SIDLEY AUSTIN BROWN & WOOD LLP

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DALLAS
LOS ANGELES
NEW YORK
SAN FRANCISCO

1501 K STREET, N.W.
WASHINGTON, D.C. 20005
TELEPHONE 202 736 8000
FACSIMILE 202 736 8711
www.sidley.com
FOUNDED 1866

BEIJING
GENEVA
HONG KONG
LONDON
SHANGHAI
SINGAPORE
TOKYO

WRITER'S DIRECT NUMBER
(202) 736-8224

WRITER'S E-MAIL ADDRESS
cbeckner@sidley.com

November 8, 2004

Corrected Version

Ex Parte

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Re: Ex Parte Presentation, *Unbundled Access to Network Elements*, WC Docket No. 04-313, CC Docket No. 01-338 – Redacted for Public Inspection

Dear Ms. Dortch:

Enclosed for filing is the Redacted Version of the white paper entitled "The Evidence Of Record Overwhelmingly Confirms That Wireline Competition Cannot Flourish If Competitive Carriers Are Relegated To Special Access Service" in connection with the above referenced matter. Also attached is the supporting Declaration of Dr. Lee Selwyn. These filings confirm that the Bells have the incentive and ability to price squeeze competitors that are relegated to special access services.

Please contact me if you have any questions.

Very truly yours,

/s/ C. Frederick Beckner III
Counsel for AT&T Corp.

Encl.

THE EVIDENCE OF RECORD OVERWHELMING CONFIRMS THAT WIRELINE COMPETITION CANNOT FLOURISH IF COMPETITIVE CARRIERS ARE RELEGATED TO SPECIAL ACCESS SERVICE

Because of the overwhelming evidence that self-supply of high capacity loops and transport is uneconomic below the specific capacity thresholds established in the *Triennial Review Order*, the Bells have shifted their focus in this remand proceeding. In their comments and replies, the Bells now primarily contend that their offers of tariffed special access services at above-cost – and largely unregulated – rates eliminate the impairment that would otherwise exist for these facilities. The Bells recognize, however, that under *USTA II*, they must demonstrate that there is little "risk of ILEC abuses" if competitive carriers are relegated to special access.[1] And while the Bells now claim that they lack both the incentive and ability to price squeeze,[2] neither contention can withstand scrutiny. To the contrary, the evidence not only shows that there is a potent "risk" of price squeezes if competitive carriers are relegated to special access, but also that the Bells are *already* using their substantial artificial access cost advantages to foreclose competition.

The Bells' Ability To Price Squeeze. The Bells claim they cannot price squeeze rivals because they have been forced to lower special access rates as a result of competition.[3] This claim is as irrelevant as it is false.

The claim is irrelevant because even if the Bells could demonstrate that they have reduced their special access rates from peak levels, it is indisputable that those rates remain far above economic cost.[4] It is likewise indisputable that special access is a major – indeed, the most significant – cost of providing wireline retail service to enterprise customers.[5] So long as these two conditions exist, the Bells have the ability to price squeeze rivals simply by changing retail rates to levels that remain profitable to the Bells but that rivals forced to use special access service cannot match. Indeed, AT&T has introduced irrefutable evidence that the Bells have already engaged in such price squeezes.[6]

And the claim is false because the record unambiguously shows that the Bells have *raised* their special access rates in response to rate deregulation. Tellingly, the Bells do not even attempt to show they have actually lowered the price for *any* particular access service for which they have been granted pricing flexibility.[7] Instead, they proffer supposed proxy metrics that are designed solely to mislead and obfuscate.

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[1] *United States Telecom Ass'n* v. *FCC*, 359 F.3d 554, 577 (D.C. Cir. 2004) ("*USTA II*").

[2] *E.g.*, BellSouth Reply, Banerjee Reply Dec. ¶¶ 57-61; SBC at 49-57; Verizon Reply at 94-98.

[3] SBC, Casto Dec. ¶ 15; Verizon, Verses-Letaille-Jordan-Reney Dec., ¶ 61 & Exh. 15.

[4] *See* AT&T at 93-94 & Stith Dec., Att. 1-2.

[5] SBC Reply, Casto Reply Dec. ¶ 42.

[6] *See generally* AT&T, AT&T, Benway-Holleron-King-Lesher-Mullan-Swift ("Benway *et al.*") Dec.; *id.*, Lieberman-Panereli Dec.

[7] AT&T Reply, Selwyn Reply Dec. ¶ 59.

