

**ATTACHMENT C**

**DECLARATION OF WILLIAM E. TAYLOR**

**REDACTED - FOR PUBLIC INSPECTION**

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 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 No. 10593
	)	

**Declaration of  
William E. Taylor  
On Behalf of Verizon**

**I. Qualifications**

1. My name is William E. Taylor. I am Senior Vice President of National Economic Research Associates, Inc., head of its Communications Practice, and head of its Boston office located at 200 Clarendon Street, Boston, Massachusetts 02116.
  
2. I have been an economist for over thirty years. I earned a Bachelor of Arts degree from Harvard College in 1968, a Master of Arts degree in Statistics from the University of California at Berkeley in 1970, and a Ph.D. from Berkeley in 1974, specializing in Industrial Organization and Econometrics. For the past thirty years, I have taught and published research in the areas of microeconomics, theoretical and applied econometrics and telecommunications policy at academic and research institutions including the Economics Departments of Cornell University, the Catholic University of Louvain in Belgium, and the Massachusetts Institute of Technology. I have also conducted research at Bell Laboratories and Bell Communications Research, Inc. I have appeared before state and federal legislatures, testified in state and federal courts, and participated in telecommunications regulatory proceedings before state public utility commissions, as well as the Canadian Radio-television Telecommunications Commission, the

Mexican Federal Telecommunications Commission and the New Zealand Commerce Commission. I have also filed studies before the Federal Communications Commission on numerous occasions. Of particular relevance to the present docket are (i) a series of five filings with Professor Richard Schmalensee between 1994 and 1998 in CC Docket Nos. 94-1 and 96-262 on the use of observable triggers to determine when special access services were sufficiently competitive to warrant pricing flexibility, (ii) a Declaration concerning special access pricing and competition with Professor Alfred E. Kahn in RM-10593 in 2004 and (iii) a Declaration, Reply Declaration and Ex-Parte Declaration in WC Docket No. 04-313 and CC Docket No. 01-338 in 2004 on special access pricing before and after pricing flexibility was implemented.

## II. Overview

3. The NPRM observes that the CALLS plan that currently regulates ILEC special access rates expires in June 2005 and seeks information regarding what regulatory regime, if any, should be put in place “to ensure that rates for special access services remain just and reasonable after the expiration of the CALLS plan.”<sup>1</sup> In essence, the NPRM asks for information regarding three related issues:

- How have the assumptions in the Commission’s *Pricing Flexibility Order*<sup>2</sup> played out in the market? Do ILECs retain market power for special access services in those areas where they have been granted Phase I or II pricing flexibility? Is there evidence of the exercise of market power in those areas?
- What should be the regulatory regime for special access services after the expiration of the CALLS agreement? How should the pricing flexibility rules change to reflect this regulatory regime?
- In view of the findings regarding remaining ILEC market power and the nature of the regulatory regime that follows the CALLS plan, what form of interim relief (if any) is warranted?

My comments focus on the economic content of these issues.

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<sup>1</sup> *In the Matter of Special Access Rates for Price Cap Local Exchange Carriers and AT&T Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, WC Docket No. 05-25 and RM-10593, Order and Notice of Proposed Rulemaking, ¶ 2 (January 31, 2005) (“NPRM”).

<sup>2</sup> *Access Charge Reform*, CC Docket Nos. 96-262, 94-1, 98-63, 98-157, Fifth Report and Order and Further Notice of Proposed Rulemaking, 14 FCC Rcd 14221 (1999) (*Pricing Flexibility Order*).

4. The data show that the Commission's predictive judgments on which it based its special access pricing flexibility rules have been borne out by actual marketplace experience. Customers have benefited from additional competition and pricing flexibility, as demonstrated by a continued expansion of demand volumes accompanied by continued falling prices.

5. The same evidence of vigorous competition underscores the importance of permitting ILECs to respond to customers' Requests for Proposals ("RFPs") and to offer discounted prices subject to term and volume contracts in all geographic areas. If price cap regulation remains as a stop-gap measure in areas that do not meet the Phase II triggers, then such pricing flexibility would permit ILECs only to lower rates,<sup>3</sup> not to raise them. Thus, this flexibility would create no risk that customers would suffer from the exercise of market power if competition turned out to be insufficient to control prices. In addition, the data show extensive presence of competitive fiber facilities that are not collocated in Verizon wire centers. Thus, the triggers for Phase II relief should be modified to include evidence of competition from non-collocated special access alternatives. Such alternatives are just as effective in disciplining ILEC prices as collocated fiber, and the modified Phase II triggers would more accurately reflect the Commission's stated standard for pricing flexibility of competitors' "irreversible sunk investment in facilities."<sup>4</sup>

6. Data are just becoming available for the period in which Phase I and Phase II pricing flexibility became available in certain MSAs. A careful analysis of that data does *not* show that Verizon has been able to exercise market power. On the contrary, prices for individual DS-1 and DS-3 services as well as average revenue per special access circuit have fallen steadily for special access services. Thus, nothing in the data suggests that the Commission should reverse its decade-long commitment to pricing flexibility where market forces are adequate to constrain pricing.

7. The Commission does not need to implement radical changes to the method by which special access prices that remain under price caps are regulated. The current CALLS plan, which

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<sup>3</sup> And to offer packages and contracts that customers found preferable to regulated tariff offerings.

<sup>4</sup> *Pricing Flexibility Order* ¶ 94.

basically caps special access rates,<sup>5</sup> is the preferred regulatory approach for special access services that remain under price caps. There is no need to reinitialize rates based on updated cost studies or to calculate new productivity factors: the task is difficult and even if done correctly, amounts to recontracting, which would dilute the regulated firms' incentives to invest and increase productivity growth in the expectation of retaining the benefits (and, if unsuccessful, the losses) from risking its capital and its efforts. Continuing the productivity index from the *CALLS Order* as a single price cap over all price-cap-regulated special access services would be the equivalent of imposing an X-factor equal to the annual inflation rate, and for current inflation rates in the 2-3 percent range, setting X equal to inflation is consistent with long-run estimates of an LEC X-factor based on historical industry price changes or productivity growth.

### **III. Competition, Pricing and Pricing Flexibility for Special Access Services**

8. The NPRM (¶ 71) seeks to determine if the Commission's assessment of competition and the implementation of its pricing flexibility rules have worked as intended. Reflecting the Commission's view that "actual marketplace evidence is the most persuasive and useful kind of evidence,"<sup>6</sup> the analysis begins with an examination of the actual changes that have taken place in special access since the implementation of pricing flexibility in July 2001. Primary evidence is the history of prices and quantities of special access services sold, both in the aggregate and comparing prices and quantities in MSAs subject to pricing flexibility with those under price caps. The NPRM invites a second analysis that entails assessing the level of and changes in the degree of competition in the marketplace, "short of conducting a burdensome market power analysis," against which the Commission warned in ¶ 72 of the NPRM. Unfortunately, after that warning, the *NPRM* (¶¶ 72-111) immediately sets out precisely the information requirements and calculations that would be necessary to undertake a market power analysis for special access services. Fortunately, however, the evidence from recent trends in prices and quantities of

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<sup>5</sup> *Access Charge Reform*, CC Docket Nos. 96-262, 94-1, 99-249, 96-45, Sixth Report and Order in CC Docket Nos. 96-262 and 94-1, Report and Order in CC Docket No. 99-249, Eleventh Report and Order in CC Docket No. 96-45, 15 FCC Rcd 12962 (2000) (*CALLS Order*).

<sup>6</sup> *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996 and Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 01-338, 96-98 and 98-147, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, released August 21, 2004 ("*TRO*") ¶ 93.

special access services makes such an analysis unnecessary, as the primary price and quantity data show no signs of the exercise of market power by incumbent providers.

9. On the contrary, the empirical evidence indicates that competition in special access services is sufficient to control prices. Using a variety of data sources, I show below that various measures of average revenue per circuit<sup>7</sup> have fallen even as the demand for special access services has increased. These reductions in price continued and — by some measures — even accelerated as ILECs began to receive pricing flexibility for special access channel terminations and channel mileage service in various MSAs beginning in 2001.

**A. Empirical evidence regarding the effects of pricing flexibility**

10. The growth in special access revenues (absolutely and as a percent of interstate access services revenues) cited in the *NPRM* is attributable to the significant growth in the demand for high capacity services and the decline of switched access demand, driven, in part, by intermodal competitors, especially wireless services which are replacing wireline long distance minutes. Therefore, the increased special access revenues cited in the *NPRM* are not a sign of a less competitive marketplace. Quite the opposite, they are a reflection of changes in the telecommunications marketplace driven, in part, by increased competition.

11. In fact, the data show that the result of this increase in competition is *lower* prices for special access services. In Section 1 below, I show that special access prices have fallen since pricing flexibility began in 2001. Moreover, since 2001, special access prices fell faster than the special access price cap index and faster than they fell prior to pricing flexibility. In Section 2, I examine prices for individual DS-1 and DS-3 circuits and show that prices for these services fell throughout the period for which data were available at a rate comparable to the special access price cap index.

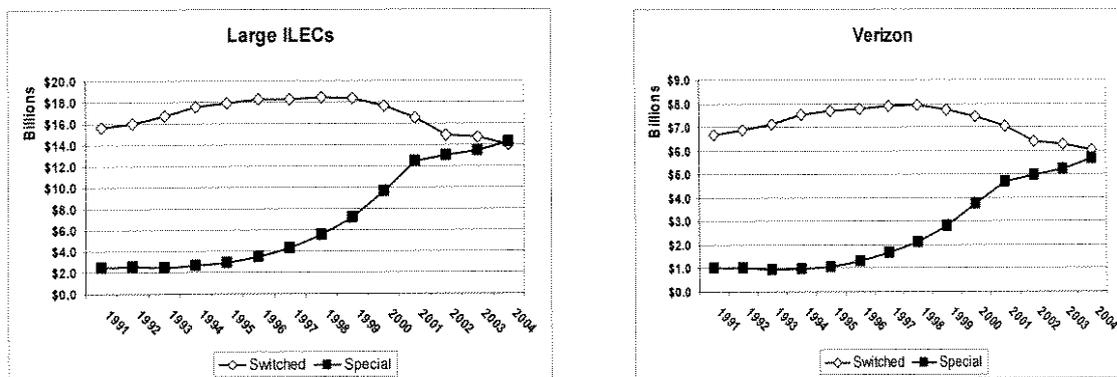
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<sup>7</sup> Average revenue per voice-grade equivalent circuit is a reasonable measure of the price that customers actually pay for the special access service they receive. Thus, if customers shift to lower-priced contract services, they will pay less for a unit of service, which, to them, is effectively a reduction in the price the ILEC charges for a particular service.

1. **ARMIS data**

12. As the Commission observes in its *NPRM*, annual special access revenues as measured by Report 43-01 of the Commission’s Automated Reporting Information System (“ARMIS”) for (former) Bell Operating Companies (“RBOCs”) increased under price cap regulation from \$2.5 billion in 1991 to \$13.5 billion in 2003 and from 12.8 percent of interstate revenues to 45.4 percent.<sup>8</sup> Using the same ARMIS Report, for large ILECs,<sup>9</sup> Figure 1 shows that special access revenue grew for large ILECs from about \$2.5 billion in 1991 to about \$13.4 billion in 2003 and to \$14.3 billion in 2004. Similar cumulative annual growth rates for the pricing flexibility period (post-2001) averaged 4.1 and 4.8 percent for 2001-2003 and 2001-2004, respectively. Stemming from the rapid growth in the demand for data services, this pattern of special access growth is in marked contrast to the decline in switched access revenue for large ILECs.

