Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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

DECLARATION OF TIMOTHY J. TARDIFF AND DENNIS L. WEISMAN IN SUPPORT OF THE COMMENTS OF QWEST COMMUNICATIONS INTERNATIONAL INC.

I. Introduction

1. My name is Timothy J. Tardiff. My business address is 11 Morton Street, Newton, MA 02459. I am an economic consultant in private practice. I have specialized in telecommunications policy issues for over 25 years. I received a B.S. degree from the California Institute of Technology in mathematics (with honors) in 1971 and a Ph.D. in Social Science from the University of California, Irvine in 1974. My research has included studies of the demand for telephone services, such as local measured service and toll; analysis of the market potential for new telecommunications products and services; assessment of the growing competition for telecommunications services; and evaluation of regulatory frameworks consistent with the growing competitive trends. I have published articles in the regulatory economics literature, which in recent years have focused on policies for the increasingly competitive telecommunications industry.

2. I have participated in numerous legal and regulatory proceedings on issues of telecommunications economics and regulation. Since the passage of the Telecommunications Act of 1996, I have participated in interconnection arbitrations, unbundled element proceedings, universal service investigations, applications by incumbent local exchange carriers for authorization to provide interLATA long-distance, and implementation of the Triennial Review Order rules for unbundling network elements in over 25 states and before the Federal Communications Commission ("FCC"). My international research and consulting experience includes studies and expert reports on telecommunication competition and interconnection issues in Canada, Japan, New Zealand, Peru, Thailand, Australia, and Trinidad and Tobago. I attach a copy of my full resume as Exhibit 1.

3. My name is Dennis L. Weisman. I am employed by Kansas State University as a Professor of Economics. My business address is Department of Economics, Waters Hall, Kansas State University, Manhattan, Kansas 66506-4001. I received a B.A. in economics and mathematics from the University of Colorado; an M.A. in economics from the University of Colorado; and a Ph.D. in economics from the University of Florida with a specialization in industrial organization and regulation. I have testified in numerous regulatory proceedings to the economic and social impacts of regulatory policies and have served as an advisor to telecommunications firms, electric power companies and regulatory commissions on economic pricing principles, the design of incentive regulation plans and competition policies.

4. My primary research interests are in strategic behavior and government regulation. I have authored or co-authored more than 85 articles, books and book chapters. My research has appeared in the Antitrust Bulletin, Economics Letters, the Journal of Regulatory Economics, the Yale Journal on Regulation, the Journal of Policy Analysis and Management, the Southern Economic Journal and the Federal Communications Law Journal. My research has also been cited by the U.S. Supreme Court in Verizon v. FCC, both majority and dissenting opinions. I am the co-author of Designing Incentive Regulation for The Telecommunications Industry, published by the MIT Press and the AEI Press in 1996, and The Telecommunications Act of 1996: The "Costs" of Managed Competition, published by Kluwer in 2000. I am also the author of Principles of Regulation and Competition Policy for

the Telecommunications Industry - A Guide for Policymakers, published by The Center for Applied Economics at the University of Kansas, School of Business in 2006. I currently serve on the editorial boards of the Journal of Regulatory Economics, and Information Economics and Policy and I am an editor for The Review of Network Economics. I attach a copy of my full resume as Exhibit 2.

5. In its recent Public Notice,[1] the Federal Communications Commission requested comments on an analytical framework for evaluating whether competition for special access services is sufficient to justify the pricing flexibility previously granted to incumbent local exchange carriers (ILECs) under its current rules. The purpose of this declaration is to present economic principles for the general design of the analytical framework and to recommend specific data that could be used within this overarching framework to (1) determine whether the general rules for establishing the proper degree of price flexibility are working as intended, or require modification and (2) identify geographic areas no longer subject to price regulation (Phase II MSAs) *and* deemed to have sufficient competition so that incumbents' special access prices in those areas can be used as benchmarks for determining whether special access prices in areas deemed to have less competition are just and reasonable.
6. This declaration is organized as follows. First, we discuss the fundamental economic principles that can serve to constructively inform the Commission's deliberations regarding forbearance from price regulation and related issues. Second, because the state of actual and potential competition is the fundamental economic rationale for determining the requisite degree of regulatory oversight, we provide a brief background on how competition for special access services, in particular, has progressed. Third, because of its prominence in previous discussions of special access competition, we explain how literal interpretation of accounting rates of return would not only fail to provide economically meaningful measures of special access competition, but, if used to inform price levels, could serve to stifle broadband investment by both incumbents and facilities-based rivals alike. Accordingly, in the final sections of this declaration, we describe how competitive prices differ from those

[1] Federal Communications Commission, *Parties Asked to Comment on Analytical Framework Necessary to Resolve Issues in Special Access NPRM*, WC Docket No. 05-25, Public Notice, Released November 5, 2009 ("Public Notice").

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that result from regulation and then present our recommended analytical framework, which relies, in large part, on *prices and other outcomes* observed under competitive conditions.

II. Economic principles for regulating/deregulating industries subject to increasing competition

7. For this Commission's recent proceedings on the efficacy of its forbearance procedures, we developed a set of economic principles that can be constructively employed to inform the Commission's deliberations on the scope of regulatory oversight in U.S. telecommunications markets. These principles are included as Exhibit C to this declaration.[2] In this section, we summarize these principles and discuss their relevance for developing the analytical framework at issue in this proceeding. A complete listing of these principles follows, although Principles 1 – 7 are perhaps the most relevant for our discussion of special access pricing.

[2] Dennis L. Weisman and Timothy J. Tardiff, "Principles of Competition and Regulation for the Design of Telecommunications Policy," October 21, 2009.

Principle 1. The optimal regulatory policy should recognize the tradeoffs between static and dynamic efficiency and its implications for consumer welfare.

Principle 2. The optimal regulatory policy should balance Type I errors (regulating when market forces provide sufficient competitive discipline) and type II errors (not regulating when market forces provide insufficient competitive discipline) so as to minimize the expected social cost of error.

Principle 3. The optimal regulatory policy should be platform-neutral and competitor-neutral in that it should serve to protect the integrity of the competitive process rather than individual competitors.

Principle 4. Market share tests are inherently problematic in regulated industries and the Commission should not rely upon them to draw inferences about market power.

Principle 5 Any dearth of competition in retail telecommunications markets is likely an artifact of regulatory-rate distortions that served to suppress competition.

Principle 6. Historical ratemaking polices in telecommunications that diverge from the competitive standard can lead regulators astray in applying standard market definition guidelines.

Principle 7. The cost structure for wireline providers (i.e., pronounced scale/scope economies) and the corresponding high price-cost margins required for financial viability implies that relatively modest levels of competition may be sufficient to impose the requisite pricing discipline.

Principle 8. The purpose of mandatory unbundling is not to control market power *per se*, but rather to enable competition that would not be possible otherwise.

Principle 9. Wholesale markets are relevant to the implementation of the 1996 Telecommunications Act only insofar as they are required for competition in retail markets.

Principle 10. Policymakers have recognized that (i) subscription to both wireless and wireline does not imply that the two services are complements, and (ii) wireless provides competitive discipline on wireline prices

8. In enacting the 1996 Telecommunications Act, the Congress indicated that the express purpose of the Act was:

> To promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies.[3]

9. A number of observations regarding this passage are instructive. First, given that the primary objective of the Act is to foster competition in telecommunications markets, the phrase "lower prices" should be interpreted as prices reflective of competitive market conditions.[4] This may imply prices either higher or lower than those put in place under regulator fiat.[5] In referencing "lower prices," the emphasis is placed on static efficiency – moving prices closer to underlying economic costs. Second, the phrase "encourage the rapid deployment of new telecommunications technologies" speaks to dynamic efficiency. Hence, in passing the 1996 Act, it is clear that the Congress harbored both static and dynamic efficiency objectives. A key question therefore concerns how best to balance these sometimes conflicting objectives in crafting telecommunications policy.

10. Principle 1 recognizes that there may well be trade-offs between static and dynamic efficiency. Hence, in designing efficient telecommunications policy, the Commission should be aware of the operative trade-offs. To wit, improvements in static efficiency achieved by driving prices closer to underlying economic costs may simultaneously serve to truncate expected returns and thereby curtail investment in the network infrastructure and reduce

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[3] Preamble, 1996 Telecommunications Act of 1996. Pub. L. No. 104-104, 110 Stat. 56 (codified as amended in scattered sections of 47 U.S.C.)

[4] The *principle of statutory construction* requires that, wherever possible, the various provisions of a statute must be read so as not to create a conflict, either with the other provisions of the statute, or with respect to the overall intent of the statute. Federal Communications Commission, *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, CC Docket No. 01-338, *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket No. 98-147, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, Released August 21, 2003 at ¶ 659. Hence, in order to avoid a conflict with the multi-faceted provisions of the 1996 Telecommunications Act—increased reliance on market forces, investment in infrastructure and reduced regulation—"lower prices" must be interpreted, and in fact can only be interpreted, as those prices that would be realized under competitive market conditions.