For example, Bells contend that their "average" prices for DS-1 circuits have decreased over the last few years.[8] But as AT&T showed, the "average" price they calculate includes their special access rates *both* in "pricing flexibility" MSAs *and* in MSAs subject to price cap regulation (and thus mandatory rate reductions).[9] Thus, most of the Bells' purported access rate "declines" are the direct result of price reductions they were *required* to make for their price capped special access services.[10] Further, the Bells' "average" figures treat a mere shift in relative access *demand* (*e.g.*, to higher capacity OCn circuits that are not even at issue in this proceeding and to onerous "OPP" contracts that only confirm that Bells' unrestrained market power) as special access "price" decreases.[11] As the D.C. Circuit has recognized, reliance on any such argument would be patently arbitrary.[12]

Alternatively, the Bells contend, through their declarant Dr. Taylor, that average revenues per voice-grade equivalent ("VGE") declined faster after the Bells obtained pricing flexibility than they did when they were subject to price cap regulation.[13] Even if Dr. Taylor's methodology were sound – and as explained below and in the accompanying rebuttal *ex parte* declaration of Dr. Lee Selwyn it is not – Dr. Taylor made a basic computational error. When that error is corrected, Dr. Taylor's analysis proves the precise *opposite* of what he claims.[14] Although the average revenue per VGE decreased substantially under price cap regulation through 2001, the average revenue per VGE decreased much less after the Bells obtained pricing flexibility in 2001.[15]

Nor can the modest decrease in revenues per VGE after pricing flexibility be attributed to price decreases in areas where the Bells have pricing flexibility. First, the ARMIS data Dr. Taylor relies upon do not distinguish between revenues in price cap and pricing flexibility areas.[16] The small decrease in "average revenue per VGE" since 2001 calculated by Dr. Taylor is thus merely a reflection of the fact that the Bells were required to reduce rates for special access services in areas still subject to price cap regulation.[17]

Second, Dr. Taylor now agrees with AT&T that he inappropriately treated mere shifts in relative demand between "higher" capacity and "lower" capacity special access services as a

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[8] SBC, Casto Dec. ¶ 15; Verizon, Verses-Letaille-Jordan-Reney Dec., ¶ 61 & Exh. 15.

[9] AT&T Reply, Selwyn Reply Dec. ¶¶ 60, 70.

[10] *Id.* ¶¶ 69- 72.

[11] *Id.* ¶ 67.

[12] *See Association of Oil Pipe Lines* v. *FERC*, 281 F.3d 239, 241-43 (D.C. Cir 2002); *Flying J.* v. *FERC*, 363 F.3d 495, 497-98 (D.C. Cir. 2004).

[13] *See* Verizon Reply, Taylor Reply Dec. ¶¶ 8, 11-12.

[14] Selwyn Ex Parte Dec. ¶ 11 (attached hereto as Exhibit 1).

[15] *Id.*

[16] *Id.* ¶ 12.

[17] *Id.*

price decrease even when there no actual price decrease.[18] And despite Dr. Taylor's unsupported speculation that the extent of this error is likely small, the opposite is true.[19] Indeed, Dr. Selwyn shows that even the misleading and selective data Dr. Taylor proffers to support his speculation show that *all* of the reduction the Bells claim in average revenue per VGE since 2001 is due to the shift in relative demand between "low" and "high" capacity services.[20]

For these reasons, Dr. Taylor's analysis, once corrected, is consistent with AT&T's direct analysis of the Bells' rates. The Bells' actual rates in pricing flexibility areas – under both month-to-month and OPP arrangements – have *increased*, or at a minimum stayed constant[21] while the costs of providing special access have rapidly declined.[22] This combination of increasing prices and decreasing costs is conclusive proof of the Bells' enduring market power.

The Bells' Incentive To Price Squeeze. Alternatively, the Bells contend that they do not have any incentive to act on their manifest ability to price squeeze. Here, the Bells point to antitrust cases observing that predatory pricing is "rarely tried, and even more rarely successful."[23] The cases cited by the Bells, however, involve alleged instances of *below cost* pricing designed to drive the plaintiff out of business. But when a Bell initiates a price squeeze, it does not have to provide service below cost or at a "loss."[24] Rather, as the Commission itself has recognized, the Bells' enormous access cost advantage enables them to set a retail price that rivals cannot match *while still earning substantial profits*.[25]

Moreover, the Bells also ignore that their incentive to price squeeze is reinforced by the effects of their anticompetitive OPP special access tariffs. These OPPs often lock competitors into long-term commitments to use the Bells' networks and simultaneously impose severe shortfall penalties on carriers that fail to meet the minimum purchase requirements.[26] As such,

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[18] Verizon Reply, Taylor Reply ¶¶ 22-23.