**Figure 1  
ARMIS Revenue**



Source: ARMIS 43-01, Table 1, Cost and Revenue, rows 1090, 1290, cols., m,r,h,s.

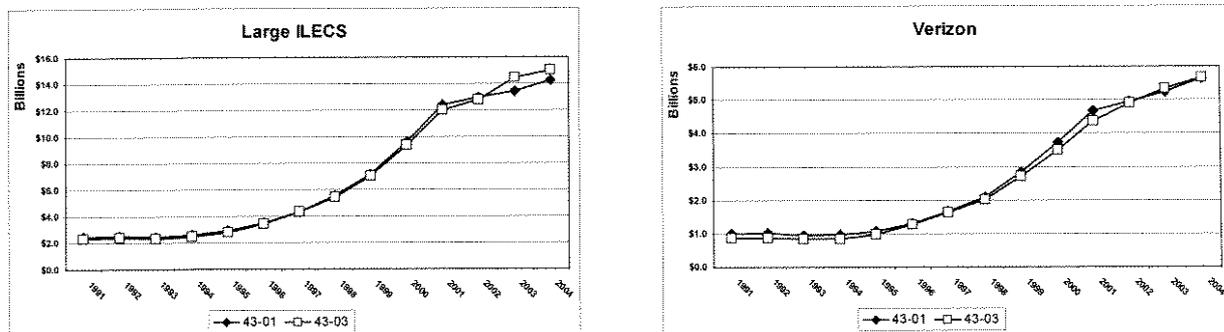
13. The ARMIS Reports include other, slightly different, measures of interstate special access revenue. FCC Report 43-03 (the ARMIS Joint Cost Report), Table 1, Regulated/Non-Regulated Data reports “special access revenue” as a category of network access service revenue on row 5083. Professor Alfred E. Kahn and I used this data source in December 2002 in our analysis of special access pricing flexibility submitted to the Commission in RM No. 10593. I used these data again in three Declarations regarding special access pricing, filed October 4,

<sup>8</sup> ARMIS 43-01, Table 1, Cost and Revenue, Rows 1090, 1290, columns h, s. *NPRM* at ¶ 3.

<sup>9</sup> To avoid ambiguity concerning the definition of RBOCs over time, I will report data for the consistent ARMIS classification “Large ILECs” in this analysis.

October 15 and December 1, 2004, adjusting the data (for Verizon) to remove DSL revenue from the series and to back out intrastate special access revenue, which was included on line 5083 beginning in 2003. These revenues measures are reasonably close, assuming the ARMIS 43-03 special access revenue is adjusted in 2003 and 2004 to remove intrastate revenues; see Figure 2.

**Figure 2. ARMIS Revenue**



Source: ARMIS 43-01, 43-03.

14. Since revenue is the product of price and quantity, this unambiguous increase in revenue could have been caused by an increase in demand, an increase in price or both. Obviously, an assessment of the effects of pricing flexibility must distinguish revenue increases stemming from volume increases from those caused by price increases. On that score, the evidence from ARMIS is clear: the growth in voice-grade equivalent special access lines far outstripped the growth in revenues. The *NPRM* reports a cumulative annual rate of growth of *special access lines* of 18 percent for the RBOCs during the pricing flexibility period (2001-2003),<sup>10</sup> while ARMIS data for large ILECs shows 17 percent annual growth for 2001-2003 and 15.3 percent for 2001-2004. In contrast, *special access revenue* for the large ILECs grew by only 4.1 and 4.8 percent in 2001-2003 and 2001-2004, respectively.

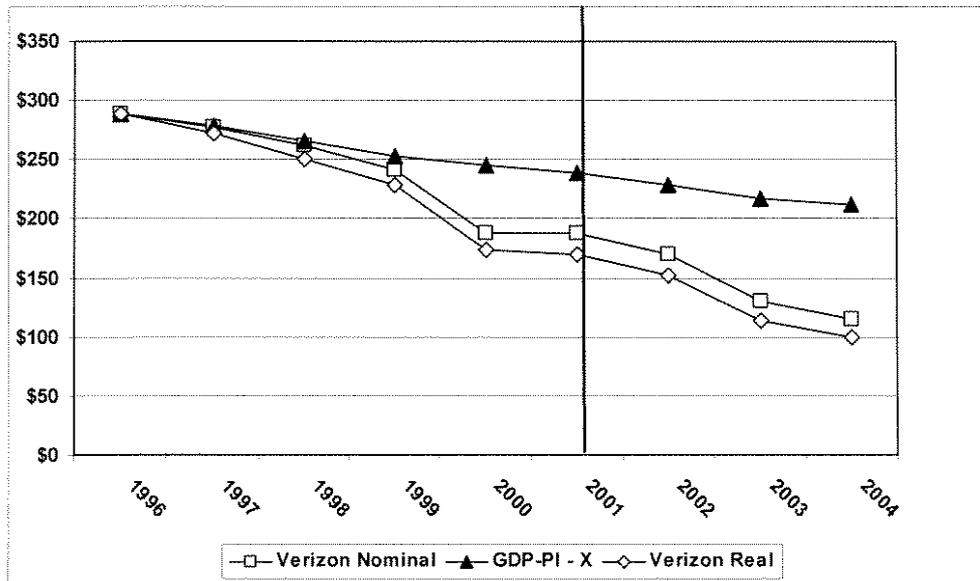
15. Putting these data together, we can calculate an average revenue per special access line as a measure of prices charged for special access facilities. However, because ARMIS data were not constructed for this purpose, we must be aware of certain limitations of the data and the methodology. First, several, slightly different, concepts of interstate special access revenue are presented in the different ARMIS accounts, and while careful analysis could reconcile the

<sup>10</sup> ARMIS 43-08, Table III, Access Lines in Service by Customer, row 910, cols fj and fk. *NPRM* ¶ 27.

numbers, such reconciliation is not necessary because they all tell the same story for the purpose of the present analysis. Second, the revenue data include revenue from DSL services, while the measure of lines does not. Hence recent growth in DSL revenue gives an upward bias to a measure of average revenue per line, causing the average revenue per line to appear much greater than it is. Third, ARMIS special access lines include both state and interstate access lines. Fourth, ARMIS measures special access lines on a voice-equivalent basis, and a shift in demand towards higher bandwidth services would result in a reduction in average revenue per line that is unrelated to price reductions. Fifth, average revenue per access line is dependent upon the average amount of channel mileage purchased per channel termination; if the ratio of channel termination to channel mileage increases over time, average revenue per channel termination will increase even though no price has increased. Sixth, revenue and lines are reported for the special access category on a Study Area basis that does not correspond to the MSA definitions used for pricing flexibility, so the data cannot be used to compare average revenue per line (i) across MSAs subject to different degrees of special access pricing flexibility, (ii) between channel terminations connecting the serving wire center to the end user and channel terminations connecting the ILEC switch to a carrier's Point of Presence ("POP") channel terminations or (iii) between channel terminations and channel mileage.

16. Nonetheless, even with those caveats, the picture that emerges from the ARMIS average revenue per line data is quite clear: average revenue per line has decreased over the 1996 – 2004 period and decreased faster during the pricing flexibility period (2001-2004). Figure 3 (and Table 1) compares average revenue per line from the ARMIS 43-01 Report cited in the *NPRM* for Verizon with the price cap index governing special access prices since 1991. Using the same ARMIS data source as the *NPRM*, we see that average special access revenue per line for Verizon falls sharply over the 1991-2004 period and falls faster during the price flexibility period (2001-2004) than during the preceding period (1996-2001). In real terms (*i.e.*, relative to inflation), Verizon special access average revenue per voice-grade equivalent fell even faster: at 10 percent per year from 1996 to 2001 and at 16.6 percent per year from 2001 to 2004. Most impressively, average revenue per line fell significantly faster than required by the price cap index (GDP-PI – X) both before and after the pricing flexibility period.

**Figure 3**  
**Verizon Special Access Revenue per Voice Grade Line**



Source: ARMIS 43-01, 43-08.

17. The price cap LECs, including Verizon, have been free since 1991 to increase special access prices provided an index of those prices did not exceed the GDP-PI – X index. The fact that prices fell much faster than GDP-PI – X indicates that competitive forces have constrained LEC special access pricing, as anticipated by the Commission’s pricing flexibility decision. In addition, since 1996, average revenue per line fell much more rapidly in the post pricing flexibility period than in the 1996-2001 period before pricing flexibility. Both of these facts suggest that competitive pressure rather than price cap regulation has controlled the aggregate level of special access prices.

18. Several aspects of this calculation require explanation. First, the count of special access voice-grade equivalent lines does not include DSL lines, because DSL is provided over switched access lines. Unfortunately, DSL revenue is included as special access revenue in the ARMIS reports. Moreover, DSL revenue has been growing rapidly in recent years, so that including DSL revenue in the numerator but not including DSL lines in the denominator would give an upward bias to the growth rate of special access revenue per voice-grade equivalent access line. Thus, Verizon’s special access revenues were adjusted to remove DSL revenue. I obtained DSL revenue data from Verizon for 2002 - 2004 and conservatively assumed that the annual growth

rate for 2002 – 2003 applied to all previous years.<sup>11</sup> I then subtracted these DSL revenues from ARMIS special access revenue.

19. Second, the price cap index (GDP-PI – X) follows the access tariff filing schedule, so that it is measured from July to July. GDP-PI and X for year *t* were thus calculated as the average values for year *t* and *t-1*. Third, the column labeled GDP-PI – X was calculated by applying the percentage change in the index as if the initial price were \$828. Fourth, the real revenue per line calculation expresses the price in 1991 dollars, using the GDP-PI as the measure of inflation.

20. The same calculation applied to the Large ILEC data from the ARMIS 43-01 Report shows a similar growth pattern. Large ILEC average revenue per voice grade line fell by about 10 percent per year over the 1991-2004 period. The rate of price reduction slowed immediately prior to the pricing flexibility period and accelerated during the period, as shown in Table 2. Thus, for the Large ILECs, average revenue per voice grade access line fell faster than required by the price cap index and faster during the pricing flexibility period than before.

## **2. Revenue and demand data for individual special access services**

21. Of course, the calculation above does not consider the fact that the mix of special access services customers purchase need not stay constant over time. If, for example, customer demand shifted from DS-1 or DS-3 towards higher- capacity OCn services — services whose price per voice-grade equivalent is less than DS-1 or DS-3 services — average revenue per line would measure accurately what customers are paying per voice-grade equivalent: *i.e.*, customers would be paying less for equivalent amounts of capacity. But in this case, average revenue per line would overestimate any reduction in the price actually charged for particular special access services. Similarly, if customers purchase more channel mileage per channel termination over time, average revenue per voice-grade equivalent would rise, but no special access price need have risen.

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<sup>11</sup> The assumption is conservative because (i) DSL is a new service, and annual growth rates would be expected to fall over time and (ii) overstating DSL revenue in the early years has the effect of reducing special access revenue in the early years, which increases its rate of growth over time. In addition, DSL revenue was \$0 before 1998 because Verizon did not provide the service. DSL revenue was also set to \$0 for 2001 because merger conditions required that it be provided through an affiliate and little or no DSL revenue was reported in ARMIS that year.

22. A simple way to take this into account is to observe revenues and demands for individual services. To that end, Verizon has calculated revenue and volume data from 1999 – 2004 for DS-1 and DS-3 services separately, breaking out channel termination and channel mileage volume and revenues. These data are then disaggregated into demand and revenue from services subject to price cap regulation and Phase II pricing flexibility.