[5] The proper metric for assessing market power is the deviation of prices from competitive levels, not the deviation of prices from those that were set under regulatory fiat.

dynamic efficiency. In recognizing these tradeoffs, it is important to recognize that the consensus among economists is that dynamic efficiency trumps static efficiency in terms of relative effectiveness in conferring benefits on consumers.

11. Principle 2 recognizes that the optimal policy design must balance the risks of both "too much" regulation and "too little" regulation. The risk of too much price regulation is that it can discourage investment, suppress competition and thereby render regulation a self-fulfilling prophecy. This outcome runs directly counter to the call in the 1996 Act to "reduce regulation." The risk of too little price regulation is that prices may temporarily rise to supra-competitive levels. Nonetheless, this problem may well be self-correcting in nature to the extent that subsequent entry induced by supra-competitive prices encourages facilities-based competition and thereby reduces or eliminates the need for regulation on a going-forward basis.

12. To maximize the opportunities for both producers and consumers of telecommunications services, the 1996 Act placed primacy on competitive provisioning of telecommunications services. To this end, Principle 3 recognizes that it is necessary for policies to be both technologically-neutral and competitor-neutral. This means that telecommunications policy should not favor one technological platform over another, nor should it favor one competitor over another for providing broadband services. It is critical that the Commission recognize the full implications of the paradigmatic shift in the industry in the years since special access price flexibility was first established. As traditional wired narrowband services continue to recede in importance, accompanied by growing demand for broadband services provided over competitive wired and wireless technologies, unduly restrictive price regulation is rendered increasingly problematic. In the case of special access, because such regulation would have the effect of favoring consumers and firms that purchase a particular type of service (TDM-based DSn-level) offered by a particular type of competitor (the incumbent), the incentives for both incumbents and competitors to invest in broadband facilities and services provided over rapidly developing alternative technologies would be artificially (and uneconomically) reduced.

13. The interaction of the dynamic nature of the industry and the fundamental characteristics of facilities-based telecommunications providers—specifically, cost structures with relatively

high proportions of fixed (and sunk) costs, relatively modest incremental costs and the supply of multiple (complementary) products —implies that traditional approaches for evaluating market power can be highly misleading.[6] (Principle 7). Because (1) the history of price regulation has distorted prices and entry decisions (Principles 5 and 6), and (2) the telecommunications cost structures and product offerings imply that "a little competition can go a long way," traditional market power analyses that rely on defining product markets and inferring market power based on market shares could easily result in the continuation (or tightening) of regulation when there is no real prospect for incumbent providers to leverage market power. (Principles 4 and 5).

14. While controlling market power (prices above competitive levels) is the primary rationale for price regulation (to the extent that the benefits from such regulation exceed the cost) and price performance is an important consideration is evaluating the efficacy of how markets have performed under current rules, it is important that such evaluations be based on the proper competitive benchmarks. The economics literature has long recognized that a primary objective of economic regulation is to emulate a competitive market standard.[7] For example, Professor Kahn observes that "the single most widely accepted rule for the governance of the regulated industries is regulate them in such a way as to produce the same results as would be produced by effective competition, if it were feasible."[8] [9] A corollary to this observation is that when competition is sufficient, the prices charged by formerly regulated providers *are* presumptively at competitive levels, largely independent of the level of accounting profits that might be calculated at a particular point in time or the costs generated from some engineering or statistical model of how an "efficient firm" should be operating.[10]

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[6] On page 2 of the Public Notice, the Commission asks whether a market power analysis should be used to evaluate current special access regulatory rules.

[7] Dennis L. Weisman, *Principles of Regulation and Competition Policy for the Telecommunications Industry*, Kansas University School of Business, The Center for Applied Economics, Technical Report 06-0525, May 2006.

[8] Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions*. New York. Vol. I, John Wiley and Sons, 1970, p. 17.

[9] In similar fashion, Professor Bonbright observes that "Regulation, then, as I conceive it, is indeed a substitute for competition; and it is even a partly imitative substitute." James C. Bonbright, *Principles of Public Utility Rates*. Columbia University Press: New York, 1961, p. 107.

[10] For a critical of the "efficient-firm" standard for setting benchmarks for "competitive" pricing, see Alfred E. Kahn, Timothy J. Tardiff and Dennis L. Weisman, "The 1996 Telecommunications Act At Three Years: An Economic Evaluation of Its Implementation by The FCC." *Information Economics and Policy*, Vol. 11, No. 4,

Accordingly, the analytical framework we propose herein places primary emphasis on the observed prices in markets that are deemed to be either actually or potentially, workably competitive.

III. Background

15. This section presents price levels and their changes over time for Qwest's special access services and shows that real average prices have declined.
16. While special access demand has been steadily growing,[11] real (inflation-adjusted) prices for TDM-based DSn-level special access services have been *decreasing*. From an economic perspective, the combination of expanding volumes and decreasing prices typically indicates that consumers are benefiting from market competition and/or in the case of services still subject to some degree of regulation, firms' pricing performance under that regime. Absent other indicators of offsetting harm, there is no economic justification for more stringent regulation.
17. To illustrate how prices have changed under the current regulatory regime, we use average unit revenue data from 2002 through 2008 to construct average prices for illustrative 8 mile DS-1 and DS-3 circuits.[12] To calculate these average rates, Qwest provided us with average unit revenues for channel terminations and mileage for five of its largest (in terms of special access revenues) metropolitan statistical areas (MSAs) and five other MSAs. The illustrative prices are:

$$\text{Price}_{it} = \text{Channel termination unit revenue}_{it} + 8 \text{ mileage unit revenue}_{it}$$

where the subscripts i and t denote an MSA and year, respectively.

December 1999, pp. 319-365; and Dennis L. Weisman, "The (In)Efficiency of the 'Efficient-Firm' Cost Standard." *The Antitrust Bulletin*, Vol. XLV (1), Spring 2000, pp. 195-211.

[11] According to ARMIS data, between 2001 and 2007, Qwest's special access volumes (measured as DS0 equivalents) increased by 57 percent, or at an average annual rate of 7.3 percent.

[12] The illustrative average unit revenues for an eight-mile circuit include a channel termination plus eight miles of transport. These data reflect the discounts that customers actually received off of tariffed (rack) rates. Such discounted prices are the proper focus for an economic analysis. To wit, to measure and analyze accurately what consumers pay for automobiles, the relevant measure is what they actually paid their dealer (and not the manufacturer's suggested retail price).

18. The MSAs in each category are the following:

Largest MSAs		Other MSAs	
	Price Flexibility Category		**Price Flexibility Category**
Phoenix	II	Omaha	II
Denver	I	Tucson	I
Minneapolis-St. Paul	I	Colorado Springs	II
Seattle	I	Eugene	II
Portland	II	Fort Collins	I

19. The following Figures display DS1 and DS3 special access prices (nominal and real[13]) of an eight-mile circuit for 2002 and 2005-2008 for the MSAs listed above. Revenue-weighted, average prices are calculated separately for MSAs that have Phase I (downward only) flexibility for channel terminations and Phase II (upward and downward) flexibility for channel terminations. For example, Figure 3 shows the average illustrative nominal DS1 prices for (1) MSAs with Phase I flexibility among the largest MSAs (Denver, Minneapolis-St. Paul, and Seattle—labeled "Large Ph I"), (2) MSAs with Phase II flexibility among the largest MSAs (Phoenix and Portland—labeled "Large Ph II"), (3) MSAs with Phase I flexibility among the five other MSAs (Tucson and Fort Collins—labeled "Other Ph I"), (4) MSAs with Phase II flexibility among the five other MSAs (Omaha, Colorado Springs, and Eugene—labeled "Other Ph II").

[13] We used the gross domestic product price index (GDP-PI) to calculate real (inflation-adjusted) prices (in 2005 dollars).

Figure 1: Illustrative DS1 Prices by Price Flexibility Category (nominal)

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Figure 2: Illustrative DS1 Prices by Price Flexibility Category (real)

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Figure 3: Illustrative DS3 Prices by Price Flexibility Category (nominal)

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Figure 4: Illustrative DS3 Prices by Price Flexibility Category (real)

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20. Summary statistics for the changes in illustrative prices for Qwest's top five MSAs and the other large MSAs are presented below. The six-year change in DS-1 prices was quite similar for the largest and other MSAs and for MSAs with Phase I and Phase II price flexibility. In MSAs with Phase I flexibility, prices decreased by about **[BEGIN CONFIDENTIAL]** [redacted] percent and [redacted] percent **[END CONFIDENTIAL]** for the five large and other five MSAs, respectively. In MSAs with Phase II flexibility, the corresponding price reductions were somewhat smaller in percentage terms: **[BEGIN CONFIDENTIAL]** [redacted] percent and [redacted] percent **[END CONFIDENTIAL]** for the five large and other five MSAs, respectively. When measured in real (inflation adjusted) dollars, for MSAs with Phase I price flexibility, the six-year price decreases were **[BEGIN CONFIDENTIAL]** [redacted] percent and [redacted] percent **[END CONFIDENTIAL]** for the five large and other five MSAs, respectively. For MSAs with Phase II price flexibility, the six-year price decreases were **[BEGIN CONFIDENTIAL]** [redacted] percent and [redacted] percent **[END CONFIDENTIAL]**, respectively.[14]