[19] Selwyn Ex Parte Dec. ¶¶ 13-19.

[20] *Id.*

[21] *See* AT&T Reply, Stith Reply, Atts. 1-2.

[22] *Id.*, Selwyn Reply Dec. ¶¶ 78-86. The Bells suggest – without any citation or support – that a portion of this growing disparity is potentially a result of flawed accounting treatment, but they do not (and cannot) deny that the per-unit costs of providing special access have declined. Selwyn Ex Parte Dec. ¶¶ 23-32.

[23] SBC Reply at 50-51; Verizon Reply at 95.

[24] *Cf.* SBC Reply at 50.

[25] *See LEC Classification Order*, 12 FCC Rcd. 15756, ¶ 83 (1997) (a local exchange carrier "can profitably raise and sustain prices above competitive levels and thereby exercise market power . . . by increasing its rivals' costs or by restricting its rivals' output through the carrier's control of an essential input, such as access to bottleneck facilities, that its rivals need to offer their services").

[26] AT&T, Benway *et al.* Dec. ¶ 60.

the OPPs allow the Bells to have their cake and eat it too. When a Bell price squeezes a carrier customer bound by an OPP, the Bell not only gains the retail business from an end user customer, it also retains its wholesale revenues, because the shortfall penalties of the OPP require the competitor to pay the Bell for the service quantities to which it committed but now no longer needs.[27]

The Bells are likewise wrong that *Town of Concord* v. *Boston Edison Co.*[28] stands for the proposition that price squeezes "are not even worth asking about" as "a matter of antitrust law."[29] To the contrary, the First Circuit expressly noted that it was "not question[ing] [the] conclusion" reached by numerous other courts that, in most cases, "the anticompetitive risks associated with a price squeeze outweigh [any] possible benefits."[30] Instead, the First Circuit concluded that these risks were attenuated in those unique circumstances where a monopolist is subject to active rate regulation at "both levels."[31] Thus, *Town of Concord* found that where regulators had ensured that *both* wholesale *and* retail rates "reflect costs" and were "just and reasonable," antitrust law should respect that determination.[32] Here, of course, in the wake of pricing flexibility, the Bells are regulated at *neither* the wholesale (special access) *nor* the retail (enterprise services) levels.[33] But even if *Town of Concord* were on point, that decision strongly *supports* the retention of loop and transport UNEs, not their elimination. If competitive carriers were unable to maintain antitrust suits because of the existence of regulation, the Commission would have a *heightened* responsibility to ensure that its regulatory regime protects competitive carriers from Bell price squeezes. And the only way to ensure retail competition is based on "efficiency"[34] – not monopoly power – is to assure that all carriers can obtain access to the Bells' bottleneck facilities at their economic cost.

BellSouth's declarant Dr. Banerjee inadvertently reinforces this point when he notes that the "most effective way to destroy the possibility of a vertical price squeeze is, of course, to lower or eliminate entry barriers" and that the Commission and the Department of Justice relied upon the market opening requirements of § 251 in approving the Bells' § 271 obligations.[35] But those approvals were conditioned upon findings that Bells were providing access to loop and

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[27] *Id.*

[28] 915 F.2d 17 (1st Cir. 1990).

[29] SBC Reply at 51; *see also* Verizon Reply at 96.

[30] *Town of Concord*, 915 F.2d at 25 (citing *United States* v. *Aluminum Co.*, 148 F.2d 416 (2d Cir. 1945).

[31] *Id.* at 25-29.

[32] *Id.* at 26.

[33] To the extent that the Bells claim that § 272 imposes a meaningful constraint on their ability to price squeeze rivals, *see* BellSouth Reply, Banerjee Dec. ¶ 61, that claim is irrelevant because the Commission has allowed those safeguards to "sunset."

[34] *Town of Concord*, 915 F.2d at 26.

[35] BellSouth Reply, Banerjee Reply Dec. ¶ 62.

transport UNEs at cost-based rates, and, thus, that the Bells had diminished ability to price squeeze. What the Bells seek to do now, of course, is to *raise* entry barriers by eliminating access to UNEs by forcing competitive carriers to purchase above-cost special access services.