23. Note that while these data give a more detailed picture of actual price changes than do the average revenue per voice-grade equivalent data from ARMIS, they by no means represent the complete story regarding special access pricing. According to Verizon data, DS-1 and DS-3 circuits comprise less than **BEGIN VERIZON CONFIDENTIAL** **END VERIZON CONFIDENTIAL** of its special access voice-grade equivalents as of September 2004.<sup>12</sup>

24. A feature of the pricing flexibility regime is that an ILEC in a given MSA can have pricing flexibility for channel mileage and POP channel terminations but not for end user channel terminations.<sup>13</sup> Hence in many MSAs, one cannot classify ILEC special access *circuits* as unambiguously subject to price caps or pricing flexibility: a circuit containing end user channel terminations and channel mileage could be regulated partly by pricing flexibility and partly by price caps. With volume and revenue data for channel terminations and channel mileage subject to price cap and pricing flexibility MSAs, we cannot meaningfully combine channel terminations and channel mileage into a circuit and compare circuit pricing between Price Cap and Pricing Flexibility MSAs directly.

25. We can, however, make such comparisons at an aggregate level, using average revenue per DS-1 and DS-3 circuits over time where the circuits are assumed to have constant

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<sup>12</sup> *Ex Parte* Declaration of William E. Taylor on Behalf of Verizon, Table 5, *In the Matter of Unbundled Access to Network Elements and Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, WC Docket No. 04-313, CC Docket No. 01-338.

<sup>13</sup> The *Pricing Flexibility Order* divides MSAs into three areas for Phase II pricing flexibility. For dedicated transport, POP channel terminations and all other special access services, an ILEC may exercise Phase II pricing flexibility in an MSA for which competitors have collocated in at least 50 percent of the wire centers or in wire centers comprising at least 65 percent of the incumbent's revenues for these services. For end user channel terminations, the standards rise to competitor collocation in at least 65 percent of wire centers in the MSA or in wire centers comprising at least 85 percent of the incumbent's revenue in the MSA for the services in question. See *Pricing Flexibility Order* ¶¶ 148-149.

proportions of channel terminations and channel mileage. Such changes in the average revenue per DS-1 and DS-3 circuit are useful in assessing whether the introduction of limited pricing flexibility for ILEC special access services permitted Verizon to raise prices. Looking individually at DS-1 and DS-3 circuits eliminates the effect of possible changes in the mix of service bandwidths on average revenue per minute; similarly, holding channel mileage per channel termination constant eliminates effects of changes in mileage per circuit on average revenue per circuit.<sup>14</sup> The results are average revenues per circuit that measure changes in the price of channel terminations and channel mileage, including ordinary month-to-month services, as well as services sold through term and volume contracts.

26. For all of Verizon, these data show that DS-1 and DS-3 special access prices fell between 2002 and 2004, averaging nominal annual reductions of 4.2 and 6.1 percent per year and real annual reductions of 5.7 and 7.6 percent respectively. Over the 1999-2004 period where full data are available only for Verizon East, annual nominal reductions averaged 3.1 and 3.5 percent and real reductions averaged 4.8 and 5.2 percent for DS-1 and DS-3 circuits respectively. There is some evidence that price reductions in Verizon East accelerated during the price cap period, as the reduction for the 1999-2000 period is less than that for the 2001-2004 period. However, as discussed below, such differences may not be statistically significant, as they depend on the classification of one or two data points. The data are shown in Table 3.

27. The calculations in Table 3 require some explanation. First, Verizon provided me with revenue and volume data for channel terminations and channel mileage, separately for Verizon East and Verizon West. Data were available from 1999 through 2004 for Verizon East and from

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<sup>14</sup> While channel mileage per channel termination would probably not change much over time for actual circuits, the ratio of pricing flexibility CMs to pricing flexibility channel terminations changes a great deal over time because of the different rates at which CMs and channel terminations receive pricing flexibility. Over **BEGIN VERIZON CONFIDENTIAL** **END VERIZON CONFIDENTIAL** percent of DS-1 and DS-3 CMs were subject to pricing flexibility by 2004, while only **BEGIN VERIZON CONFIDENTIAL** **END VERIZON CONFIDENTIAL** percent of DS-1 channel terminations and **BEGIN VERIZON CONFIDENTIAL** **END VERIZON CONFIDENTIAL** percent of DS-3 channel terminations had Phase II pricing flexibility by that date. Thus, for DS-1s, CMs per channel termination from 1999-2004 (i) increased from **BEGIN VERIZON CONFIDENTIAL** **END VERIZON CONFIDENTIAL** for channel terminations and CMs subject to pricing flexibility and (ii) fall from **BEGIN VERIZON CONFIDENTIAL** **END VERIZON CONFIDENTIAL** for price cap CMs and channel terminations.

2002 through 2004 for Verizon West. Second, average channel termination revenue per channel termination and average channel mileage revenue per channel mileage were calculated separately for Verizon East and Verizon West. To combine channel termination and channel mileage prices into a single price for a DS-1 or DS-3 circuit, I took the 2002 average channel mileage per channel termination separately for DS-1s and DS-3s separately for Verizon East and Verizon West.<sup>15</sup> Effectively, this calculation prices out a circuit over time containing one channel termination and a fixed amount of channel mileage, equal to the average value in 2002. The results in nominal terms are shown visually in Figure 4.

Figure 4  
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28. These average annual price reductions can be compared with the special access price cap indexed by  $GDP-PI - X$ , where GDP-PI and X are measured from July to July, as required by the annual interstate access tariff filing.<sup>16</sup> The parameters actually used in the calculation of the price cap index are shown in Table 4. Averaged across Verizon East and West, the average revenue per circuit for both DS-1 and the DS-3 circuits fell at a faster annual rate in the 2002-2004 period than the price cap index.

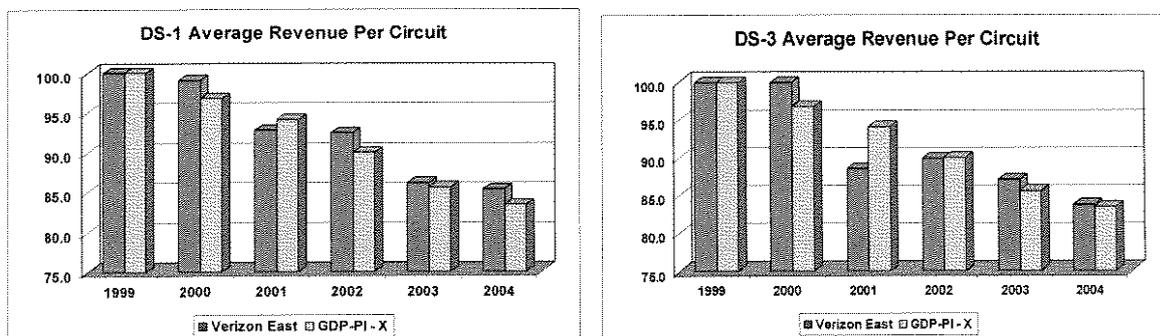
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<sup>15</sup> Average mileage per channel termination is quite different for DS-1 and DS-3 circuits and for Verizon East and Verizon West. CM/channel termination also varies over time, decreasing for DS-1 and increasing for DS-3 circuits. For example, for Verizon East, CM/channel termination for DS-1 and DS-3 circuits averaged **BEGIN VERIZON CONFIDENTIAL**  
**END VERIZON CONFIDENTIAL** miles, respectively. In the West, CM/channel termination averaged **BEGIN VERIZON CONFIDENTIAL**  
**END VERIZON CONFIDENTIAL** miles for DS-1 and DS-3 circuits, respectively.

<sup>16</sup> For example, the value of X for 2001 (4.75 percent) represents an average of 3.0 percent from January through July and 6.5 percent from July through December. Similarly, the value of 4.3 percent for 2004 represents an average of 6.5 percent and 1.63 percent, which was the effective X for the July-December 2004 period. A special access service priced at the price cap would have fallen from 100.0 to 83.4 over the 1999-2004 period at an annual rate of 3.56 percent.

29. Over the longer period for which Verizon East data are available, Figure 5 compares indices of actual Verizon East DS-1 and DS-3 circuit prices with the price cap index for 1999 through 2004. These data clearly refute any story of massive price increases for DS-1 and DS-3 services after pricing flexibility was begun in 2001. In fact, the story is more interesting. DS-1 and DS-3 prices fell dramatically for Verizon East between 2000 and 2001; in fact, they fell at a much faster rate than would have been required by the price cap formula. Possible explanations include a national recession and the telecommunications industry meltdown.

**Figure 5**  
**Average Revenue Per Voice-Grade Circuit**  
**Verizon East**



DS-3 circuit prices then rose between 2001 and 2002, and DS-1 prices were essentially constant that year. The price cap index, however, fell sharply. This slowdown in the reduction of special access prices is possibly associated with changes in market conditions combined with the beginning of the implementation of Phase II pricing flexibility, which allowed some previously-regulated prices to rise towards competitive market levels. Special access prices then fell again between 2002-2003 and 2003-2004, indicating either a change in market conditions or market strategy, based on additional experience with pricing flexibility. By the end of 2004, DS-1 circuit prices had fallen at about the same annual rate (-3.1%) as the price cap index (-3.6%) and slightly slower than DS-3 circuit prices (-3.5%). See Table 5.

30. Data for channel terminations and channel mileage individually are shown in Table 6 for DS-3 services and Table 7 for DS-1 services. In interpreting these data, the relationship between channel terminations and channel mileage is important. For nearly all transactions, special access is sold as a bundle of channel terminations, channel mileage and other services. Hence,

the prices of the individual components of the bundle do not, by themselves, indicate anything about the competitiveness of the marketplace in which the bundles are sold.

31. Another feature of the data shown in Figure 5 is the variance in special access prices compared with the variance in the price cap index. This illustrates two problems: the difficulty in applying price cap regulation in markets subject to vigorous price competition and the related problem in assessing whether pricing flexibility is effective based on a short series of volatile data. Of course, competition in actual markets is messy, unpredictable and rarely smooth over time. As shown in Figure 5, the average annual actual price change for the entire period (1999-2004) was approximately the same as the average change in the price cap index, but the pattern of price changes was very different. Indeed, if Verizon had received Phase I or II pricing flexibility in all of its MSAs, the swings in its annual price changes might have been even more dramatic and even more dramatically different from the steady reduction in the price cap index. Moreover, even if the application of the price cap index have produced lower prices than those observed today, the difference would more likely reflect flaws in the application of price cap regulation than imperfections in market forces. Thus, even if the price cap index accurately tracks the long run average rate of reduction of unit costs and prices, it is far too blunt an instrument to impose each year on the prices of a regulated firm in a competitive market.

### **3. Price differences between price cap and pricing flexibility special access services**

32. The *NPRM* (§ 76) asks for

parties to comment on whether Phase II pricing flexibility for special access has produced substantial and sustained price increases in those MSAs for which Phase II pricing flexibility was granted

and urges

[t]hat this information would be of significant benefit to our analysis.

The *NPRM* then requests parties to calculate price indices and revenues for all special access services so that average price changes could be compared between price capped and pricing flexibility services.

33. Verizon's special access revenue data separates revenue, lines and mileage for DS-3 and DS-1 services subject to pricing flexibility and subject to price caps for the 1999-2004 period.<sup>17</sup> However, as I discuss below, identifying changes in average revenue per unit subject to pricing flexibility with changes in service *prices* in pricing flexibility areas is problematic. Nonetheless, the basic data do show that average revenue per special access facility subject to pricing flexibility fell in real terms for DS-3 and DS-1 circuits. In particular, even though the data include circuits purchased at month-to-month rates, average revenue per DS-3 and DS-1 channel termination subject to pricing flexibility fell over the period at an annual rate of 5.8 and 2.4 percent respectively. See Table 8.