21. Real prices for DS3 services declined somewhat slower overall, particularly in MSAs with Phase II price flexibility. In Phase I MSAs, these prices decreased by about **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** percent nominally and about **[BEGIN CONFIDENTIAL]** [redacted] percent **[END CONFIDENTIAL]** in real terms. In the MSAs with Phase II flexibility, prices increased modestly in nominal terms, but still declined by about **[BEGIN CONFIDENTIAL]** [redacted] to [redacted] percent **[END CONFIDENTIAL]** when adjusted for inflation. The corresponding average annual real price reductions were approximately **[BEGIN CONFIDENTIAL]** [redacted] percent **[END CONFIDENTIAL]** for Phase I MSAs and about **[BEGIN CONFIDENTIAL]** [redacted] percent **[END CONFIDENTIAL]** for Phase II MSAs. In summary, real DS3 prices have decreased in both Phase I and Phase II MSAs, although at a somewhat slower rate in the latter. This result is not surprising, because as we

[14]The corresponding average annual price decreases for MSAs with Phase I price flexibility were **[BEGIN CONFIDENTIAL]** [redacted] percent and [redacted] percent **[END CONFIDENTIAL]** for the five large and other five MSAs, respectively. For MSAs with Phase II price flexibility, the annual decreases were **[BEGIN CONFIDENTIAL]** [redacted] percent and [redacted] percent **[END CONFIDENTIAL]**, respectively. Interestingly, these average annual rates are similar to the 6.5 percent productivity factor that the Commission adopted in the price cap regime that preceded the CALLS proposal. In other words, DS1 prices are in line with prices that would have been allowable under that prior regulatory regime.

discuss elsewhere, the transition to competition will likely lead to both upward and downward price adjustments, but the former are precluded in Phase I areas.

Changes in average revenue per circuit for illustrative 8 mile circuits: 2002 – 2008

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IV. On the (mis)use of accounting rates of return

22. The Public Notice seeks comment on whether the accounting rates of return derived from ARMIS data can be used in a credible fashion to ascertain whether special access rates are just and reasonable.[15] That is, do accounting returns in excess of a target rate of return imply

[15] Public Notice at p. 5. We note elsewhere that this Commission on other occasions has noted that when competition is sufficient, the resulting competitive (or market-based) prices are superior to regulatorily-imposed prices, and hence just and reasonable. See, for example, Federal Communications Commission, *In the Matter of Access Charge Reform*, CC Docket No. 96-262, *Price Cap Performance Review for Local Exchange Carriers*, CC Docket No. 94-1, *Transport Rate Restructure and Pricing*, CC Docket No. 91-913, *End User Common Line Charges*, CC Docket No. 95-72, First Report and Order and Order, Released May 16, 1997 at ¶ 263 ("Access Charge Reform Order").

> Competitive markets are superior mechanisms for protecting consumers by ensuring that goods and services are produced in the most efficient manner possible and at prices that reflect the cost of production. Accordingly, where competition develops, it should be relied upon as much as possible to protect consumers and the public interest.

Consistent with the Commission's prior observation and the economic principles we described earlier, we recommend that the analytical framework the Commission employs to evaluate special access prices rely primarily on unregulated prices that prevail under conditions of sufficient competition.

the existence of market power and hence the need to lower prices for special access? The short answer is "no." While the existence of non-transitory, supranormal *economic* profits is a necessary (although not necessarily sufficient) condition for imposing regulation designed to constrain prices to levels that reflect normal profits, accounting profits, in general, and those reported in ARMIS data, in particular, are highly misleading indicators of whether special access prices (or any other individual prices charged by an ILEC, for that matter) are above competitive levels.

23. There are two fundamental economic explanations of the deficiency of accounting data. First, telecommunications companies produce multiple services and incur a large amount of common or shared costs that are not directly attributable to specific services (i.e., these firms have integrated management structures and employ integrated physical and human resources to provide their services).[16] While accounting systems, such as ARMIS do, in fact, report historical fully distributed costs, these measures, and any profitability measure based on such allocations are economically meaningless.[17,18] The deficiencies associated with cost allocations have been well-known for many years, as Baumol, Koehn, and Willig explained over two decades ago:

> Fully allocated cost figures and the corresponding rate of return numbers simply have zero economic content. They cannot pretend to constitute approximations of *anything*. The "reasonableness" of the basis of allocation selected makes

[16] The provision of multiple services over shared resources also renders attempts to estimate annual total factor productivity gains for individual service (e.g., for the purpose of determining annual changes in a price cap index) economically meaningless.

[17] For a discussion of how accounting-based, cost allocation systems serve to distort efficient business decisions, see Dennis L. Weisman, "*How Cost Allocation Systems Can Lead Managers Astray,*" *Journal of Cost Management*, Vol. 5(1), Spring 1991, pp. 4-10.

[18] This Commission has itself rejected the use of fully allocated cost studies to draw meaningful inferences about the level of prices. For example, it was largely based on meaningless cost allocations that some parties appearing before the Commission in the pre-divestiture era argued that subsidies did not flow from toll services to local services, but from local services to toll services. See John T. Wenders, *The Economics of Telecommunications: Theory and Policy*, Cambridge MA: Ballinger Publishing, 1987, pp. 173-177. Obviously, the Commission did not find these arguments to be credible because if it had it would not have moved to eliminate toll-to-local subsidies with its pervasive rate re-balancing policies as part of CC Docket 78-72. In other words, if the Commission actually believed that fully-allocated cost studies provided meaningful economic information, it could not have justified its rate re-balancing policies. Notably, in justifying the Commission's actions before a skeptical Congress, then Commission Chairman Mark Fowler argued that the Commission had to put in place a more efficient ("competitive") rate design in order to respond to the encroaching market forces in the industry. See Gerald W. Brock, *Telecommunications Policy for the Information Age*. Harvard University Press: Cambridge MA, 1994, Chapter 11. Hence, it would be passing strange if the Commission were to now attempt to reestablish the credibility of the very type of cost studies that it seemingly disavowed more than quarter a century ago when competition was far more limited than it is today.

> absolutely no difference except to the success of the advocates of the figures in deluding others (and perhaps themselves) about the defensibility of the numbers. There can be no excuse for continued use of such an essentially random, or rather, fully manipulable calculation process as a basis for vital economic decisions by regulators.[19]

Professor Alfred Kahn has perhaps most eloquently summarized the disdain that economists generally hold for meaningless cost allocation studies when he made the following observations.

> Full cost allocations that are not grounded in causality have no basis in objective reality; they have no meaning *independent* of the prices they are supposed to justify, except in some ritualistic, incantational sense. Allocations of cost on the basis of *benefit* or some conception of fairness are tautological, or teleological: they are merely a plausible, conventional device for justifying some preconceived notion of what the proper *prices* should be – a device for setting prices that are believed to be fair or just, rather than meaningfully independent tests of their propriety on the basis of cost. … Once you abandon marginal cost, it is not *difficult* to find another measure of cost that will serve that purpose, it is hopeless. This is not a question of looking for a black cat in a room in which all the lights have been turned out. *There is no cat there.*[20]

Finally, Professor John Wenders made the following observation about fully allocated cost studies (FAC), of which the allocated costs provided in ARMIS are prime examples:

> The fundamental defect of these FAC studies is that they rely on a methodology that is wrong and has been thoroughly discredited in the professional economics literature. … The problem with FAC studies is that they attempt to "allocate" costs, which is impossible. Costs can be identified; they can be discovered; they can be caused; they can be avoided; but they cannot be allocated.[21] (footnote omitted)

24. Second, even if a firm produces only a single product, accounting rates of return differ from economic rates of return, which is the proper metric for determining whether there is excessive market power that requires regulatory intervention. The economic rate of return is defined as the discount rate that equates the present value of net revenues (revenues minus

[19] W.J. Baumol, M.F. Koehn, and R.D. Willig, "How Arbitrary is Arbitrary? – or, Toward the Deserved Demise of Full Cost Allocation," *Public Utilities Fortnightly*, Vol. 120, No. 5, September 3, 1987, at 21.
[20] Alfred E. Kahn, "The Uneasy Marriage of Regulation and Competition, *Telematics*, Volume 1, Number 5, September 1984, p. 12.
[21] Wenders, *op. cit.*, p. 174.

operating costs)[22] with the economic value of the investments that allow the firm to generate these revenues. Accounting returns, on the other hand, are calculated each year and depend on judgmental factors such as depreciation lives, along with arbitrary allocation factors and the pattern of net revenues over the lifetime of the assets. Accordingly, as Professor Fisher and Dr. McGowan explain, accounting and economic profits typically differ to the extent that the former generally provides meaningless information about the latter.