The Record Evidence Overwhelmingly Demonstrates That Competition Cannot "Flourish" Where Carriers Are Relegated To Special Access. Although the Commission can and should readopt its rule deeming special access irrelevant to § 251(d) impairment determinations in the face of clear "risks" of price squeezes, the evidence shows that there is much more than mere "risk" here. AT&T and other carriers produced evidence that shows (i) that they were forced to abandon efforts to offer enterprise customers many types of local voice and data services because of Bell special access price squeezes; (ii) that the Bells' special access rates *alone* are higher than the Bells' retail rates for many data services that they offer; and (iii) that SBC successfully implemented a concerted price squeeze campaign in residential long distance markets.[36]

In a remarkable display of cognitive dissonance, the Bells first claim that competitive carriers offered *no* evidence of price squeezes, and then go on to claim that the "actual allegations of a price squeeze" offered by competitive carriers are flawed.[37] The reason why the Bells seek to pretend that the evidence does not exist is because they have no meaningful response.[38]

For example, BellSouth concedes that it is not "privy to the reasons for AT&T's business decisions," but it speculates that AT&T's discontinuance of certain types of local private line and Ethernet services "may have more to do with a change in business strategy than special access pricing."[39] Had BellSouth bothered to actually read AT&T's supporting declaration, it would know that its speculation is false. AT&T's product managers for these services expressly testified that AT&T's decision to cease offering these services was made after "a careful review" of the relevant access costs and that AT&T's determination that it could not profitably offer these services was "*due to the high cost of leased special access facilities.*"[40]

BellSouth and Verizon claim that AT&T was "unclear" as to what services AT&T "is no longer offering."[41] Again, the Bells can only make this statement by ignoring AT&T's actual testimony. With regard to private line service, AT&T stated specifically that it has discontinued

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[36] AT&T at 98-101 & Benway *et al.* Dec. ¶¶ 72-103, MCI at 171.

[37] SBC Reply at 55.

[38] The Bells are simply wrong that the Commission must find that competition is "doomed" to failure before it can conclude that there is a price squeeze. The D.C. Circuit has expressly rejected that standard for identifying a price squeeze. *WorldCom Inc.* v. *FCC*, 308 F.3d 1, 10 (D.C. Cir. 2002) ("After all, classic price squeeze cases have never turned on a finding that competition by the input purchasing firm was *absolutely* precluded.") (emphasis in original).

[39] BellSouth Reply at 54-55 & n. 169.

[40] AT&T, Benway *et al.* Dec. ¶¶ 101, 102 (emphasis added).

[41] BellSouth Reply at 56; *see also* Verizon Reply at 97.

local private line services where it must lease both ends ("tails") of the circuit from the Bells as a special access service, and that it has been forced to raise prices to unattractive levels in order to cover costs on private line circuits where AT&T must lease even one "tail."[42] On the other hand, AT&T made clear that it is able to sustain a competitive local private line offer in the minority of instances where it is able to self-supply both "tails" of the circuit. Likewise, for local Ethernet service, AT&T's experts stated that "AT&T now primarily offers these services only in circumstances where it can self-provision the access – *i.e.*, to the limited subset of customers whose locations are already on AT&T's own local network."[43]

SBC declarant Parley Casto contends that "AT&T did not consider frame relay service as a whole, but instead only compared the retail pricing of the frame relay elements that include the access link with the costs of access links purchased as special access" and that SBC "does not offer the access link portion of frame relay service on a 'stand alone' basis."[44] This statement confirms only that Casto did not actually read the declaration to which he was replying.[45] Although Benway *et al.* did make the comparison that Casto criticizes – in order to demonstrate the extent to which SBC's special access rates are above economic cost – AT&T *also* "consider[ed] frame relay service as a whole." Specifically, paragraphs 78 to 97 of the Benway *et al.* declaration compare the retail price SBC charges for typical frame relay configurations (a price that includes *both* the access components and other elements such as ports and PVCs) with the average special access charges AT&T would have to pay SBC as inputs to its provision of the retail same service. And that comparison shows that AT&T's special access costs for providing frame relay service are *greater* than SBC's retail price for the complete retail service. This clearly establishes the existence of a price squeeze. Indeed, AT&T's analysis is extremely conservative because it does not include any of the non-access costs it must incur to provide the finished retail service.

Remarkably, despite his claim that AT&T failed to compare the price of SBC's special access with the price of SBC's retail frame relay service, Casto then purports to sponsor an analysis correcting the "flaws" in AT&T's studies. Specifically, Casto purports to take the representative frame relay service arrangements studied by AT&T and show that a competitive carrier could profitably match SBC's retail price for those services even when purchasing SBC

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[42] AT&T, Benway *et al.* Dec. ¶¶ 101-102.