34. There are several problems with interpreting these data. First, as Figure 5 shows, there is considerable variation from year to year even in aggregate measures of average revenue per special access circuit, and insufficient time has passed since many MSAs were reclassified to assess whether a price change was "substantial and sustained." In the Spring of 2001, 11 Verizon MSAs were granted Phase II pricing flexibility for end user channel terminations and 40 MSAs were granted Phase II flexibility for POP channel terminations and channel mileage. By December 2004, a significant fraction of Verizon's DS-1 and DS-3 channel mileage facilities had been granted Type II pricing flexibility, while the majority of channel terminations had not.<sup>18</sup> In fact, by the Spring of 2004, 25 MSAs were granted Phase II relief for the end user channel terminations and 62 for POP channel terminations and channel mileage. At most four years of annual pricing data would be available, and given the massive changes in the telecommunications marketplace since 1998, it would be difficult to identify a substantial and sustained change in the pricing structure that could be attributed to pricing flexibility.

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<sup>17</sup> These data distinguishing pricing flexibility from price caps are not available for Verizon West and only Verizon East data is reported.

<sup>18</sup> The lower proportion of channel terminations having Phase II pricing flexibility is due to the fact that Type II pricing flexibility for end user channel terminations requires a higher threshold of CLEC collocation than for POP channel terminations and CMs. Most DS-1 channel terminations are end user channel terminations and only a small fraction of them have received pricing flexibility. A large fraction of DS-3 channel terminations are POP channel terminations and, presumably, about **BEGIN VERIZON CONFIDENTIAL END VERIZON CONFIDENTIAL** percent of them have received pricing flexibility.

35. Second, the fact that an MSA is not necessarily assigned exclusively to the price cap or pricing flexibility categories makes the comparison cited by the *NPRM* — between services provided under price caps and under pricing flexibility — difficult to calculate. While revenues and quantities are shown separately for channel terminations subject to price caps and pricing flexibility and for channel mileage subject to price caps and pricing flexibility, these data do not distinguish between end user and POP channel terminations directly, and it is likely that a high proportion of channel terminations subject to pricing flexibility are POP channel terminations and a high proportion of channel terminations subject to price caps are end user channel terminations. Thus, a comparison of average revenue per channel termination between those subject to price caps and those subject to pricing flexibility will yield a biased estimate of the effect of regulation because it will also include differences, if any, between prices of end user and POP channel terminations. More generally, the change in average revenue per pricing flexibility channel termination or channel mileage does not represent the change in average revenue over time derived from the same channel terminations or channel mileage. Rather, each year after 2001 brings new channel terminations and channel mileage into the pricing flexibility category, and the annual difference in average revenue per channel termination or channel mileage includes both the effect of price changes for existing pricing flexibility channel terminations and channel mileage and any differences in average revenue per channel termination or channel mileage from the newly reclassified channel terminations or channel mileage.<sup>19</sup>

36. Third, from an economic perspective, it is unclear what to make of a significant and sustained price increase in an MSA granted Phase II pricing flexibility, if one were to occur and it could be accurately identified. Treating a small but significant nontransitory increase in price as an exercise of market power assumes that the initial price is a competitive market price. Suppose 10 years of price cap regulation had constrained ILEC special access prices to lie below a competitive market level. In that case, a significant and sustained price increase when price cap regulation was removed would be welfare-increasing rather than an exercise of market power.

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<sup>19</sup> For example, for DS-1 services, the average channel mileage per channel termination subject to pricing flexibility is about 15 times the average channel mileage per channel termination subject to price caps.

#### 4. Summary of pricing evidence

37. The *NPRM* seeks evidence of substantial and sustained price changes during the pricing flexibility period. The facts that the time period is short and prices vary from year to year make it difficult to characterize measured changes in growth rates of prices as “substantial and sustained.” One way to judge whether a price change is substantial and sustained is to account statistically for the number of observations and the variation in the data. Instead of measuring growth rates as geometric growth from the beginning point to the end point of a before and after period, we can measure geometric growth as the coefficient  $\beta_1$  in the linear model

$$\text{LN}(P_t) = \beta_0 + \beta_1 t$$

where  $\text{LN}(P_t)$  represents the natural logarithm of price or average revenue per line in year  $t$ . Allowing the coefficients to vary between the price cap period and the pricing flexibility period, we can then test statistically whether the evidence implies that the growth rate of prices ( $\beta_1$ ) changes between periods and whether there was a one-time shift in prices ( $\beta_0$ ) associated with the implementation of pricing flexibility. In both the ARMIS data and the Verizon East DS-1 and DS-3 average revenue per circuit data discussed above, there is no statistically significant change in the growth rate or the intercept between the pre-pricing flexibility period (2000 and earlier) and the post-pricing flexibility period (2001-2004).

38. The data examined here is entirely based on average revenue per unit of service, rather than tariffed prices. As noted above, the ARMIS data represents an average of special access revenue per voice-grade line, and, as such, differs from a pure economic price index for several reasons. First, if higher bandwidth services are priced lower than low bandwidth services on a voice-grade equivalency basis, then a shift of customers from (relatively) expensive low-bandwidth services to (relatively) cheap high bandwidth services would cause average revenue per voice-grade equivalent to fall, even if there were no changes in the underlying prices of either service. Second, a shift of customers from simple circuits without much mileage to complex circuits with more mileage per channel termination would cause average revenue per voice-grade line to increase even though no price might have increased. Third, ordinary month-to-month prices for individual services might remain unchanged, while a shift of customers to discounted term and volume contracts would reduce measured average revenue per unit of

service but without any reduction in tariffed prices. In each of these cases, customers paid a lower price for the service received.

39. A shift of customers to lower-priced, high-bandwidth services reduces the price that a customer pays, whether or not any price that the carrier charges is actually reduced. Similarly, when customers move to discounted contract services, they pay a lower price and are (by revealed preference) better off for having the option. Thus, whether competition forces actual tariffed prices to fall or forces Verizon to offer lower-priced service packages that customers prefer, the competitive process is working, and all customers are better off.

40. Nonetheless, to control for these possible sources of changes in average revenue per unit of service, I calculated average revenue per channel termination and channel mileage separately for DS-1 and DS-3 services. I then calculated an average revenue per DS-1 and DS-3 circuit, holding the ratio of channel mileage to channel terminations fixed at its 2002 level. These calculations thus eliminate any bias from possible changes in the bandwidth of services purchased or in the amount of mileage purchased per channel termination.

41. The remaining difference — the effect of lower-priced services entailing term and volume contracts — is voluntary. Customers do not have to purchase these offers, and, to the extent they do, they are better off. Customers who choose such services pay an effectively lower price, albeit for a service that entails different commitments from ordinary month-to-month service. In particular, month-to-month service entails higher costs to all suppliers of the service, so that in effectively competitive markets, we would expect to see higher prices for such services. In particular, the higher churn rate of month-to-month customers means that any supplier would have to charge a higher price to amortize significant up-front, non-recurring costs over the shorter expected tenure of the customer. Such costs directly include network design, marketing and customer acquisition. An indirect source of costs is the option value of month-to-month service, in which the supplier bears the risk that network investment might be stranded, either by the loss of a customer or by technical change. When facilities are sold under long-term contract, both parties share these costs over the term of the contract; when facilities are sold on a month-to-month basis, the carrier must charge either a higher upfront charge or higher monthly rates to ensure a reasonable chance at recovering the investment.

42. The evidence is clear that ILECs (and Verizon in particular) have not increased their average revenue per voice-grade special access circuit by anything resembling a substantial and sustained amount. On the contrary, the average revenue per voice-grade line decreased. Moreover, even if the data had shown a significant increase in prices for special access services (which it does not), such price increases would not necessarily imply that the ILEC was able to exercise market power. Market power is defined in economics as

the ability of a firm (or group of firms, acting jointly) to raise price above the competitive level without losing so many sales so rapidly that the price increase is unprofitable.<sup>20</sup>

Thus, price increases above the *regulated* price level do not necessarily signal the presence of market power.<sup>21</sup> In the current case, it would not be surprising to see some special access price increases in some areas because those prices are not necessarily equal to competitive market prices.

43. Special access prices have been pervasively regulated forever. Until 1991, those prices were regulated under rate of return regulation, which applied three sets of accounting rules to company's accounting costs to separate them between regulated and unregulated services, between interstate and intrastate jurisdictions and finally among a wide range of interstate access services. Such prices could be said to be "cost-based," (because that is a very elastic term) but not based on *economic* costs. The costs derived from the historical books of account and allocated to individual special access services by the regulatory Cuisinart of fully-distributed costs do not approximate the forward-looking incremental costs of producing another unit of service. Furthermore, in economics, the conditions under which a competitive market price is determined exclusively by cost — even measured correctly — do not hold for

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<sup>20</sup> W.M. Landes and R.A. Posner, "Market Power in Antitrust Cases" *Harvard Law Review* Vol. 95 (1981), p. 937 (emphasis added).

<sup>21</sup> In antitrust economics, this error — treating an increase from the current price as an exercise of market power — is called the "Cellophane fallacy," after the Supreme Court decision in which it most prominently appeared. See, e.g., R. Schmalensee, "Horizontal Merger Policy: Problems and Changes," *Economic Perspectives*, Vol. 1 (1987), pp. 41-54.

telecommunications services, primarily because of the presence of fixed costs.<sup>22</sup> That is, in competitive markets for services produced by multi-product firms having a significant proportion of fixed costs, service prices will necessarily depend on the demand conditions in each market, as well as on forward-looking economic costs.

44. After 1991, special access prices were determined by the application of price cap regulation to the going-in prices determined by rate-of-return regulation. As the Commission observes (§ 12) in the *NPRM*, application of the price cap formulae does not transform accounting-cost-based rates into market-based prices, even if the price cap formulae are determined correctly. Hence, we should not presume that these pervasively regulated prices for special access services approximate in any way what the price levels would be in an unregulated competitive environment.

45. In addition, the Commission recognized in the *Pricing Flexibility Order* (§ 155) that Phase II pricing flexibility could result in price increases for some services in some MSAs.

155. We recognize that the regulatory relief we grant upon a Phase II showing may enable incumbent LECs to increase access rates for some customers. We conclude that this relief nonetheless is warranted upon a Phase II showing for two reasons. First, some access rate increases may be warranted, because our rules may have required incumbent LECs to price access services below cost in certain areas. Second, we find that a Phase II showing is sufficient evidence that competitors' market presences have become significant, and that the public interest is better served by permitting market forces to govern the rates for the access services at this point. In addition, we note that these services generally are purchased by IXCs, not individual end users. IXCs are sophisticated purchasers of telecommunications services, fully capable of finding competitive alternatives where they exist and determining which competitor can best meet their needs.

Thus even where prices are thought to be above cost, the Commission found that market-determined prices will serve customers better than regulated prices where competitors' market presence is sufficient to discipline prices.

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<sup>22</sup> J.A. Hausman, "Regulated costs and prices in telecommunications," in G. Madden and S. Savage (eds.), *The International Handbook of Telecommunications Economics*, Vol. II, Edward Elgar (2000), Chapter 12.

## **B. Other evidence regarding market competitiveness**

46. Despite its claim (§ 72) that it was interested in “methods of assessing competition (short of conducting a burdensome market-by-market market power analysis),” the *NPRM* (§§ 78-80) sets out the standard elements of a market power investigation, including defining the relevant product and geographic markets and measuring (or discussing qualitatively) the elements that determine the price elasticity of demand facing the ILEC at current prices: market demand and supply elasticities, market share and entry barriers. This is the very analysis that the triggers in the Pricing Flexibility Order were instituted to avoid. While a full structural analysis of special access markets may have been necessary at the outset to determine that competition was sufficient that pricing flexibility was necessary, we now have four years of actual marketplace experience. And as described in the previous section, there is no evidence of the exercise of market power in the prices charged on average for all special access services or for DS-1 and DS-3 services individually.