> [T]here is no way in which one can look at accounting rates of return and infer anything about relative economic profitability or, a fortiori, about the presence or absence of monopoly power....[I]t is the economic rate of return which is the magnitude of interest for economic propositions. Economists (and others) who believe that analysis of accounting rates of return will tell them much (if they can only overcome the various definitional problems which separate economists and accountants) are deluding themselves...[E]xamination of absolute or relative accounting rates of return to draw conclusions about monopoly profits is a totally misleading enterprise.[23]

25. The fundamentals of the Fisher/McGowan analysis can be illustrated by a simple, stylized example. Suppose a telecommunications firm invests $100 in equipment that has no subsequent operating costs and is able to earn an economic return of 11.25 percent by generating revenues of $14.10 each year of the 15-year economic life of the equipment.[24] Suppose further that the firm uses straight-line depreciation when calculating accounting costs and returns. The following table displays the annual accounting returns.

[22] These net revenues (or more precisely cash flows) do not include depreciation expenses in the operating costs.

[23] Franklin M. Fisher and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," *The American Economic Review*, Vol. 73, No. 1, March 1983, pp. 90-91.

[24] The present value of 15 years of annual net revenues of $14.10 at a discount rate of 11.25 percent is $100—equal to the investment in the equipment that produces the services generating these revenues.

Table 1: Annual Accounting Returns from Investment with 11.25 Percent Economic Return

Year	Net Plant	Net/Gross	Revenue	Depreciation	Income	Accounting return	Economic Return
0	100	100.00%					
1	93.33	93.33%	$14.10	$6.67	$7.43	7.43%	11.25%
2	86.67	86.67%	$14.10	$6.67	$7.43	7.96%	11.25%
3	80.00	80.00%	$14.10	$6.67	$7.43	8.58%	11.25%
4	73.33	73.33%	$14.10	$6.67	$7.43	9.29%	11.25%
5	66.67	66.67%	$14.10	$6.67	$7.43	10.13%	11.25%
6	60.00	60.00%	$14.10	$6.67	$7.43	11.15%	11.25%
7	53.33	53.33%	$14.10	$6.67	$7.43	12.39%	11.25%
8	46.67	46.67%	$14.10	$6.67	$7.43	13.94%	11.25%
9	40.00	40.00%	$14.10	$6.67	$7.43	15.93%	11.25%
10	33.33	33.33%	$14.10	$6.67	$7.43	18.58%	11.25%
11	26.67	26.67%	$14.10	$6.67	$7.43	22.30%	11.25%
12	20.00	20.00%	$14.10	$6.67	$7.43	27.87%	11.25%
13	13.33	13.33%	$14.10	$6.67	$7.43	37.16%	11.25%
14	6.67	6.67%	$14.10	$6.67	$7.43	55.74%	11.25%
15	0.00	0.00%	$14.10	$6.67	$7.43	111.48%	11.25%

Accounting income (revenue minus accounting costs) is a constant $7.43 each year, because revenue and the only accounting cost—depreciation—are the same year-to-year. However, because net plant decreases each year by the amount of the annual depreciation expenses, the accounting return increases from a level of 7.43 percent in the first year[25] to a level of over 100 percent in the final year. Annual accounting returns approximating the economic rate of return of 11.25 percent occur towards the middle of the economic life of the asset.

26. The preceding discussion and examples have important implications for interpreting the rates of return reported in ARMIS data. First, reported rates of return for individual services (or classes of services) have absolutely no economic significance as indicators of the presence or absence of market power. And this conclusion does not even take into account the additional measurement inaccuracies associated with factors such as the ongoing freeze in allocation percentages under the separations process[26] between state and interstate jurisdictions since 2000.[27]

[25] The return is based on the previous year's net plant, e.g., for the first year, the annual income of $7.43 is divided by the year 0 net plant of $100, which reflects the fact that no depreciation has occurred at this point.
[26] Peter Huber has referred to the separations and settlements process as a "Regulatory Cuisinart" precisely because it allowed policymakers to slice and dice costs in any number of arbitrary ways to rationalize a

27. Second, company-wide rates of return in ARMIS, even though they do not include economically meaningless allocations of shared resources, nonetheless are likely to be considerably higher than a firm's economic returns on its investments. In particular, because recent ARMIS telephone plant statistics depict investments that on average have been depreciated well beyond the mid-point of their economic lives, accounting rates of return derived from these data are likely to be artificially high (relative to economic returns) as the example in Table 1 illustrates.

28. Table 2 illustrates how company-wide ARMIS accounting returns overstate economic returns. The table shows Qwest's company-wide revenues, operating expenses (including depreciation), taxes, and accounting income for 1999 through 2008. Because net investment has been steadily declining (e.g., by 2008, net investment was less than 20 percent of gross investment), the accounting returns of over 20 percent by the end of the period overstate Qwest's economic returns. That is, the high accounting returns are, in fact, an artifact of relatively old assets (which, in turn is the result of the relatively slow pace of new investment), rather than supracompetitive economic profits.[28] Accounting returns are likely to be closer to economic returns when asset ages are about one-half economic lives. Therefore, the last row of the table calculates "adjusted return"--what the return would have been had net investment been one-half of gross investment.[29]

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preferred rate design or rate-of-return. Peter Huber, *The Geodesic Network*, 1987 Report on Competition in the Telephone Industry. Funded by the Antitrust Division, U.S. Department of Justice, January 1987, p. 3.54.

[27] See, for example, Qwest's Comments in this proceeding at 45 - 46

[28] The presence of relatively old assets reflects recent annual investment levels that are lower than what prevailed in the past, suggesting that recent expected returns on investments have been relatively low. In these circumstances, reducing revenues on the basis of a particular accounting return would exacerbate the problems that have produced insufficient investment, to the detriment of the dynamic efficiency gains that telecommunications competition and policy should be designed to produce.

[29] For example, for 2007, if net investment had been one-half of gross investment (0.5 x $43.4 billion, or $21.7 billion), the income of approximately $2 billion would have produced a rate of return of under 10 percent. Equivalently, the "adjusted return" shown in the last row of Table 2 can be calculated by multiplying the accounting return shown in the second-to-last row by (the net-to-gross ratio/0.5, which shown in the third-to-last row).

Table 2: Qwest Corporation's Company-wide Accounting Returns (public version)

	Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
		** Begin Confidential**									
1	**Revenue**		9,794,964	9,818,942	9,926,248	10,252,999	10,696,970	11,170,603	11,744,921	11,461,567	11,221,603
2	**Operating Expenses**		6,632,792	7,006,233	8,138,445	8,187,803	8,974,124	9,615,239	8,930,771	9,230,699	8,484,879
3	**Taxes**		1,169,069	825,480	662,267	773,085	883,237	1,142,776	1,195,849	1,071,527	1,215,571
4	**Income**		1,993,103	1,987,229	1,125,536	1,292,111	839,609	412,588	1,618,301	1,159,341	1,521,153
5	**Net Investment**		8,276,891	9,029,970	9,576,326	11,196,757	12,318,799	14,124,078	15,937,971	15,340,003	14,356,795
6	**Gross Investment**		43,436,729	43,162,230	44,012,298	43,938,927	43,771,576	44,319,426	43,478,266	40,973,145	37,919,416
7	**Net/Gross**		19.06%	20.92%	21.76%	25.48%	28.14%	31.87%	36.66%	37.44%	37.86%
8	**Return**		24.08%	22.01%	11.75%	11.54%	6.82%	2.92%	10.15%	7.56%	10.60%
9	**Adjusted Return**		9.18%	9.21%	5.11%	5.88%	3.84%	1.86%	7.44%	5.66%	8.02%
		** End Confidential**									

Source: 1999- 2007: ARMIS 43-01 Report, 2008: Qwest.

Notes:
Revenues are for Qwest Corporation, not Qwest Communications International, Inc.—the parent company.
Revenues and costs are in $1000.
[4] = [1] – [2] – [3]
[7] = [5]/ [6]
[8] = [4]/ [5]
[9] = [8] x [7]/0.5

29. These calculations suggest that Qwest is at best earning normal economic returns, which is entirely consistent with the competitive inroads made in the market for special access services, in particular, and telecommunications services, in general. Conversely, if special access rates were to be reduced so that Qwest was limited to "normal" accounting returns for its special access services, overall company returns would be well below economic levels. To illustrate the debilitating effect of such reductions, we hypothetically reduce Qwest's historical special access revenues so that it would have realized an 11.25 percent accounting return for these services. While in theory, some of these lost revenues could have been offset by price increases for other services, it is far from obvious that this would have been (or can be in the future) realistic, in light of increasing competition and/or the continued regulation of certain ILEC services. Therefore, before presenting the effects of our hypothetical rate reduction on accounting rates of return, we briefly describe revenue trends for Qwest's various services.

30. In fact, revenues for traditional narrow band services have been rapidly decreasing. Parties such as Qwest, as well as the academic literature have elsewhere documented the trend towards competition for the full complement of services traditionally provided by incumbent providers.[30] And while incumbents have been major participants in telecommunications markets, the demand volumes for their traditional services have declined sharply, accompanied by a clear shift in emphasis from narrowband to broadband services. As we discuss in greater detail elsewhere, because incumbents must adapt their shared network resources to accommodate evolving demands, brought about by competitive and technological conditions, whether any particular price is so high as to warrant more stringent regulation must be interpreted primarily in terms of the performance of the integrated business and not by focusing on particular services, such as special access.