[43] *Id.* ¶ 103. BellSouth repeats its intentional misrepresentations when it cites AT&T press releases about the services AT&T offers. BellSouth Reply at 56. AT&T did not claim that it had ceased offering all private line and Ethernet services. Rather, Benway *et al.* made clear that AT&T continues to offer these services in the limited cases when it can do so *using primarily its own* network facilities. AT&T also clearly stated that it was discussing *local* private line and Ethernet services, *not* long distance services.

[44] SBC Reply, Casto Reply Dec. ¶ 41.

[45] It is easy to understand why Casto made this mistake. Because Casto did not sign the Commission's protective order, he (presumably) did not review AT&T's detailed cost and pricing evidence, which was filed under seal.

special access service.[46] But these counter-studies prove nothing, because Casto overstates the retail rates for SBC's frame relay service while at the same time understating the wholesale charges for the special access circuits that competitive carriers must buy as a component of their own retail frame relay service.

For the retail rate used in AT&T's analysis, AT&T modeled two illustrative frame relay service arrangements and used SBC's *public pricing guides* to determine how much SBC would charge a customer that wished to purchase those arrangements from SBC.[47] Notably, SBC does not claim that AT&T made any errors in determining these retail prices. Instead, SBC's "counter" studies *sub silentio* assume a more expensive arrangement than is necessary to provide the frame relay retail service AT&T modeled. For example, a typical T1-level frame relay service (and the one modeled by AT&T) uses 8k PVCs, but SBC instead modeled a different arrangement that was based on the unexplained use of more expensive 32k PVCs, which are unnecessary to deliver the service AT&T modeled.[48] Further, Casto makes a math error that significantly overstates the price of the T-3 frame relay example.[49]

But even with these manipulations, SBC's critique does not disturb the bottom line. **[CONFIDENTIAL BEGIN]**

[50] **[CONFIDENTIAL END]** That is a price squeeze.

With regard to the wholesale special access rate used in AT&T's analysis, SBC takes *ipsi dixit* to new levels. Without any explanation or meaningful citation, SBC claims that AT&T

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[46] SBC Reply, Casto Reply Dec. ¶ 42.

[47] AT&T, Benway *et al.* Dec. ¶¶ 90-96.

[48] SBC Reply, Casto Reply Dec., Table A.

[49] As Casto recognizes, SBC's frame relay offer contains two separate discounts. In "scenario 2," he applies a 20% discount to the "base" price of $45,960, and arrives at a price of $38,452 (to which he then applies the 13% discount). SBC Reply, Casto Reply Dec., Table A. However, multiplied correctly, the 20% discount actually results in a price of $36,768. Applying the 13% discount to this figure results in a net price of $31,988.16, not the $33,453.24 Casto claims.

[50] **[CONFIDENTIAL BEGIN]**

[CONFIDENTIAL END]

could purchase special access service at prices **[CONFIDENTIAL BEGIN]**
[CONFIDENTIAL END].[51] Moreover, SBC claims that these "available" prices are "confidential" and, thus, are presumably *not* drawn from SBC's public tariffs.[52]

These "secret" special access "rates" simply cannot be given any weight, especially when contrasted to AT&T's hard evidence. As AT&T explained, its access cost figures were obtained directly from the database that AT&T maintains of *its actual access charge bills*, which *necessarily* include *all* of the applicable discounts that AT&T qualifies for under its various tariffs and contracts (but which does not include or reflect any of the penalties or purchase commitments to which AT&T may be subject in order to obtain such discounts).[53] Thus, AT&T's methodology does not require "estimates" about what tariff should govern and what discounts should apply but instead reflects the *actual cost* that AT&T incurs when purchasing special access service.[54]

The flawed nature of SBC's assumptions is further revealed by the fact that **[CONFIDENTIAL BEGIN]**

[55] **[CONFIDENTIAL END]** However, in Casto's opening declaration, Casto claimed that the "average" price of a DS1 circuit is approximately $300 per month.[56] AT&T's analysis, conservatively *assumed* **[CONFIDENTIAL BEGIN]**

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[51] SBC Reply, Casto Reply Dec. ¶ 42.

[52] *Id.*

[53] AT&T, Benway *et al.* Dec. ¶¶ 73-76.