### **1. Scope of services and geographic areas**

47. The *NPRM* raises questions concerning the appropriate products and geographic areas in which special access services should be analyzed or regulated for present purposes. In general, the Commission asks whether the scope of products or geographic areas should be smaller than those currently recognized in the pricing flexibility plan: *i.e.*, transport and two flavors of channel terminations for products and MSAs for geography. On the contrary, marketplace evidence implies that the products and geographic areas should be wider than those to which the pricing flexibility regime currently applies. Customers for special access services are carriers and enterprise customers who buy arrays of special access services to build out their networks, as opposed to individual special access services such as channel terminations or channel mileage. And the locations where these services are provided are frequently national or regional, rather than specific to a single MSA.

48. In previous assessments of market power, the Commission defined product and geographic scope broadly, finding, for example, in its decision to classify AT&T as non-dominant in long distance services, that

As our analysis below demonstrates, AT&T does not have the ability unilaterally to control prices in the overall interstate, domestic, interexchange market. The

record indicates that, to the extent AT&T has the ability to control price at all, it is only with respect to specific service segments that are either de minimis to the overall interstate, domestic, interexchange market, or are exposed to increasing competition so as not to materially affect the overall market. As our Interexchange Competition orders and the evidence in this case indicate, most major segments of the interexchange market are subject to substantial competition today, and the vast majority of interexchange services and transactions are subject to substantial competition. Accordingly, we believe that assessing AT&T's market power by an "all-services" standard (i.e., requiring AT&T to establish that it lacks the ability to control price in all service segments), would result in a situation where the economic cost of regulation outweighs its public benefits.<sup>23</sup>

In the current case, there is no dispute that Verizon cannot unilaterally control prices for special access services in the areas where "the vast majority" of special access transactions take place. Subdividing the scope of the services and geographic areas here would similarly raise regulatory costs and, more importantly, delay the rate at which special access prices become free to respond to customer preferences and market forces.

49. Two pieces of marketplace evidence suggest that subdividing the relevant services by bandwidth or customer type or subdividing the relevant geographic areas by density zones within MSAs would produce sets of products and areas that would be too small to meet the economic tests for relevance.

50. First, the technology of special access services implies that the products should be broadly defined across specific special access services. Supplying special access services requires a large investment in a fiber network followed by smaller and fungible investments in the electronics that actually define the services provided. In economic terms, the cross-elasticity of supply among services of different bandwidths, for example, is quite high because the same fiber can be configured to provide services of all different bandwidths. If market prices evolve so that DS-1 circuits become more profitable than DS-3 circuits, competitors can rapidly shift capacity from the latter to the former without incurring such high fixed costs that the substitution would be unprofitable. Thus, if a hypothetical monopolist of DS-3 services were to attempt to increase the DS-3 price above the competitive level, suppliers of DS-1 services would reconfigure their electronics and use their fiber networks to provide DS-3 services and drive DS-3 profits back to a normal level.

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<sup>23</sup> *In the Matter of Motion of AT&T to be Reclassified as a Non-Dominant Carrier, Order, 95-*

51. Second, the *NPRM* (§§ 87-93) seeks comment on the possibility that setting the relevant geographic scope at the MSA level is too broad, specifically that MSA-level collocation coupled with a competitive transport trigger could permit BOCs to exercise market power in portions of the MSA where competitors do not serve. Actual marketplace evidence, however, suggests otherwise. While BOCs and their competitors could, in principle, employ different price structures across wire centers within MSAs, we do not observe such pricing in the real world. Rather, it appears that carriers offer discount plans that are largely company-wide. For example, each of Verizon's discount plans is offered in every MSA within a Verizon filing entity's service territory.<sup>24</sup> (Lew Declaration §§ 74-80) Each plan is offered under the same terms and conditions across MSAs (including both price cap and pricing flexibility MSAs) and, within an MSA, across wire centers in different density zones. Actual price levels vary across density zones and between price cap and pricing flexibility MSAs, but the same prices (and other terms and conditions) are charged within each of the three price bands in pricing flexibility MSAs everywhere in the region served by the tariff filing entity.

52. The reason why Verizon and other suppliers have not geographically deaveraged prices to the greatest extent possible is because customers prefer broadly averaged prices, and most special access customers buy services in multiple MSAs. Large enterprise customers buy network services for their business locations, which frequently span global, national or regional geographies.<sup>25</sup> Competition for such customers forces prices to competitive market levels in all geographic areas, irrespective of the degree of competition in each wire center. Similarly, wholesale carrier customers seek to buy services in many locations, so that even though the level of competition may vary from wire center to wire center, market forces compel pricing for special access services to be footprint-wide.

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427, released October 23, 1995, (*AT&T Non-Dominant Order*) ¶ 26, footnotes omitted.

<sup>24</sup> There are five groups of Verizon "filing entities:" (i) the company serving the former Bell Atlantic region, (ii) New York, (iii) New England, subdivided into Massachusetts and the other New England states, (iv) the former GTE territory, and (v) the former Contel region. The tariff filing entity for the former GTE and Contel territories is generally the company serving each state.

<sup>25</sup> Bruno Declaration at ¶ 6.

53. Third, economics aside, there are practical reasons why the scopes of the relevant products and geographic areas used in the *Pricing Flexibility Order* should not be reduced. The purpose of adopting *triggers* for pricing flexibility (instead of an antitrust market power showing for forbearance from price regulation) was practical; by the time the analyses would be complete and the evidence assessed, market conditions would have changed. By the same reasoning, requiring more finely-tuned analyses of competition in smaller product or geographic areas would be similarly self-defeating. In addition, even though the *Pricing Flexibility Order* recognizes that basing a trigger analysis for pricing flexibility on a smaller geographic area than an MSA “might produce a more finely-tuned picture of competitive conditions,” it concluded that the additional detail obtained did not justify the increased expense and administrative burden associated with additional filings.

## **2. Demand and supply responsiveness**

54. The *NPRM* asks for evidence regarding the ability of customers to substitute away from ILEC special access services and the ability of competitors to serve such demand. Marketplace evidence that customers have alternatives to BOC facilities and carriers have capacity to serve them comes from the fact that competition continues to thrive. According to the 2004 UNE Fact Report, competitors control more than one-third of special access revenues, as a result of capturing half of the business from large enterprise customers and three-quarters of the high-capacity data business.<sup>26</sup> Moreover, despite the abundance of capacity and the telecommunications industry meltdown, special access capacity supplied by competitors continues to grow. According to data assembled in the 2004 UNE Fact report, competition for special access services has been growing over time, and continued to grow from 2002 to 2004: see Table 10.

55. Similar data specific to Verizon is reported in the Declaration of Quintin Lew, based on collocation data, survey data from GeoTel and GeoResults and marketing and investor information provided by the competitors themselves. An important fact that emerges from this data is the magnitude of fiber-based competition in addition to that which is collocated in Verizon wire centers. These data are important because in its *Pricing Flexibility Order* (§ 79), the Commission concluded

that irreversible, or "sunk," investment in facilities used to provide competitive services is the appropriate standard for determining when pricing flexibility is warranted,

Fiber networks in an MSA that do not collocate in an ILEC wire center represent irreversible investment in providing competitive special access services. Thus, the Commission's triggers, which measure irreversible investment by collocation, effectively undercount the extent of sunk investment in facilities in an MSA, which is the appropriate standard for determining whether pricing flexibility is warranted.

56. In assessing this information on the state of competition, the following economic considerations are important. First, in order that the market be effectively competitive, not every customer needs to have a choice of supplier for every special access service in every location. Economics 101 teaches that competition takes place at the margin: though the average customer may not be inclined to substitute away from Pepsi if it were to raise its price, there are enough customers indifferent between Pepsi and Coke and aware of their relative prices that Pepsi cannot profitably increase its price. In that sense, special access customers at the margin — large enterprise retail customers and wholesale carrier customers — can drive special access prices to competitive levels even where there may not be multiple competitors from which to choose. As discussed above, these customers buy a wide range of services over large geographic areas. They are also large and knowledgeable customers with every incentive to seek the provider offering the lowest price and best terms and conditions. In 1995, the Commission found that AT&T did not possess market power in long distance markets with respect to business customers because

business customers "routinely request proposals from carriers other than AT&T and accord full consideration to these proposals." Furthermore, we found that business users consider the offerings of AT&T's competitors to be similar in quality to AT&T's offerings. Purchasers of business services, the Commission found, were also more sophisticated and knowledgeable about the products they buy and often make decisions based on advice from consultants and in-house telecommunications experts about the service offerings and prices that are available to them. ... Accordingly, we affirm our findings in the First Interexchange Competition Order that business customers are highly demand-

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<sup>26</sup> 2004 UNE Fact Report, III-2.

elastic. The willingness of business and residential customers to switch long-distance providers is evidence of a lack of market power on the part of AT&T.<sup>27</sup>

The same logic applies to the carriers and business customers that purchase special access services.

57. Second, the technology for supplying special access services is characterized by a high proportion of sunk costs, and the possible loss of even a small fraction of customers to competitors for such a firm severely limits a firm's ability to impose supracompetitive price increases. When fixed and sunk costs are low, a competing service has to be a very close substitute to discipline the incumbent's prices: *i.e.*, a small price increase has to produce a disproportionately large loss in volume to be unprofitable, because when such a firm raises its price and loses volume, its revenue loss is almost completely offset by its cost savings. In contrast, firms with a high proportion of fixed costs (such as wireline carriers) cannot sustain large volume losses, because there is very little cost savings to offset the lost revenue. That is, competing telecommunications products do not necessarily need to be very close substitutes in order for attempts at supracompetitive pricing to be thwarted. Put another way, firms with large proportions of fixed or sunk costs need to retain large volumes of output in order to spread their fixed costs.

#### **IV. Regulation of Special Access Services**

58. The *NPRM* (¶ 22) reaches the tentative conclusion that special access services should continue to be regulated under a price cap regime subject to pricing flexibility where market forces constrain special access prices. It bases this conclusion on several observations regarding changes in special access since the *Pricing Flexibility Order* in 1999. Using ARMIS data, the *NPRM* compares rates of growth of demand, expense and investment before and after the *CALLS* and *Pricing Flexibility Orders*, concluding that unit costs have fallen due to economies of scale (¶¶ 26-29). From this observation, the *NPRM* silently concludes that changes in special access have not removed the need for continued price cap regulation, presumably because these reductions in unit cost were not reflected in reductions in price.

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<sup>27</sup> *AT&T Non-Dominant Order* ¶ 66, footnotes citing *First Interexchange Competition Order*, 6 FCC Red at 5887-88 omitted.

59. The *NPRM* (§§ 31-47) sets out considerations for resetting the various parameters of its pre-CALLS price cap plan. This discussion is entirely unnecessary. Special access services are among the most competitive of telecommunications services, and to return to some form of command-and-control regulation for these services would represent a sea-change in federal telecommunications regulatory policy and a change in wrong direction. Rather than implying that continued regulation is necessary, the evidence discussed in Mr. Lew's Declaration shows at least that price cap regulation should be retained only as a stop-gap measure in some geographic areas and that ILECs should be able to respond to RFPs and negotiate contracts everywhere.

60. In any case, for those areas where the Commission decides that the ILECs' special access services must remain rate-regulated, I would advocate the application of a single rate cap (at current rates) over all special access services which do not meet the requirements for Phase II pricing flexibility. That is, treat all special access services as a single basket and require that a revenue-weighted price index of those special access services not increase over time.