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[30] See, for example, Patrick Brogan & Evan Leo, *High-Capacity Services: Abundant, Affordable, and Evolving*, US Telecom, July 2009) (available at http://www.ustelecom.org/uploadedFiles/News/News_Items/ High.Capacity.Services.pdf) and ATLANTIC-ACM, *U.S. Telecom Wired and Wireless Sizing and Share: 2009-2014*, 2009. See, also, Timothy J. Tardiff and Dennis L. Weisman, "The Dominant Firm Revisited," *Journal of Competition Law & Economics*, Vol. 5, No. 3, 2009, pp. 517-536 and Timothy J. Tardiff, "Changes in Industry Structure and Technological Convergence: Implications for Competition Policy and Telecommunications Regulation," *International Economics and Economic Policy*, Vol. 4, 2007, pp. 103-133.

31. Accordingly, it is instructive to observe revenue trends for broad service categories for firms such as Qwest. Figure 5 shows the trends from 1999 (when the current special access regime was adopted) to 2008 in total company revenue,[31] special access revenues, traffic-sensitive switched access revenues, and the sum of intrastate and common line revenues[32] (in thousands of dollars). The figure also shows the decline in ordinary lines, which have been decreasing at an average rate of more than five percent per year since 1999.[33] As a result, most of the broad revenue categories, which depend heavily on these subscriber lines, experienced substantial decreases in revenues. For example, intrastate and common line revenues have declined by **[BEGIN CONFIDENTIAL]** [redacted] percent **[END CONFIDENTIAL]** since the advent of special access price flexibility. Similarly, traffic sensitive (switched access) revenues—historically a major revenue source—declined by almost **[BEGIN CONFIDENTIAL]** [redacted] percent **[END CONFIDENTIAL]** over the same period, due to the combination of lower rates—particularly the phased reduction in switched access rates that resulted from the 2000 CALLS Order, loss of end-user customers, and some substitution towards special access services. And, despite the fact that special access revenues have grown in response to the increasing importance of broadband services, total company revenues have decreased by **[BEGIN CONFIDENTIAL]** [redacted] percent **[END CONFIDENTIAL]**.

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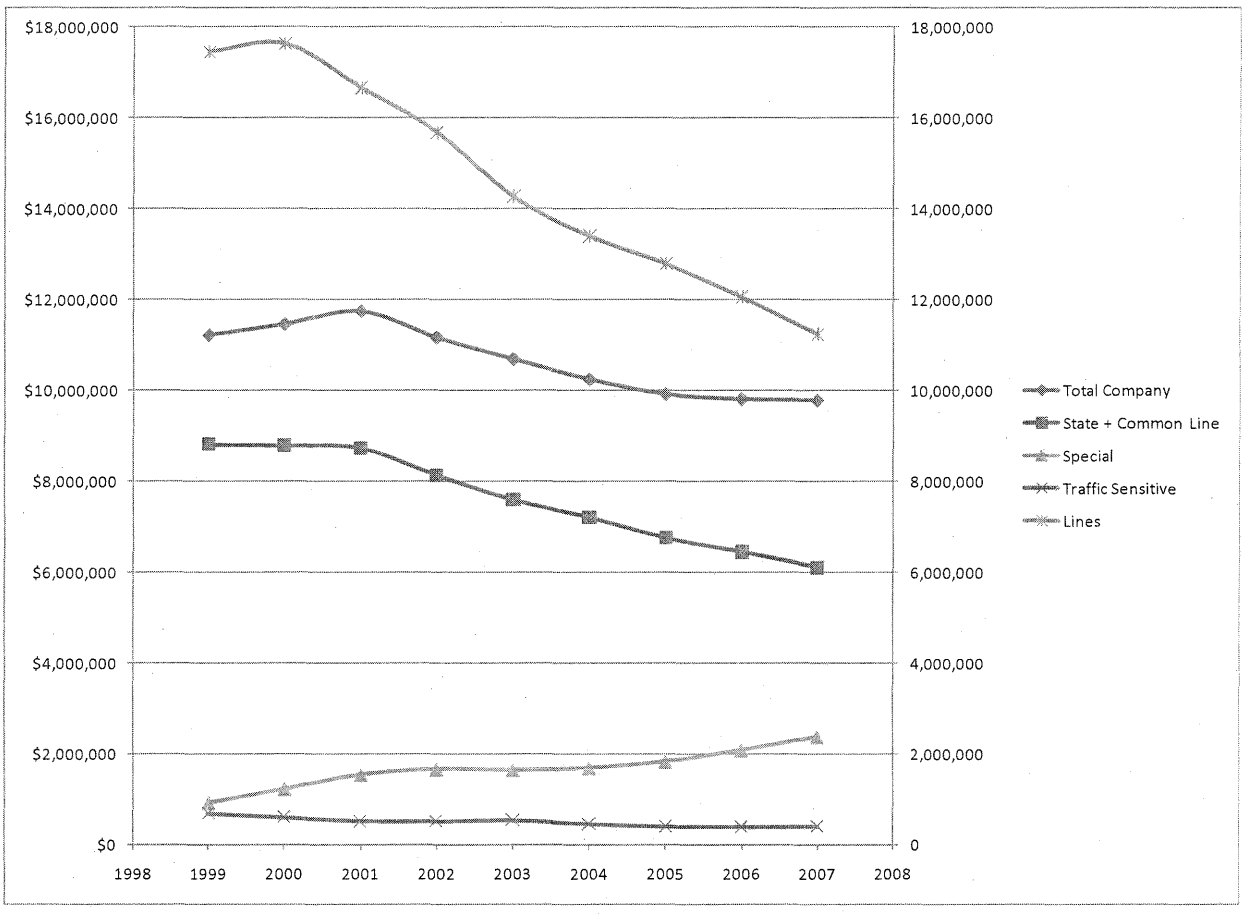
[31] Figure 5 displays revenues for Qwest Corporation, not Qwest Communications International, Inc.—the parent company. **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**

[32] We combine intrastate and common line revenues because both revenue categories are highly correlated with the number of switched lines.

[33] Indeed, the rate of access line losses has been accelerating. For example, ordinary lines decreased from 11.2 million to 10.1 million from the end of 2007 to the end of 2008, or by more than nine percent. The number of lines decreased further to fewer than 9.5 million lines by the end of September 2009.

Figure 5: Qwest Corporation's Revenues and Switched Lines (1999 – 2008): public version



Source: 1999 – 2007 ARMIS 43-01 and ARMIS 43-08, 2008: Qwest

Notes:

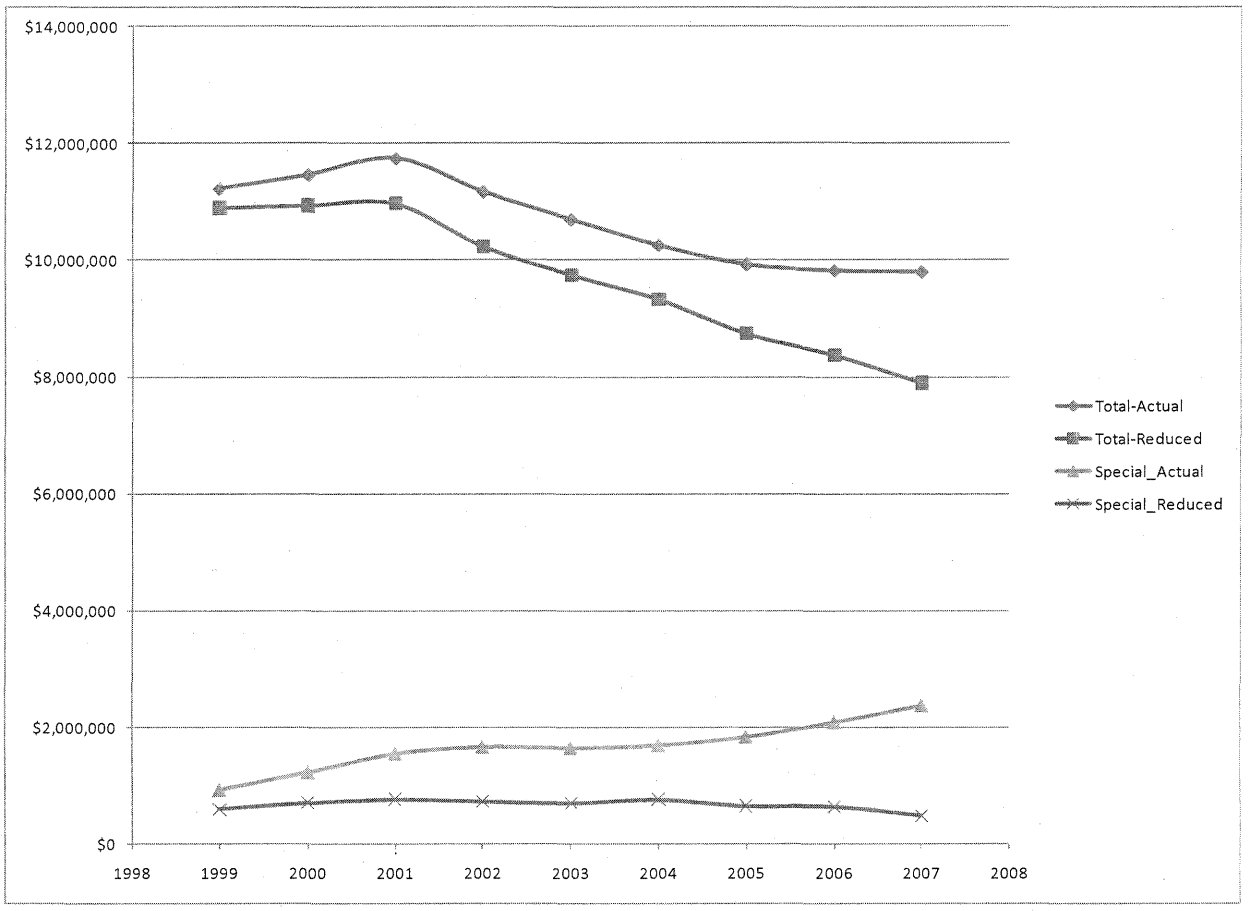
1. Revenues are for Qwest Corporation, not Qwest Communications International, Inc.—the parent company.
2. Revenues are in $1000.
3. 2008 financial data are confidential

