-thirds, to a little over $7-billion for the entire six years. *Qwest spent almost three times as much* on telecommunications plant during the six year period when wholesale regulation was in effect than the subsequent six years when most of its wholesale services and rates had been deregulated.

53. The data includes AT&T's predecessor ILEC companies: SBC, SNET, Ameritech, Pacific Bell and BellSouth.

Appendix B Enterprise Broadband Competition in Major US Metropolitan Areas

Shortly after its merger with MCI, Verizon petitioned the FCC to forbear from regulating special access in six East Coast MSAs (Boston, Providence, New York, Philadelphia, Pittsburgh, and Norfolk/Virginia Beach). Several months later, Qwest filed similar petitions covering four of its major MSAs (Denver, Minneapolis/St. Paul, Phoenix and Seattle). Using data obtained from a commercially available source (GeoResults), a coalition of competitive carriers submitted evidence showing that even in markets hand-picked by Verizon and Qwest as the most competitive in their respective operating areas, competitor-owned facilities were connected to less than one percent of the commercial buildings in these markets. Table B1 below provides, for each of these ten MSAs, the percentage of buildings identified as having CLEC facilities available as reported in the GeoResults data that had been filed in response to both the Verizon and Qwest Petitions.

The same group of competitive carriers also provided data on the number of wire centers (local ILEC serving offices) within each of the ten metropolitan areas covered by the Verizon and Qwest forbearance petitions that had even a single CLEC-lit building within its service area. The data reveals that in more than 50% of the wire centers in these ten purportedly highly competitive MSAs, there was not even one facilities-based competitor providing special access type service to any building within the wire center serving area (see Table B2).

Table B1

Evidence Demonstrates That Even in Major US Metropolitan Areas, Service From a Provider Other Than the ILEC is Rarely Available

	Total Number of Commercial Buildings in MSA per GeoResults	% of Buildings Identified as Having CLEC Facilities	Calculation of # of Buildings (1)
Boston	192227	0.10%	192
New York	446122	0.10%	446
Norfolk / Virginia Beach	72229	2.00%	1445
Philadelphia	271725	0.15%	408
Pittsburgh	85694	0.19%	163
Providence	56927	0.40%	228
Denver	104385	0.24%	251
Minneapolis / St. Paul	124740	0.26%	324
Phoenix	127763	0.17%	217
Seattle	127880	0.18%	230
Total	1609692	0.24% (1)	3903

(1) Calculated from other data on the table.

SOURCE: GeoResults data presented in an *ex parte* submissions filed October 1, 2007 by Covad Communications Group, NuVox Communications and XO Communications LLC (the "Joint CLECs") in FCC WC Dockets 06-172, 07-97, 06-125, 06-147 and 04-440 and on July 17, 2008 in FCC WC Docket 07-97.

Table B2

US ILECs Face No CLEC Facilities-Based Competition at Any of the Buildings in Most of Their Local Serving Offices

	Total Number of Wire Centers in MSA per GeoResults	Total Number of Wire Centers in MSA w/ no Building Served by a CLEC per GeoResults	% of Wire Centers in MSA w/ no Building Served by a CLEC per GeoResults (1)
Boston	131	69	53%
New York	115	52	45%
Norfolk / Virginia Beach	156	78	50%
Philadelphia	149	114	77%
Pittsburgh	33	11	33%
Providence	58	16	28%
Denver	47	20	43%
Minneapolis / St. Paul	140	84	60%
Phoenix	76	39	51%
Seattle	69	30	43%
Total	974	513	53%

(1) Calculated from other data on table.

SOURCE: GeoResults data presented in an ex parte submissions filed October 1, 2007 by Covad Communications Group, NuVox Communications and XO Communications LLC, (the "Joint CLECs"), in FCC WC Dockets 06-172, 07-97, 06-125, 06-147 and 04-440 and on July 17, 2008 in FCC WC Docket 07-97.