**A. Is continued regulation necessary?**

61. The Commission has long recognized that "price caps act as a transitional regulatory scheme until the advent of actual competition makes price cap regulation unnecessary" (*NPRM*, § 11). More than that, current experience with price caps for telecommunications services suggests that a price cap index cannot produce prices that reasonably emulate competitive market outcomes. The problem arises from the fact that the ILEC supplies multiple services over a common network, and like any firm producing multiple products, it faces different and changing demand conditions for these services. Consequently, prices regulated by means of formulaic annual price changes cannot reasonably be expected to emulate competitive market outcomes. Indeed, that is why we rely on markets in the first place.

62. Unfortunately, markets are notoriously noisy, unpredictable and sloppy: compare the annual changes in actual prices for Verizon's DS-1 or DS-3 services with the annual changes in the price cap index in Figure 5. Smooth annual changes in a price cap index — even if the parameters of the index are set correctly — cannot trace the likely annual changes in actual competitive market prices. Evidence of this problem can be seen in the evolution of price cap plans for intrastate services. As the initial set of GDP-PI – X price cap plans for local exchange and intrastate toll services have come up for renewal, almost no state commission has continued

with a garden-variety price cap plan. Rather, state commissions are limiting price regulation to a small set of services (generally mass market basic exchange services) and discontinuing application of an annual price cap index .

63. Price regulation is necessary, in theory, to control price increases in markets where the regulated firm could otherwise exercise market power. However, price regulation is not generally necessary to control price *decreases*. The only potential economic problem with a price decrease is that it could lower rates to a level that is anticompetitive or unduly discriminatory, but generic price cap regulation has no role in preventing either of these outcomes. Thus, it would make economic sense to allow the ILECs to reduce prices as market conditions warrant, generally taking the form of contract tariffs containing term and volume discounts. Because price reductions for some services and customers would not give the firm any additional ability to raise prices for other customers or services, no customers would be harmed — even customers who have limited alternatives to the ILEC's special access services — by allowing such pricing flexibility.

## **B. Mechanics of price cap regulation**

64. The *NPRM* sets out considerations for resetting the various parameters of its pre-CALLS price cap plan (§§ 31-47), focusing on the way the plan sets incentives for productivity growth and adjusts prices to account for demand growth over which the ILEC has no control. Assuming that the Commission determines that continued price cap regulation is necessary for some services in some areas, in my view, the productivity offset,  $X$ , should continue to be set no higher than the rate of inflation and the growth factor,  $g$ , should not be applied in any form to special access services.

### **1. The productivity offset**

65. After several unsuccessful attempts to set a productivity-based value of  $X$  in its price cap formula, the Commission in its *CALLS Order*, set  $X$  for special access services equal to inflation (as measured by GDP-PI) beginning with the 2004 annual filing, so that the annual change in the price cap index —  $\text{GDP-PI} - X$  — was zero. From an economic perspective, that value of  $X$  would be reasonable if the price cap plan were to continue in the future.

66. In the past, the Commission based X on various measures of telecommunications industry growth in total factor productivity (“TFP”). The Commission states (¶ 37) in the *NPRM* that it intends to set an X for the special access price cap that is independent of its regulation of switched access services and asks if a productivity-based X factor can be calculated uniquely for special access services. The economic answer is “no.” A productivity-based X-factor requires calculation of the TFP growth of the industry and of the economy as a whole. But in economic theory, TFP growth can only be calculated for the entirety of the output of the firm or industry. To see this, recall that TFP growth is simply the difference between the growth rates of physical outputs and inputs. To measure productivity growth for a single service of the firm, one would thus have to measure the growth in all of the inputs that were necessary to supply that service and no other service. But that calculation is impossible, both in practice and in principle. Special access services are not produced on a stand-alone basis; they use the same network facilities and managerial functions as all of the other outputs of a telecommunications firm. Because there is no economically meaningful way to measure the growth of inputs assigned exclusively to interstate special access services, it is impossible to calculate an economically meaningful productivity offset for special access services.

67. In economic theory, TFP growth for subsets of services in a multiproduct firm can be defined only under very restrictive circumstances that do not hold for telecommunications firms. Productivity growth is measured with reference to a production function which specifies the maximum output that can be produced from given quantities of inputs. Using that production function, total factor productivity growth is the difference between the rates of growth of a revenue-weighted index of maximum output quantities and an expenditure-weighted index of input quantities. If the firm produced multiple outputs, it would not be meaningful to speak of individual TFP growth rates for those outputs unless the production function could be written in a particular and very restrictive form in which:

- all outputs can be unambiguously separated into the different services;
- all inputs can be unambiguously separated into factors of production for the different services; and
- changes in inputs for one service do not affect outputs of another service.

These conditions imply that the cost function for the firm can be written as the sum of individual cost functions for the different services. These requirements are known as “separability” restrictions in economic theory, and in particular, they mean that the marginal rate of substitution among the factors of production for one service must be independent of the level of demand for other services. The presence and importance of economies of scope among telecommunications services that share a network means that the firm’s cost function cannot be separable, so that TFP growth cannot be measured independently for those different services.

68. In past calculations of X, the Commission has simply calculated a firm-wide value of X from the TFP growth of the industry and applied that X to all regulated services. This is not an unreasonable method, because if all services were price-cap regulated and subjected to a price cap formula based on a single X correctly calculated based on all outputs, the firm’s revenue would continue to equal its costs over time. Applying this approach to special access services, it appears that the current value of X in the *CALLS Order* is not unreasonable. Historical values of X (based on total firm output) for the telecommunications industry vary, but long run estimates are frequently in the range between 2 and 3 percent per year.<sup>28</sup> The recent collapse of the industry, the reduction in ILEC local exchange volumes and wireline long distance volumes suggests that updated productivity growth estimates should probably be lower. In any case, setting X equal to the future rate of inflation is a reasonably good approximation to the level of X that would be set on a firm-wide basis using a productivity offset plus an input price differential.

## **2. The growth factor**

69. The Commission asks (§§ 38-40) whether a growth factor similar to the one used in the price cap formula for the common line basket would be appropriate to include in its special access price cap formula. The economic answer is “no.”

70. The Commission considers this change because it observes (§ 40) in the ARMIS data that “special access line demand growth does not produce a proportional increase in special access costs.” First, it is not at all clear what the effect of an increase in special access lines has been on the economic costs of special access services. As discussed above, fully-distributed costs for

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<sup>28</sup> See T.J. Tardiff and W.E. Taylor, “Aligning Price Regulation with Telecommunications Competition,” *Review of Network Economics*, December, 2003, pp. 338-354.

particular services are not necessarily related to the economic costs of the service. Moreover, the freeze in separations factors implemented in June 2001<sup>29</sup> affects the investment and associated costs assigned to special access, so that changes over time in special access lines cannot be meaningfully compared with changes in special access costs.

71. Second, the g-factor in the common line basket was justified by a very different circumstance than a simple non-proportionality between output volumes and cost. In the common line basket, a substantial portion of the non-traffic sensitive costs assigned to that basket were recovered from the carrier common line charge on a per-minute basis. In this case, an unexpected increase in usage demand would result in an over-recovery of common line revenues. The g-factor was added to the common line basket price cap formula to attempt to split the returns from such increases in usage between the LECs and the long distance carriers. That case does not apply here, because there is no special access rate element that is set to recover a non-traffic sensitive cost on a per-minute basis.

72. Third, suppose the claim that special access lines grew faster than special access costs were actually true. This relationship might reasonably come about because of the presence of fixed costs: that is, costs that do not vary with the number of access lines. Even then, there would be no justification for the inclusion of a g-factor in the special access pricing formula. The calculation of X in the price cap formula, in principle, embodies whatever economies of scope and scale pertain to the industry. There is no assumption of constant returns to scale in the calculation of X, and whatever X emerges from the measurement, it has taken into account all possible sources of scale economies, including fixed costs. To include the g-factor in a price cap index with a conventionally-calculated X would effectively double-count the productivity growth associated with economies of scale in special access services. Continuing the price cap index from the *CALLS Order* — maintaining the current value of X equal to inflation without adding a g-factor — fully accounts for expected industry productivity growth including the effects of scale economies.

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<sup>29</sup> *Jurisdictional Separations and Referral to the Federal-State Joint Board*, CC Docket No. 80-286, *Report and Order*, 16 FCC Rcd 11382 (2001).

### 3. Rate structure

73. The *NPRM* seeks comments on the categories and subcategories that would be components of a special access price cap plan for those areas where Phase II pricing flexibility is not yet appropriate. At the most general level the *NPRM* asks "...parties to discuss the advantages and disadvantages of having a special access basket with relatively few categories or subcategories compared to one with many." And, it asks more specifically whether services be grouped by bandwidth, by elasticities of supply and demand, by wholesale/retail, by network function (channel termination or transport). Economic principles and the realities of the market place — intense competition for enterprise customers and carrier customers who often have their own local networks — imply that the rate structure should not inhibit the regulated firm's ability to compete by offering packages of services in whatever combinations customers want.

74. Competitors offer the full range of special access services from the lowest to the highest bandwidth, including retail and wholesale DS1s, DS3s, and OCn-level services to CLECs, IXCs ISPs and wireless carriers. (Lew Declaration ¶ 22(A)-(FF).) These carriers are free to adapt their rate structures to market conditions: *i.e.*, price services so as to attract more customers. Because Verizon and its competitors serve retail enterprise and wholesale carrier customers that buy services in price-capped MSAs as well as pricing flexibility MSAs, rate structures are essentially the same across those MSAs. An artificial regulatory constraint on Verizon's price-cap regulated special access rate structure would have distortionary effects in other MSAs where competition is fully developed and the bulk of the customers are located.

75. Accordingly, if some form of price cap regulation is deemed necessary in an MSA, the rate *structure* should not restrict the ability of the regulated firm to bundle and package services and rebalance rates in whatever ways customers want. The least restrictive structure for a price cap plan — *i.e.*, the one that permits regulated and unregulated firms to compete on the most equal basis — would place all special access services in a single basket, and whatever price cap is placed on the firm would be placed, in aggregate, on all special access services. Compared to the present price cap regime, there would be no separate categories and subcategories of special access services and no upper and lower pricing bands and no Service Band Index. Within the special access basket, the regulated firm could restructure rates in response to market forces — recognizing that the market forces in question would likely be imposed by regional, national or

global price competition that may have little to do with the circumstances of a particular price-capped MSA where few customers — and thus few competitors — are located. For example, suppose supply or demand conditions shifted for different bandwidth services increasing — in the short run — the market price for DS-1 services and reducing the price for DS-3 services. Since bandwidth is largely fungible, such a short-run price effect would probably not persist, but in the meantime, if DS-1 and DS-3 services were in separate sub-baskets, Verizon would be unable to replicate the competitively-determined relative price of DS-1 and DS-3 services in its price-capped MSAs.

**a. Implicit subsidies**

76. If the Commission established a single basket with no categories or subcategories, the regulated firm could gain pricing flexibility for less competitive services by lowering prices for more competitive services. To economists, that outcome should not necessarily be problematic, since we expect to observe efficient rate structures in effectively competitive markets where the markups of service prices over marginal costs are roughly in inverse proportion to the price elasticities of demand for the services. However, the Commission has stated that

a rate structure can create implicit subsidies if it does not reflect accurately the manner in which incumbent LECs incur the costs of providing a service. Therefore, rate structure rules are necessary in the absence of a significant market presence by competitors. Once competitors have established a significant market presence in an MSA, however, we believe it is no longer necessary to impose efficient rate structures on incumbent LECs. Therefore, we will eliminate our rate structure rules for particular services once an incumbent LEC demonstrates the development of a significant market presence by competitors for those services by satisfying the Phase II trigger.<sup>30</sup>

The economic problem with this standard is that the regulated rate structure that the Commission's rules impose on special access services has no claim to efficiency. While the "manner in which incumbent LECs incur the costs of providing a service" is an important constituent in an efficient rate structure, it is not the only consideration. It is only in perfectly competitive markets without fixed costs that prices are determined exclusively by costs. In effectively competitive markets with technologies dominated by fixed costs, prices and efficient rate structures depend on both costs and demand.