32. An illustration of the potential devastating effect of focusing on special access to the exclusion of what is happening to the demand for other services is obtained by hypothetically

reducing special access revenues so that historical earnings would have produced an 11.25 percent accounting return for those services. Figure 6 shows the results of this exercise.[34]

[34] The results shown in Figure 6 are not materially different if, as some parties have previously proposed, special access revenues were reduced so that historical earnings had been 11.25 percent for interstate services (for which special access, switched access, and common line are the major components).

Figure 6: Effect of Hypothetical Special Access Price Reduction on Qwest Corporation's Revenues: public version



Source: 1999 – 2007 ARMIS 43-01 and authors' calculations, 2008: Qwest and authors' calculations

Notes:

1. Revenues are for Qwest Corporation, not Qwest Communications International, Inc.—the parent company.
2. Revenues are in $1000.
3. 2008 financial data are confidential

33. Despite the steady growth in special access demand described earlier, such reductions would have reduced 2008 special access revenues to only **[BEGIN CONFIDENTIAL]** ■

percent [**END CONFIDENTIAL**] of their historical 1999 level. Relative to actual 2009 revenues, the hypothetical reduction would produce special access revenues of only [**BEGIN CONFIDENTIAL**] [redacted] percent [**END CONFIDENTIAL**] and total company revenues of only [**BEGIN CONFIDENTIAL**] [redacted] percent [**END CONFIDENTIAL**] of their respective actual 2008 levels.

34. Table 3 shows the impact of such special access revenue reductions on total company accounting returns. The revenue reductions would drive calculated accounting returns to single digit percentages and the adjusted returns to well under five percent in most years since 2002.

Table 3: Effect of Reducing Special Access Revenues on Qwest's Corporation's Company-wide Accounting Returns (public version)

	Year	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
		** Begin Confidential**									
1	Revenue		7,895,329	8,371,313	8,740,704	9,327,972	9,751,604	10,238,095	10,968,625	10,940,232	10,897,608
2	Operating Expenses		6,632,792	7,006,233	8,138,445	8,187,803	8,974,124	9,615,239	8,930,771	9,230,699	8,484,879
3	Taxes		428,908	261,435	200,339	412,664	514,891	779,440	893,378	868,398	1,089,332
4	Income		833,630	1,103,645	401,920	727,506	262,589	(156,584)	1,144,476	841,136	1,323,397
5	Net Investment		8,276,891	9,029,970	9,576,326	11,196,757	12,318,799	14,124,078	15,937,971	15,340,003	14,356,795
6	Gross Investment		43,436,729	43,162,230	44,012,298	43,938,927	43,771,576	44,319,426	43,478,266	40,973,145	37,919,416
7	Net/Gross		19.06%	20.92%	21.76%	25.48%	28.14%	31.87%	36.66%	37.44%	37.86%
8	Return		10.07%	12.22%	4.20%	6.50%	2.13%	-1.11%	7.18%	5.48%	9.22%
9	Adjusted Return		3.84%	5.11%	1.83%	3.31%	1.20%	-0.71%	5.26%	4.11%	6.98%
		** End Confidential**									

Source: 1999- 2007: ARMIS 43-01 Report, 2008: Qwest and authors' calculations.

Notes:

Revenues are for Qwest Corporation, not Qwest Communications International, Inc.—the parent company.
Revenues and costs are in $1000.
[4] = [1] – [2] – [3]
[7] = [5]/ [6]
[8] = [4]/ [5]
[9] = [8] x [7]/0.5

35. The effects of compounding the revenue losses that firms like Qwest have already experienced from erosion in the demand for their traditional services with ill-advised reductions in special access revenues would be especially pernicious in light of the cost structure of wireline telecommunications providers. As we discussed in great detail in Exhibit C, these firms have cost structures with relatively large amounts of fixed and/or sunk costs and correspondingly low variable costs. In particular, a substantial proportion of the cost of service is incurred in providing the option to use, rather than the actual use of the service. Hence, as long as such networks remain ubiquitously available to both retail customers and wholesale customers—in part due to carrier-of-last-resort obligations, reductions in demand and revenues will not be offset corresponding reductions in cost.[35] Consequently, such uneconomic regulatory rate reductions would threaten financial viability and in the process greatly diminish incentives to invest in the underlying network infrastructure.

[35] Thomas W. Hazlett and Dennis L. Weisman, "Market Power in U.S. Broadband Services," George Mason University Law and Economics Research Paper Series, 09-69, November 2009.

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36. Specifically, revenue reductions along the lines of this example would directly reduce the cash flow of incumbent providers and their ability to undertake infrastructure investment and cost-reducing innovation. In particular, uneconomically low revenues would reduce the source of internal funds used to finance the firm's network modernization and infrastructure improvements. Retained earnings are frequently the preferable means of financing such large-scale investment projects as they constitute the major source of funds for corporate investment. Reductions in internal funds would force firms to turn to relatively higher cost external debt and equity financing for their investment needs.[36] The end result would be lower levels of investment in network infrastructure as fewer projects would produce returns that would justify the investment costs.[37] These reduced investment levels serve to retard the rate of technological advance.[38] This is of particular concern in industries that provide critical infrastructure (e.g., telecommunications) for the economy and, in turn, serve as key drivers of economic growth. In point of fact, this is one of the primary reasons why, in the face of a pronounced economic downturn, there have been calls from the Obama administration and others to inject billions of stimulus dollars into broadband projects throughout the country.

37. This discussion serves to underscore the economic distortions associated with the use of cost allocations, in general, and the ARMIS data, in particular. In light of these problems, the Commission should not rely upon accounting rates of return to draw meaningful inferences about market power. We further submit that the use of the ARMIS data and the economic

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[36] See Steven M. Fazzari, R. Glenn Hubbard and Bruce C. Petersen, Financing Constraints and Corporate Investment, *Brookings Papers On Economic Activity*, Vol. 1, 1988, pp. 141-195. This article explains the myriad reasons why it is more expensive for firms to use external capital markets to finance their investments. These reasons include transactions costs, tax advantages, agency problems and asymmetric information.

[37] For a discussion of the unique forms of risk that confront regulated firms making irreversible investments, see Graeme Guthrie, "Regulating Infrastructure: The Impact on Risk and Investment," *Journal of Economic Literature*, XLIV, 2006, pp. 925-972; and Robert S. Pindyck, "Mandatory Unbundling and Irreversible Investment in Telecom Networks," *Review of Network Economics,* 6, 2007, pp. 274-298.

[38] Investment decisions in infrastructure and innovation are generally sensitive to alternative sources of financing. See J. I. Bernstein and M.I. Nadiri, "Financing and Investment in Plant and Equipment and Research and Development" in Peston, M.H., and R.E. Quandt, eds., *Prices, Competition and Equilibrium*, Philip Allan/Barnes & Noble, 1986, pp. 233-248. Further, multiproduct firms, such as telecommunications providers like Qwest, typically use cash flows generated from all services provided by common network facilities to fund innovation throughout the network, i.e., uneconomic price restrictions would limit such cash flows, resulting in reduced investment and innovation not only for special access, but throughout the network. See, for example, J. Gregory Sidak and David J. Teece, "Dynamic Competition in Antitrust Law, *Journal of Competition Law and Economics*, forthcoming.

distortions that result there from can be expected to repress competition, increase regulation and retard investment and innovation in a manner that works at cross-purposes with the goals and objectives the Congress set out for the telecommunications sector.[39]

V. The pattern of returns expected under competitive conditions

38. Given that prices set in telecommunications markets under regulatory fiat were not reflective of competitive conditions, it is reasonable to expect some price adjustments as these markets become increasingly competitive. This implies that some prices would be expected to rise, while others would be expected to fall, *ceteris paribus*. In particular, we would expect firms to set proportionately higher (lower) price-cost mark-ups in more inelastic (elastic) markets consistent with the inverse elasticity rule or what is known more formally as Ramsey pricing.[40] There is increasing recognition in the economics literature that not only are such differential pricing practices consistent with competitive market behavior, but that competitive markets will actually force firms to adopt such rate structures for their own survival.[41] Hence, as competition intensifies in telecommunications markets, we should expect to observe a more prominent use of differential pricing by telecommunications providers.
39. Because regulators typically did not set efficient (welfare-maximizing) prices under regulatory fiat,[42] we would naturally expect some price adjustments as the

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[39] In addition, as this Commission has long recognized, adjusting rates based on actual returns undermines the efficiency incentives of firms still providing services subject to price caps:

> [B]ecause the basic theory of our existing price cap regime is that the prospect of retaining higher earnings gives carriers an incentive to become more efficient, we believe that rate of return-based reinitialization would have substantial pernicious effects on the efficiency objectives of our current policies. In this regard, we have often expressed concern in past price cap orders that maintaining links between rate levels and a carrier's achieved rate of return would undercut the efficiency incentives price cap regulation was designed to encourage.