[54] In any event, as explained in the Benway, *et al.* Declaration, the ability of AT&T or any other carrier to obtain special access discounts should be irrelevant to the determination of impairment. That is because the OPP discounts are available only when the subscriber makes term and volume commitments that impose a substantial risk of shortfall penalties on the subscriber, and the larger MVP discounts are available only if the subscriber also agrees to lock up its traffic and forego self-providing alternative access or purchasing lower cost access services from by others. In contrast, UNE purchasers can obtain access to these network elements without any of these conditions. And even if the Commission erroneously decided to consider the special access discounts available to competitors, the average $300 a month price SBC cites is lower than the amount most competitive carriers could be expected to pay for those facilities. As explained in the declaration of Joe Stith, the monthly price for a typical DS1 circuit under SBC's OPP 3 year plan in a pricing flexibility area is generally above $400 per month. AT&T, Stith Dec., Att. 1.

[55] SBC Reply, Casto Reply Dec., Ex. A.

[56] SBC, Casto Dec., Graph B. As explained in greater detail below, SBC's "average" DS1 price is clearly a very conservative measure of the special access costs that a typical carrier would pay when providing the frame relay services at issue. That is because the typical frame relay service requires a carrier to purchase *both* channel terminations *and* mileage-sensitive transport. SBC's "average" figure, however, includes all of the "zero-mileage" circuits SBC sells.

[CONFIDENTIAL END] which is based on the actual prices AT&T pays for SBC special access.[57]

Thus, SBC's own testimony conclusively establishes the existence of a price squeeze. Re-running Casto's analysis with what Casto claims to be the average DS1 price shows a debilitating price squeeze.[58] Specifically, while Casto says that SBC would charge $21,278 per month for its "Scenario 1" retail frame relay service, a carrier purchasing SBC special access at the "average" DS1 price would incur access costs *alone* of $24,300 (80* $300 for the 128k access + 1*$300 for the 1.536M access). With respect to "Scenario 2," Casto claims that SBC would charge $33,453.24 for its retail frame relay service, and that a carrier purchasing DS3 access would only incur **[CONFIDENTIAL BEGIN]**

[CONFIDENTIAL END][59]

Verizon, too, offers a critique of AT&T's analysis that only confirms the existence of price squeezes. Notably, Verizon does not dispute AT&T's specific analysis of Verizon's T3-level private line or frame relay service. It contends only that AT&T's analysis of Verizon's T1-level service is flawed because the access cost used in AT&T's analysis is higher than what Verizon claims is the "average" cost of a DS1 channel termination.[60] **[CONFIDENTIAL BEGIN]**

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[57] *See* Benway, *et al.*, Exh. 3.

[58] These calculations are set forth in more detail in Exhibit 2.

[59] SBC does not even attempt to rebut AT&T's price squeeze evidence regarding residential services. *See generally* AT&T, Lieberman-Panereli Dec. Instead, it notes only that AT&T attributed its exit to "regulatory developments." SBC Reply at 54 n.169. This is a *non-sequitor*. The "regulatory developments" AT&T referred to were the decreased likelihood that AT&T would be able to obtain cost-based access to SBC network elements required to serve residential customers, which would only increase the Bells' ability to impose price squeezes.

[60] Verizon Reply at 97 n.146.

[61] *Id.* **[CONFIDENTIAL BEGIN]**

[CONFIDENTIAL END]

[CONFIDENTIAL END]

Specifically, AT&T showed – and Verizon does not dispute – that a typical T1.5 Verizon private line retail service is priced **[CONFIDENTIAL BEGIN]** **[CONFIDENTIAL END]** depending on how much long haul transport is required.[63] A competitive carrier purchasing the "average" Verizon DS1 circuit, however, would incur **[CONFIDENTIAL BEGIN]** **[CONFIDENTIAL END]** in access costs alone when providing private line service.[64] **[CONFIDENTIAL BEGIN]**

[CONFIDENTIAL END][65] This evidence more than satisfies AT&T's burden of showing "any anticompetitive effect."[66]

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[62] Verizon, Verses-Lataille-Jordan-Reney Dec., Exh. 15.

[63] Benway *et al.* Dec., Att. 1.

[64] **[CONFIDENTIAL BEGIN]**

[CONFIDENTIAL END]

[65] *See* Stith Dec., Att. 1 (price of a single 10-mile Verizon DS1 circuit in density zone 1 for 3 year OPP is over $500 per month; price for two circuits needed to provide end-to-end private line service would be over $1000 per month)

[66] *WorldCom*, 308 F.3d at 10.