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<sup>30</sup> *Pricing Flexibility Order* ¶ 154.

77. In addition, efficient rate structures in which some service prices bear a disproportionate share of fixed common costs are not unusual. It is only when the implicit subsidy in question is a true economic subsidy — *i.e.*, when a service is priced below its total service long run incremental cost — that the rate structure could be considered anticompetitive. And competitors have adequate tools to deal with anticompetitive pricing without imposing an inefficient rate structure on all of the service of the regulated firm.

78. Finally, as described above, carriers tend to set special access rate structures voluntarily on a footprint-wide basis. Thus, Verizon's customers in price-capped MSAs face the same rate structures as Verizon's customers in pricing flexibility MSAs, where those rate structures are determined — presumably efficiently — by competitive market forces.

**b. Term and volume contracts**

79. Another aspect of the regulated rate structure is the terms and conditions under which services are packaged and contracts having term and volume commitments are offered. Term and volume contracts and bundled services are important channels by which special access services are bought and sold in the marketplace. Benefits to customers include stability and predictability of network costs, the ability to buy equipment and implement network systems specific to the special access services purchased, the ability to amortize network design and other upfront costs over the period of a contract, and reduced costs. All suppliers use these types of packages for selling these services; thus, limiting their use by one class of provider would distort the outcome in these markets that are subject to competition. As Professor Kahn and I explained:

Any carrier precluded from offering optional pricing plans with term and volume discounts would be placed at a significant competitive disadvantage in the special access market. Long-term contracts are used to minimize risk exposure and stabilize production requirements and costs over time. In addition, when the buyer or seller incurs heavy sunk costs as part of the transaction, both parties are better off under effective long-term contracts. Common examples of such costs in special access markets include network design of customer-specific facilities and the purchase of transaction-specific equipment and facilities. Under such contracts, the buyer and seller are both assured that (i) their sunk costs will eventually be recovered from the transaction for which the costs were incurred and (ii) up-front sunk costs can be amortized and recovered over the life of the transaction, better aligning costs with revenues. Long-term contracts thus have

salutary effects in the form of risk and cost reduction for both suppliers and customers.<sup>31</sup>

.... [Early termination] penalties are a standard practice in the offering of long-term contracts because without them, the discounts could not be offered. Obviously, if a customer could sign a long-term contract, obtain a discounted price on the seller's expectation that it will be fulfilled and then breach it without penalty when a better offer came along, such contracts, with the benefits they offer both parties, would be simply infeasible in the first place and end user customers would, ultimately, be the losers.

80. In sum, micro-regulation of the rate structure for special access services in price-capped MSAs is more likely to distort the competitive process and harm consumers than it is to impose an efficient rate structure and prevent anticompetitive prices. Particularly because rate structures in price-capped regulated MSAs are largely determined by rate structures in more competitive areas, there is little to be gained and much to be lost by continuing to impose category and subcategory pricing rules in price-capped MSAs.

### **C. Earnings sharing should not be reinstated**

81. The Commission's tentative conclusion to not resurrect earnings sharing (§ 44) reflects: (i) previous Commission findings, (ii) regulatory economic theory, and (iii) the pattern of similar decisions by state regulators. In reaching its tentative conclusion in the *NPRM*, the Commission found (§ 43) that "sharing severely blunts the incentives of price cap regulation by reducing the rewards for LEC efficiency gains" and that eliminating sharing "removed the last vestige of rate of return regulation that had created incentives to shift costs between services to evade sharing in the interstate jurisdiction."

82. The economic principles that support the elimination of earnings sharing — although clearly understood by the Commission — warrant at least a brief summary. As a general matter, earnings sharing mechanisms in price cap plans discourage efficiency, discourage investment, delay the offering of new services, promote the arbitrary allocation of costs, and lead to increased regulatory delays and regulatory costs. For telecommunications services, consumers are harmed by such distortions in the competitive process, not so much because one firm is

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<sup>31</sup> Declaration of Alfred E. Kahn and William E. Taylor On Behalf of BellSouth Corporation, Qwest Corporation, SBC Communications, Inc., and Verizon in FCC RM No. 10593, December 2, 2002 ("Kahn-Taylor Declaration" at 31 – 33.

artificially favored and another artificially penalized, but rather because different technologies are artificially favored or penalized. Much as shippers suffered from regulatory distortions in the treatment of railroads, trucks and barges, telecommunications customers would suffer the loss of more innovative products and more vigorous price competition that would ensue from the weakening of competition produced by regulatory decisions that inadvertently favor or discourage investment in wireline, wireless, broadband, or packet switching technologies.

**1. Earnings sharing distorts the very incentives that alternative regulation plans are intended to introduce**

83. In the economics literature, it is well known that the efficiency properties of pure price regulation are superior to those of rate-of-return regulation and earnings-sharing regimes.<sup>32</sup> This superiority derives from the fact that the incumbent firm is the residual claimant under pure price regulation for realized cost savings. Consequently, any attempt by the regulatory authority to appropriate these cost savings will dampen the very efficiencies that incentive regulation was designed to encourage:

A key premise underlying PC regulation is that increased profits for the firm will be viewed by regulators and their constituency as something other than a failure of regulation itself. If this premise is false, then regulators will be under constant political pressure to recontract when the firm reports higher profits. In equilibrium, the firm learns that this is how the game is played and the efficiency gains from PC regulation in theory may fail to materialize in practice.<sup>33</sup>

Because *pure* price regulation reduces the likelihood of *ex post* recontracting on the part of the regulator (*i.e.*, there is no earnings sharing), the incumbent will have superior incentives for efficient performance.

84. In practice, earnings sharing lowers prices in the next period if earnings exceed some upper benchmark in the current period. Such sharing, even if it does not actually take place, continues to link a company's prices to its realized accounting costs and profits. This link, in

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<sup>32</sup> See David E. M. Sappington and Dennis L. Weisman. *Designing Incentive Regulation For The Telecommunications Industry*, Washington D.C.: American Enterprise Institute and Cambridge MA: MIT Press, 1996.

<sup>33</sup> Dennis L. Weisman, "Superior Regulatory Regimes in Theory and Practice." *Journal of Regulatory Economics*, Vol. 5(4), December 1993, pp. 364-365.

turn, diminishes the firm's incentives to operate efficiently by reducing costs, pursuing new customers, investing in new technology, or developing and rolling out new services.

85. First, earnings sharing reduces the incentives to operate the least-cost technology and leads to distorted diversification incentives for the incumbent supplier. Earnings sharing reduces technical efficiency because the firm no longer has the same incentive to produce its products at lowest cost that firms in unregulated markets face. Aggressive and successful cost reduction can cause the firm to exceed its sharing level of earnings, so that prices in the next period may have to be reduced in some fashion unrelated to market pressure. This possibility obviously diminishes the amount of effort a regulated firm would expend in increasing its productivity.

86. Second, the distortion in investment incentives is, perhaps, the most costly of the consequences of earnings sharing in a price cap plan. It occurs because the regulated firm is unable to keep all the benefits of successful investments; instead, rewards of good investments may have to be shared in ways that may be inconsistent with market forces. Such regulation represents the antithesis of Schumpeter's idea of the "perennial gale of creative destruction" *i.e.* the view that firms innovate and invest to obtain supracompetitive profits in the short run that are then competed away by imitators and entrants. The ability to earn short run supracompetitive prices in this view is the primary incentive to risk capital and effort in any kind of new venture. Regulation that truncates the possible rewards for success in such ventures — particularly in the short run — can have devastating effects on the incentives to invest.

87. Finally, economic research has shown that internally generated funds are the most efficient form of capital investment,<sup>34</sup> and earnings sharing can distort and limit this source of funding. The risk and reward for prospective investments in a developing competitive market should be placed solely on shareholders in order to provide the necessary incentives to invest capital in an industry like telecommunications, which is driven by innovation and technological change.

88. Besides these theoretical arguments, there is empirical support for the proposition that earnings sharing reduce incentives for infrastructure investment. A 2000 NRRI report reviewed the empirical literature on the impact that incentive regulation has had on a number of important

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<sup>34</sup> See Kenneth A. Froot, David S. Sharfstein and Jeremy C. Stein, "A Framework for Risk Management," *Harvard Business Review*, November-December 1994.

variables such as price, productivity and investment in new technologies.<sup>35</sup> Two of the studies reviewed showed that pure price regulation (*i.e.*, without earnings sharing) was superior to a hybrid plan with earnings sharing. The first study highlighted indicated that the positive impact on productivity from a hybrid plan tends to be smaller than the positive impact from pure price-cap regulation.<sup>36</sup> The second study concluded that the positive effect of pure price regulation on deployment of fiber optic cable was significantly reduced when an earnings sharing provision was present. The authors hypothesized that, in part, this reduction in investment may occur because earnings sharing introduces greater uncertainty into the stream of financial returns from large-scale investments.<sup>37</sup>

## 2. Earnings sharing needlessly increases regulatory costs

89. Reinstating earnings sharing would also require maintaining costly regulatory procedures such as cost allocation rules together with enforcement mechanisms to guard against the possibility a firm may mis-assign costs to its noncompetitive services in order to cross-subsidize its competitive services.<sup>38</sup> Price regulation renders this issue moot, because the firm's prices are no longer linked to the firm's costs. Under a *pure* price-regulation plan, misreporting costs would have no impact on the prices the firm would be able to charge, and therefore the regulator need not adopt monitoring procedures or requirements that increase regulatory delays and costs.

90. Not surprisingly, state regulatory commissions have found that pure price regulation can be an effective safeguard against cross-subsidization and other such anticompetitive behavior,<sup>39</sup> and the FCC has found that:

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<sup>35</sup> *The Performance of the State Telecommunications Industry Under Price-Cap Regulation: An Assessment of the Empirical Evidence*, Jaison R. Abel, Ph.D., The National Regulatory Research Institute, September 2000.

<sup>36</sup> "Incentive Regulation and Productive Efficiency in the U.S. Telecommunications Industry," *Journal of Business*, Volume 70, 1997.

<sup>37</sup> See Shane Greenstein, Susan McMaster and Pablo Spiller. "The Effect of Incentive Regulation on Infrastructure Modernization: Local Exchange Companies' Deployment of Digital Technology." *Journal of Economics and Management Strategy*. Vol. 4, No. 2, 1995, p. 196.

<sup>38</sup> See William J. Baumol, *Superfairness*, Chapter 6, MIT Press, 1986.

<sup>39</sup> [A] well designed price cap plan insulates ratepayers from investment risk and subsidization of new ventures. Massachusetts Department of Public Utilities, *NYNEX Price Cap*, D.P.U. 94-50 (May 12, 1995), p. 121.

The removal of sharing also removes a vestige of rate-of-return regulation that created incentives to shift costs between services to evade sharing in the interstate jurisdiction. When a price cap LEC anticipates earnings will fall in the sharing range, every dollar of cost misallocated from services not subject to regulation decreases the LEC's interstate sharing obligation and increases recorded earnings on those other services.<sup>40</sup>

91. Finally, earnings-sharing provisions also create a forum for incumbents, competitors and special interest groups to raise self-serving arguments about the reasonableness of the regulated company's cost allocations. Because these allocations are economically arbitrary, there is no objective or correct solution. Sharing thus encourages efforts by all parties to game the regulatory process by trying to allocate costs to particular categories and thereby lower the prices they pay for wholesale services or raise the prices they compete against for retail services.