Access Charge Reform Order at ¶ 292.

[40] In a market characterized by high fixed costs and relatively low variable costs, such as telecommunications, an efficient rate design—sometimes referred to as Ramsey Pricing—would entail mark-ups above incremental cost to recover joint and common cost in inverse proportion to the effective price elasticity of demand. For this reason, the Ramsey Rule is sometimes referred to as the *Inverse Elasticity Rule*.

[41] See William J. Baumol, *Regulation Misled by Misread Theory: Perfect Competition and Competition-Imposed Price Discrimination.* AEI-Brookings Joint Center 2005 Distinguished Lecture. Presented at the American Enterprise Institute, September 22, 2005. A central thesis of Professor Baumol's lecture is that it is often the very presence of effective competition that *forces* differential prices upon the firm.

[42] The pattern of telecommunications prices set under regulatory fiat is more accurately characterized as "reverse Ramsey" pricing in the sense that the rate structure is diametrically opposite that called for by an efficient rate

telecommunications marketplace completes its transition to a fully competitive market structure. That is to say, competitive firms would rationally choose to mark-up prices proportionately more for relatively inelastic services and proportionately less for relatively elastic services in order to cover their joint and common costs. This outcome would reflect the general structure of Ramsey prices. Hence market prices under competition will approximate those that would have been observed under an efficient ("welfare-enhancing") regulatory rate design. The following quotation may be instructive in this regard:

> There is reason to expect, however, that in practice the prices that would have emerged, had competition been fully effective, will tend to approximate the Ramsey prices. Indeed, even in theory, because those competitive prices will be the prices required for economic efficiency if two or more firms are present in the market, they must be the same as the pertinent Ramsey prices.[43]

40. The above observations have important implications for the pattern of accounting rates-of-return that we should expect to observe in telecommunications markets that are transitioning or have transitioned to a competitive market structure. Specifically, for those services with relatively elastic (inelastic) demands, we should expect to observe relatively low (high) price-cost margins and, depending upon the particular cost allocations schemes employed,[44] relatively low (high) accounting rates-of-return.
41. Moreover, the fact that any particular product provided by a multi-product firm exhibits a relatively high accounting rate-of-return is not probative of market power or supra-competitive returns, particularly when there is no evidence that the firm as a whole is generating supra-normal competitive rates-of-return.[45]
42. A simple, stylized example may prove instructive in illustrating the nature of the problem and the potential for incorrect inferences regarding rates-of-return. Suppose that the regulated firm provides two services – A and B. The annual fixed costs are $100 and the

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design. See David E. M. Sappington and Dennis L. Weisman. *Designing Incentive Regulation For The Telecommunications Industry*. Cambridge MA.: MIT Press and Washington D.C.: AEI Press, 1996, p. 30.

[43] William J. Baumol and J. Gregory Sidak. *Toward Competition in Local Telephony*. Cambridge MA: The MIT Press and Washington D.C.: The American Enterprise Institute, 1994, p. 37, note 13.

[44] For a discussion of the various types of cost allocation schemes, see George Sweeney, "Welfare Implications of Fully Distributed Cost Pricing Applied to Partially Regulated Firms, Bell Journal of Economics, Vol. 13, pp. 525-533.

[45] For example, a recent paper finds that none of the three RBOCs, AT&T, Verizon or Qwest, have q-ratios (i.e., the quotient of market-to-book values) that exceed unity. Hazlett and Weisman, *op. cit.*

incremental costs are $2 per unit for both A and B. In addition, assume that the demand for A is relatively elastic and the demand for B is relatively inelastic. The regulated firm therefore sets prices for A and B of $6 and $8, respectively. Annual quantity demanded at these prices is 10 units of A and 10 units of B. The cost allocator is based on relative demands, so each service is allocated 50% of the fixed costs. The net revenues for A and B are $40 and $60, respectively, the sum of which is just sufficient to allow the firm to breakeven. Nonetheless, focusing solely on service B, the net revenues of $60 exceed the (allocated) fixed costs of $50 by $10, which could be misconstrued as a supra-normal rate-of-return. It is only in examining the firm in the aggregate that it is possible to draw meaningful conclusions about the nature of its returns. This underscores the key observation that no meaningful inference regarding supra-normal rates-of-return can be made by examining the metrics for a single product when the firm is a multi-product provider.

VI. Analytical framework for evaluating special access competition

43. The Commission previously found that there was cause to relax regulation for special access, depending upon the degree of "competition" present. This finding implies that it is incumbent upon those parties that wish to impose more stringent regulation to bear the burden of establishing that such a retrenchment is necessary and consistent with the public interest. We recommend that the Commission develop a rigorous analytical framework to carry out such an objective evaluation in the following manner.

44. The framework we propose would be designed to collect and analyze information to satisfy two major objectives. First, the information would present sufficient information to determine whether there is indeed competition sufficient to justify continued deregulation in geographic areas (MSAs) that heretofore have been granted full Phase II price flexibility, as well as whether there is sufficient competition in certain MSAs that have yet not been granted Phase II price flexibility. Second, the special access prices that prevail in Phase II MSAs deemed to have sufficient competition would then serve as benchmarks for determining whether special access prices in MSAs with less intense competition are just and

reasonable.[46] The fundamental rationale for using prices that prevail under competitive conditions as benchmarks for areas with less competition is entirely consistent with one of the primary objectives of economic regulation: to emulate the outcomes that competition would produce if it were feasible.[47] Because information on prices and other outcomes gleaned from observing the competitive process is inherently superior to regulatory attempts to predict such outcomes, a benchmarking approach is likewise superior in ensuring rates that are not only just and reasonable, but also conducive to the further development of competition in areas that would remain subject to price regulation.

45. Since the competition and pricing information is intended to determine whether the current price flexibility triggers are working as intended and whether special access prices in competitive and less competitive areas are just and reasonable, the geographic scope of the investigation is logically the same MSA geography employed in the regulatory regime that would be evaluated.[48] Accordingly, the analytical framework would have the following major components: (1) a statistically valid stratified random sample of Phase I and Phase II MSAs, (2) key competition and price measures to be collected in each of the sampled MSAs, (3) statistical/econometric analysis of sample data to (a) draw conclusions about the strength of competition in non-sampled Phase II MSAs and (b) test the efficacy of current price flexibility triggers and possible alternative mechanisms for determining price flexibility

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[46] Since the unregulated prices that ILECs charge in areas with sufficient competition are both economic and just and reasonable, those ILEC prices would serve as the benchmarks for evaluating the prices charged by ILECs in areas deemed to have less competition. We note that even if certain Phase I MSAs are deemed to be sufficiently competitive, the heretofore regulated prices in those areas would not be proper benchmarks, because, as we explain in Appendix C (see, for example, ¶¶ 46-47 (Principle 5)), regulation may well have suppressed incumbents' prices to be lower than those that would prevail under unregulated competition.

[47] See notes 7-9 above.

[48] We understand that some parties have proposed a much narrower geographic scope, e.g., individual routes or customer locations. The use of such narrow "geographic markets" is incorrect, both on practical grounds and as a matter of economics, as Professor Brennan explains:

> The most important location question is…the extent to which consumers in some area…have access to multiple providers. That, rather than the location of sellers (the usual application in merger cases) or the locational characteristics of the service (the error here), matters for asking whether the benefits of forbearance in the area in question to those who have multiple alternatives…exceeds the costs of costs of forbearance from the potential exercise of market power to those who do not.

Timothy J. Brennan, "Skating Towards Deregulation: Canadian Developments," *Federal Communications Law Journal*, Volume 60, No. 2, March 2008, pp. 359-360.

eligibility, and (4) a benchmarking approach to determining whether rates in areas with less competition are just and reasonable and the regulatory implications of such determinations.