More broadly, the record evidence shows that carriers using special access are *foundering*, not "flourishing" as the Bells claim.[67] The financial distress ranges from the so-called "Big 3" to the smallest niche carriers. Underscoring this point, since reply comments were filed, Sprint announced widening losses in its long distance unit and that it was taking a $3.6 billion charge to reflect the diminishment in the value of its long distance business. Smaller carriers that, to date, have been able to provide local and long distance services purchasing UNEs have likewise put in detailed evidence showing the devastating impact that "un-converting" from UNEs to special access would have on their finances.[68]

The Bells' response to this evidence is absurd. First, Verizon claims that there must be increasing local competition because **[CONFIDENTIAL BEGIN]**

[69]

[CONFIDENTIAL END] But the "retail" sales that Verizon cites do not appear to be the sales of retail enterprise services such as Frame Relay or ATM; rather, they are the purchase of *special access by end-user customers* that then contract with other carriers – including Verizon's long distance affiliates – to obtain actual retail service. Thus, what Verizon's data actually show, **[CONFIDENTIAL BEGIN]**

[CONFIDENTIAL END].

Alternatively, Verizon says that the appropriate measure of a competitive carrier's financial success is not whether it is profitable, but whether it is merely EBITDA positive.[70] The fact that Verizon could identify only five such carriers is by itself damning. More to the point, as the acronym makes clear, EBITDA shows only earnings *before* interest and depreciation. But in order to stay in business, competitive carriers must also earn returns sufficient to cover their capital costs (*i.e.*, to make interest payments on debt and cover depreciation expenses). Carriers that are EBITDA positive but cannot earn sufficient revenues to cover these real costs cannot remain viable for long. Indeed, many of the carriers that have filed for bankruptcy over the last few years were EBITDA positive. For example, McLeod, XO, ITC, Knology and CTC all had positive EBITDA in the quarter immediately before they declared bankruptcy, and ATX was EBITDA-positive in three of the four quarters before it declared bankruptcy.

In sum, the evidence is clear. Special access service is not a viable competitive alternative to cost-based UNEs. The Commission should thus readopt its historic rule deeming special access service irrelevant to the § 251(d) impairment inquiry.

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[67] AT&T Reply at 71-80 (summarizing evidence).

[68] *Id.* at 75-76.

[69] Verizon Reply at 98.

[70] *Id.* at 86-87.

Exhibit 1

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of Unbundled Access to Network Elements	**WC Docket No. 04-313**
Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers	**CC Docket No. 01-338**

Ex Parte Declaration

of

LEE L. SELWYN

on behalf of

AT&T Corp.

November 8, 2004

EX PARTE DECLARATION OF LEE L. SELWYN

EXECUTIVE SUMMARY

1. In his October 19, 2004 Reply Declaration, Dr. Taylor tries to shore up some of the deficiencies identified in his prior analysis, which had attempted to show that, on an annual basis, Verizon's special access prices have experienced larger decreases following the onset of pricing flexibility than during the period in which those rates were subject to the Commission's price cap rules. As I demonstrate, the various analyses he advances in support of these contentions (1) conceal and distort critical evidence of demand shifts by aggregating multiple distinct services into the same "category"; (2) rely upon data and data sources that have been neither cited nor disclosed; (3) are not reproducible using the data and data sources that have been cited; (4) contain several important mathematical or data input errors whose effect is to produce apparent relationships that run precisely counter to reality; and (5) attempt to downplay the relative importance of each of these factors through a succession of erroneous and unreproducible calculations. Using the correct ARMIS data, the post-pricing flexibility price decrease is only half of what Dr. Taylor claims and substantially less than pre-pricing flexibility price decreases mandated by the Commission's price cap rules.

Annual Change in Average Revenue per VGE Pre- and Post- Special Access Pricing Flexibility	
Period	Change
Before pricing flexibility (1996-2000)	– 10.8%
During pricing flexibility (2001-2003)	– 5.9%

Importantly, even under the most conservative view, the entirety of the post-pricing flexibility "decrease" can be attributed to price reductions mandated in those areas where the BOCs remain subject to price caps and/or to demand shifts from the relatively low capacity to high capacity special access services.