**D. There is no valid basis for re-initializing rates**

92. The Commission seeks comment on whether special access rates should be re-initialized, in light of AT&T's comments regarding excessive rates of return (¶ 59). Rates should not be re-initialized because the data on which AT&T's claim is based — *i.e.*, accounting rates of return based on ARMIS data—cannot be used to establish meaningful rates of return. Moreover, even if there were evidence that special access earnings exceeded risk-adjusted, competitive market returns, reducing rates to eliminate those returns would be wrong. Such an action would effectively renege on the regulatory bargain struck at the outset of price cap regulation, in which the regulated firm gave up its claim on a reasonable opportunity to earn an authorized rate of return in exchange for a price cap formula with its attendant risk of lower earnings and potential reward of higher earnings, depending on its performance. Just as important as the mechanics of

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A properly designed alternative regulation plan affords the opportunity not only for the company to transition itself to a more competitive environment, but allows the Commission to implement safeguards and allocate risk in a fashion that protects the interests of all interested parties. Illinois Commerce Commission, 92-0448/93-0239 Consol. (October 11, 1994), p. 19.

We find attractive many aspects of a pure price model for establishing revenue levels ... The utility and its shareholders would be completely at risk for their operational decisions, and incentives to cross-subsidize more competitive activities with monopoly profits from basic services would be greatly reduced. 33 Cal. P.U.C. 2d at 172-173.

<sup>40</sup> *Price Cap Performance Review for Local Exchange Carriers*, CC Docket Nos. 94-1, Fourth Report and Order, paragraph 148 (1997).

a price cap plan is its credibility. If the regulated firm cannot reasonably believe that the regulatory contract will be honored, it will not expend effort and risk capital as a firm would that expected to be bound by the plan whether it succeeded or failed.

**1. Earnings derived from fully allocated costs cannot be used to justify rate changes**

93. I agree with the Commission that accounting rates of return from ARMIS data cannot be used to set rates; thus, it would make no sense to use them to determine whether a given set of rates had to be changed. In the *NPRM*, the Commission states that:

One year's data are insufficient to support conclusions about the relationship between pricing flexibility and high rates of return. Even if the Commission had enough data, moreover, *we question AT&T's central reliance on accounting rate of return data to draw conclusions about market power. High or increasing rates of return calculated using regulatory cost assignments for special access services do not in themselves indicate the exercise of monopoly power.*<sup>41</sup>

94. Over two years ago, Professor Kahn and I discussed at length the fallacy in using accounting rates of return to infer anything about the level of special access services prices or rates of return.<sup>42</sup> Our reasoning centered around the impossibility — not just in practice but in principle — of assigning fixed common costs and network investment in any economically meaningful way to particular services in particular jurisdictions. Verizon is a multiproduct, multistate firm that provides regulated and unregulated services over a single network using an integrated regional management structure. For such firms, economists have long understood that fully-distributed costs allocated to particular services in particular jurisdictions are not economic costs and should not be used for ratemaking purposes or for assessing the degree of competitiveness in a market. As Professor Kahn and I explained:

The regulatory expedient of assigning fixed costs among categories (e.g., between regulated and unregulated or between interstate and intrastate jurisdictions), in proportion to variable costs or demand volumes, though “reasonable,” is not cost-causative, and the resulting costs are not economic costs. It might be equally reasonable to allocate railroad overhead costs to services by volume, weight or

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<sup>41</sup> *NPRM* ¶ 129 (emphasis added), citing Franklin M. Fisher & John J. McGowan, *On the Misuse of Accounting Rates of Return to Infer Monopoly Profits*, 73 *AMERICAN ECON. REV.* (1983), at 83.

<sup>42</sup> Kahn-Taylor Declaration, Section IIIA.

value, but shippers of feathers, coal and diamonds would undoubtedly disagree about the results.

We then concluded by quoting a remarkable passage by some of AT&T's most distinguished economic spokesmen:

Fully allocated cost figures and the corresponding rate of return numbers simply have zero economic content. They cannot pretend to constitute approximations to *anything*. The "reasonableness" of the basis of allocation selected makes 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 just 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.<sup>43</sup>

Just so.

95. No other evidence in this proceeding suggests that limited Phase II pricing flexibility has permitted BOCs to exercise market power. Claims that tariffed prices for particular services increased in pricing flexibility MSAs does not constitute evidence of market power because (i) price increases for services under pricing flexibility do not indicate the presence of market power unless the regulated price happened to be at a competitive market level, and (ii) revenue and volume evidence from ARMIS indicates that even if some specific month-to-month tariffed prices increased, average revenue per circuit fell during the pricing flexibility period. Such pricing behavior is consistent with the industry's experience for long distance services, where pricing flexibility led to higher basic toll rates but lower average revenue per minute, as customers migrated from month-to-month service to plans based on term and volume commitments.

## **2. Re-initializing rates would undermine investment incentives**

96. Reallocating benefits from past ILEC productivity growth to customers in the form of lower re-initialized prices [as described in the *NPRM* (§ 67)] would reduce the regulated firms' incentives to increase productivity. A scheduled reassessment of rates based on accounting returns (§ 68) would similarly reduce productivity incentives, representing — after a decade of

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<sup>43</sup> 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.

price cap regulation — a reversion to what would amount to rate of return regulation with an institutionalized regulatory lag.

97. Moreover as the Commission correctly states: “The aim of price cap regulation is rates that approximate those that a competitive firm would charge, and a competitive firm makes decisions based on economic, not accounting rates of return.” *NPRM* ¶ 61. Competitive firms earn returns that are based on their performance in the market. Thus, they can exceed “normal” returns in certain periods but earn lower returns in others. Price cap regulation is intended to reflect the same incentives—to reward efficient behavior and punish inefficient behavior. If the Commission deviates from the process by setting prices lower because the firm has been able to reduce its costs and earn above some benchmark for a short period of time, both the firm’s and its investors’ incentives will be undermined. The firm will have less incentive to reduce costs because the gains will be periodically or randomly reduced, and investors will be less willing to provide capital because returns over the long term will be reduced, and the risks will be increased.

## V. Conclusion

98. Competition for special access services continues and continues to grow vigorously since the *Pricing Flexibility Order* in 1999. Verizon’s average revenue per voice-grade channel continues to fall and fall faster than required by its price cap index. Average revenue per circuit continues to fall for DS-1 and DS-3 circuits. Nothing in these data suggests that the limited pricing flexibility that has been in place since 2001 has permitted firms to exploit market power or caused prices to rise.

99. In view of this actual marketplace evidence, my analysis shows that the Commission should

- realign the Phase II trigger calculation to take into account competitors’ fiber facilities that are not collocated in an ILEC’s wire center,
- for areas where competitors’ sunk investment in facilities does not satisfy the trigger, retain a single price cap index — without categories or subcategories — with no g-factor and a productivity offset set equal to the rate of inflation, and
- allow ILECs to respond to RFPs and negotiate contracts throughout their service territories as their competitors do.

# TABLES

**BEGIN VERIZON CONFIDENTIAL**

Table 1

Compound Annual Growth Rate	END VERIZON CONFIDENTIAL			
1991-2004		-14.1%	-16.0%	-2.6%
1996-2001		-8.2%	-10.0%	-3.7%
2001-2004		-15.2%	-16.6%	-3.9%
1999-2001		-11.8%	-13.5%	-3.0%

**Table 2**  
**Large ILEC**  
**Average Revenue Per Line**

	Compound Annual Growth Rate Nominal	Compound Annual Growth Rate Real
1991-2004	-10.0%	-11.9%
1996-2001	-0.1%	-2.0%
2001-2004	-9.1%	-10.6%
1999-2001	3.2%	1.2%

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# TABLES

**Table 3**  
**BEGIN VERIZON CONFIDENTIAL**

<b>END VERIZON CONFIDENTIAL</b>						
Compound Annual Growth Rate						
1999-2004	-3.11%			-3.48%		
2002-2004	-3.92%	-6.95%	-4.17%	-3.45%	-7.41%	-6.14%
1999-2000	-0.94%			+0.04%		
2001-2004	-2.73%			-1.85%		

**Table 4**  
**Price Cap Parameters**

	GDP-PI	X	GDP-PI - X	Index
1999	1.78%	6.50%	-4.72%	100.0
2000	1.53%	4.75%	-3.22%	96.8
2001	2.01%	4.75%	-2.74%	94.1
2002	2.12%	6.50%	-4.38%	90.0
2003	1.62%	6.50%	-4.88%	85.6
2004	1.50%	4.06%	-2.57%	83.4
<b>Compound Annual Growth Rate</b>				
1999-2004				-3.56%
1999-2001				-2.98%
2001-2004				-3.95%
2002-2004				-3.73%

**Table 5**  
**Annual Changes in Average Nominal Revenue Per Circuit**  
**Verizon East**

	DS-1	DS-3	GDP-PI - X
1999-2004	-3.11%	-3.48%	-3.56%
1999-2001	-3.69%	-5.87%	-2.98%
2001-2004	-2.73%	-1.85%	-3.95%
2002-2004	-3.92%	-3.45%	-3.73%

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# TABLES

**Table 6**  
**BEGIN VERIZON CONFIDENTIAL**

<b>END VERIZON CONFIDENTIAL</b>						
<b>Compound Annual Growth Rate</b>						
1999-2004	-4.20%	-2.89%				
1999-2001	-9.82%	-2.71%				
2001-2004	-0.26%	-3.01%				
2002-2004	-1.64%	-4.78%	0.04%	-13.76%	-1.34%	-9.85%

**Table 7**  
**BEGIN VERIZON CONFIDENTIAL**

<b>END VERIZON CONFIDENTIAL</b>						
<b>Compound Annual Growth Rate</b>						
1999-2004	-4.91%	0.11%				
1999-2001	-5.35%	-0.46%				
2001-2004	-4.62%	0.48%				
2002-2004	-4.07%	-3.69%	-8.13%	-6.04%	-5.05%	-3.08%

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# TABLES

**Table 8**  
**Real Average Revenue per Channel Termination and Channel Mile**  
**Subject to Pricing Flexibility**  
**Cumulative Annual Growth Rate: 1999-2004**

	<b>DS-3</b>	<b>DS-1</b>
<b>Channel Terminations</b>	-5.80	-2.39%
<b>Channel Mileage</b>	-1.64%	0.30%
<b>Circuits</b>	-4.06%	-1.35%

# TABLES

**Table 9**  
**BEGIN VERIZON CONFIDENTIAL**

**END VERIZON CONFIDENTIAL**

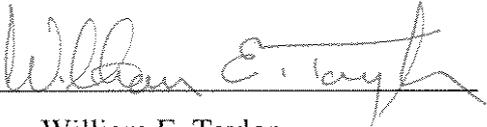
**Table 10**  
**Wireline CLEC High Capacity Facilities**

	<b>1996 Local Competition Order</b>	<b>1999 UNE Fact Report</b>	<b>2002 Triennial Review Order</b>	<b>2004 UNE Fact Report 2004</b>
Average Number of CLEC Networks in Top 50 MSAs	n/a	15	18	19
Route Miles of Fiber (local and long-haul)	47,000	100,000	308,000	324,000
Buildings Served Directly by CLEC Fiber	24,000	n/a	30,000	32,000

Source: UNE Fact Report 2004, Table 1

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on June 9, 2005

  
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William E. Taylor