46. Due to the large number of MSAs (over 350) in the US and the relative intensity of the information needed to measure competitiveness, we recognize that it may not be feasible to collect data for all MSAs. Accordingly, we recommend that the analytical framework begin with a representative stratified sample of Phase I and Phase II MSAs. The use of a stratified sample would ensure that MSAs with certain characteristics are represented in the sample. Similarly, stratification could ensure that a sufficient number of MSAs from each of the incumbent carriers are included in the sample. This would aid the Commission in determining the relative proportion of Type I errors (regulating prices when it is unnecessary) to Type II errors (not regulating price when it is necessary).

47. Efficient design would also likely be based on differential weighting of MSAs. For example, MSAs with larger populations might be more likely to appear in the sample. The stratification dimensions and sampling weights would be chosen so that key competitive characteristics of the sampled MSAs can be confidently extrapolated to non-sampled MSAs. For example, as we explain in greater detail below, a key measure of the sufficiency of competition is the number of actual and potential competitive alternatives available to special access customer locations. Accordingly, the design and sizes of the sample strata would be chosen to produce reasonably precise estimates of average availability for the overall sample and subsamples of greatest interest.

48. We understand that both the USTelecom and a consortium of non-incumbent suppliers and certain purchasers of special access services have presented proposals for collecting data to assess competitiveness.[49] In determining what information in these proposals would be of greatest importance for implementing the analytical framework, the primary concern is that measures of the availability of actual and potential competitive alternatives be as complete and representative as feasible. For example, to the extent that measuring availability starts with information on the locations and volumes of services currently being purchased from

[49] *Ex Parte Letter of USTelecom*, WC Docket 05-25 (April 27, 2009) and *Ex Parte Letter of Computer & Communications Industry Association et al.*, WC Docket 05-25 (June 3, 2009).

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alternative providers, it is essential that all carriers provide complete and accurate information.[50]

49. The determination of potential competition is of no less importance. Such a determination would likely be based on the locations of competing carriers' networks relative to locations likely to have special access users. Accordingly, detailed network information would be required to determine whether particular locations are within a certain distance of a competitors' network[51] and/or whether carriers' typical "make/buy" decision process would result in certain buildings within proximity to their networks being "lit" when confronted with market-based prices.

50. The data on actual and potential demand at specific locations would form the basis for a competitive availability index (CAI) for the MSA as a whole. For example, for each location (e.g., a building), both actual volumes and the number of competitors that could reasonably serve that demand would be determined. The resulting CAI might take the form of

$$\text{CAI} = \frac{\Sigma a_i V_i}{\Sigma V_i}$$

where a_i is the number of alternatives (including ILEC special access) available at location i and V_i is the current actual demand at that location.[52] CAI values above a pre-specified benchmark level would be indicative of "competitive conditions" and no further Commission action would be taken.

51. Such an availability index would be the basis for several lines of potentially useful statistical inquiry. First, determining whether MSAs that have obtained Phase II pricing flexibility are in fact sufficiently competitive would be indicative of whether the existing price flexibility triggers result in "false positives"—areas with insufficient competition being deemed

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[50] To the extent that such information is being collected from special access consumers, it would be important that the consumers providing the information be representative of special access consumers within that MSA. Therefore, to the extent that customer location and special access demand information provided by special access providers is deficient, it may be necessary to rely on customer survey data as well.

[51] For example, both TWTC and Level 3 inform their investors about the amount of demand in proximity to their networks, implying that these are potential customers. TWTC, *Investor Presentation,* December 2009 at 9-10, (available at http://www.twtelecom.com/files/dec_09_Investor.pdf) and Level 3, *Investor Presentation*, May 7, 2009 at 7, (available at http://files.shareholder.com/downloads/LVLT/410073203x0x296047/425b109c-bb88-4e29-82be-95e94218b23c/Investor%20Presentation_Mid%20May%202009.pdf).

[52] Such an index is clearly superior to simple indices such as the percentage of buildings "lit" by particular competitors because (1) it captures potential, as well as actual availability; and (2) it appropriately gives more weight to locations with higher volumes of special access demand.

competitive. Second, the analysis could identify MSAs where the triggers have resulted in "false negatives"—where certain sampled Phase I MSAs that have yet to be granted Phase II price flexibility may be sufficiently competitive to be reclassified.

52. In the event that the analysis indicates that the current trigger mechanisms result in "false positives" or "false negatives", the information used to design the sample and the data collected for the sampled MSAs could be used to explore alternative triggers. Such an approach would be based on a statistical or econometric model that explains the degree of competitiveness in an MSA (as measured by the availability index) as a function of relevant MSA characteristics, including demand characteristics (e.g., number of business lines, line density, etc.), existing triggers, and potential alternative triggers. To the extent that alternative triggers are needed, candidate measures would likely emerge from the information needed to determine potential competitiveness. For example, measures that describe the characteristics of competing suppliers, e.g., the number of competitors within an MSA and their associated facilities route miles, might be used in addition to or in place of the existing triggers.

53. The proposed statistical and econometric analysis would have predictive value as well. Similar to this Commission's approach to drawing inferences based on the commonality of characteristics across different markets as to whether competitors would be impaired without access to unbundled network elements at regulatorily-prescribed prices,[53] the results of the statistical analysis could be used to identify geographic areas with characteristics conducive to effective competition for special access services.

54. In addition to evaluating the effectiveness of the current trigger mechanism in identifying geographic areas with sufficient competition, the proposed framework would also identify Phase II MSAs deemed to be sufficiently competitive. Prices in these MSAs would then be used as benchmarks to evaluate prices in non-Phase II areas, where per-unit costs are typically comparable, if not even higher, particularly in price cap areas. Accordingly, if

[53] In describing its approach for identifying areas with common characteristics conducive to competition, the Commission observed: "Because this approach assumes that competitors could enter into markets that have economic characteristics resembling those where competitors have entered… this approach presumes that reasonably efficient carriers in one market could enter where competitors have entered in another, similar market.", Federal Communications Commission, *In the Matter of Unbundled Access to Network Elements, Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, WC Docket No. 04-313, CC Docket No. 01-338, Order On Remand, Released February 4, 2005 at ¶ 45.

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prices in Phase I or price cap MSAs are no higher than benchmark prices, they would be then be considered presumptively competitive and hence "just and reasonable," although as we observed earlier, regulation may have suppressed prices in non-Phase II areas to be lower than they would have been under *unregulated* competition. This may be considered a type of safe-harbor condition in the sense that prices no higher than the competitive benchmark are sufficient (but not necessary) to establish that undue market power is not being exercised.

55. The same price benchmarking approach would apply to current Phase II MSAs (if any) that were found not to be sufficiently competitive. Again, if special access prices in such areas are no higher than the benchmark prices, the rates would be deemed presumptively just and reasonable. Further, because the current regulatory regime had produced just and reasonable rates, tightening regulation on a going forward basis could not be justified.

56. Conversely, MSAs with rates that exceed the benchmarks would be candidates for further investigation. For example, if an MSA with Phase II price flexibility were deemed to have insufficient competitive alternatives and its rates exceeded the benchmark, further investigation may be warranted.

VII. Summary and conclusions

57. This declaration seeks to (1) provide the Commission with the fundamental economic principles that should be used to inform its deliberations on special access pricing and prospective regulatory intervention; (2) illustrate the competitive dynamics of the special access marketplace with empirical evidence of price trends; (3) discuss well-known problems with drawing meaningful inferences about pricing from fully-allocated cost studies, such as ARMIS, and (4) outline a rigorous, analytical framework for evaluating the competitiveness of special access markets.

58. On the basis of this analysis, we respectfully provide the Commission with five primary policy recommendations. First, the discussion of industry trends in the special access marketplace—sharply decreasing prices, in particular—is indicative of robust competition and consumer benefits. This is particularly likely to be the case when there is no evidence that firms in this sector are earning supra-normal economic returns on their overall operations, as our analysis of Qwest's performance demonstrates. Second, this Commission has long recognized the inherent problems associated with using fully distributed cost data,

such as ARMIS, to draw meaningful inferences about prices and earnings. In fact, this Commission rejected the use of such cost allocations when it engaged in its pervasive rate rebalancing policies in CC Docket 78-72—polices that were designed to put in place a more efficient ("competitive") rate structure. Third, given the history of regulation in the telecommunications sector, it should be expected that increasing competition will give rise to price adjustments in both the downward and upward directions. Hence, increasing prices in the course of such a competitive transition are not dispositive of the exercise of undue market power. Fourth, given the overall competitive trends in the telecommunications industry, this Commission should exercise an abundance of caution in contemplating increased regulation at this point in time. In particular, given the Commission's previous decisions relaxing regulation for special access services, it should follow the practice of the National Football League in not overturning the ruling on the field of play without indisputable evidence that an error had been committed. To that end, we believe that there is no such indisputable evidence on the record that would give the Commission cause to increase its regulatory oversight of special access markets at this point in time. Finally, in light of the adverse effects on investment and innovation that could reasonably expected from increased regulatory oversight, such actions would undermine dynamic efficiency and therefore work at cross-purpose with the goals and objectives of the 1996 Telecommunications Act.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on January 19, 2010

Dr. Timothy J. Tardiff, Declarant

I declare under penalty of perjury that the foregoing is true and correct.

Executed on January 18, 2010

Professor Dennis L. Weisman, Declarant