2. Although purporting to demonstrate that special access "prices" have fallen, Dr. Taylor does not compare actual "prices" at all, but relies instead upon an "average revenue per voice grade equivalent" ("VGE") surrogate whose value is influenced by numerous factors *other than price*. Moreover, the ARMIS data cited by Dr. Taylor actually show *precisely the opposite* of his contention that he has shown a greater rate of decrease in average revenue per VGE under pricing flexibility than under price caps. Dr. Taylor attempts to "adjust" his flawed results by "eliminating" DSL revenue from the total special access category revenue figures purportedly contained in ARMIS, when in fact no such information is separately identified in ARMIS at all. Because there is

no practical means by which this "adjustment" can be tested or reproduced, Dr. Taylor's "DSL adjustment" should be summarily dismissed.

3. Perhaps the principal source of variation in "average revenue per VGE" is the persistent trend, in recent years, of disproportionately greater demand for very high capacity services. Special access services are not priced or sold in terms of "average revenue per VGE," but are instead denominated in terms of multiple pricing dimensions and other service attributes including, among other things, bandwidth (capacity) and distance. Because prices vary less-than-proportionately with total bandwidth, when expressed on a VGE basis the price per VGE channel decreases as the total capacity of the "pipe" increases. So if, over time, proportionately more VGE channels are provided in very high capacity OCn "pipes," all else being equal the "average revenue per VGE" will decrease – even if the nominal "prices" of like-for-like services themselves are on the rise. Although Dr. Taylor concedes that such demand shifts are taking place, he has contrived an analysis method whose effect is, in fact, to understate their effect. For no reason other than to produce a distorted picture, Dr. Taylor has aggregated the various special access capacity levels into two broad categories – (1) DS0-DS1, and (2) DS3-OCn. By this device, Dr. Taylor has completely *concealed* all *intra-category* demand shifts, such as DS0-to-DS1 migrations and what is likely the most significant of all – the DS3-to-OCn migrations. As a result, Dr. Taylor's calculation is *critically dependent* upon one *entirely unsupported and almost certainly false assumption* – namely, that *no demand shifts toward higher capacity special access services have taken place within each of these two service categories* – that is, his "analysis" assumes that the relative mix of DS0 and DS1 services, and the relative mix of DS3 and OCn services, each remained *unchanged* from January 2002 through September 2004. He has also implicitly assumed that the relative prices per VGE for the two categories that he has defined also remained constant over the same period. But even if specific prices had remained constant, *intra-category demand shifts* from DS0 to DS1 and/or from DS3 to OCn would result in a substantially lower average revenue per VGE within each category.

4. Only *some* of Verizon's MSAs were afforded pricing flexibility during the 2001-2003 time frame; other MSAs, as well as some *non-MSA* areas, remained under price caps. Hence, even in this "during pricing flexibility" period, some portion, if not the entirety, of the overall 5.9% annual decrease in average revenue per VGE is still attributable to the mandatory price cap reductions applicable in all *non*-pricing flexibility areas, as well as to other factors, such as demand shifts to higher capacity services. For example, revenue figures for Verizon (excluding the former GTE companies) indicate that, as of the end of 2001, 41.8% of Verizon's special access revenues were subject to price caps. For year-end 2002, that figure was still 38.4%. These revenues would still have been subject to mandatory price cap reductions.

5. Finally, Dr. Taylor seeks to dismiss the excessive – and growing – double-digit rates of return on the RBOCs' interstate special access services as reported in ARMIS by attempting to undermine the validity of the *process* by which these enormous rates of return had been calculated – the RBOCs' own accounting data as reported to the Commission through periodic ARMIS filings

which the RBOCs and the Commission rely for different ratemaking purposes. Dr. Taylor sidesteps the fact that just because "regulatory cost assignments" were the basis for identifying these "high or increasing rates of return" does not make them *per se* wrong and, of particular significance, offers no specific *facts* or *analysis* that demonstrate that the ARMIS data or the results derived therefrom are actually wrong. If, as Dr. Taylor appears to contend, costs are being under-assigned to special access, then those costs must necessarily be *over-assigned* to other service categories, such as (in the case of jurisdictionally interstate services) the "common line" category. But elsewhere the RBOCs have specifically represented to the Commission and to the courts that the accounting costs being reported in ARMIS are the RBOCs' "actual costs" and that setting unbundled network element (UNE) rates below these threshold "actual cost" levels would constitute an unlawful "taking" of the RBOCs' property. ARMIS costs cannot be "actual costs" for some purposes and bogus for others, and ARMIS costs cannot be under-assigned to one category (special access) while not concurrently being *over-assigned* to other categories, such as the common line. The high special access rates of return result from a succession of cost decreases over the past several years, a result that is entirely consistent with what one would expect to find in a declining cost industry such as telecommunications. The fact that special access *prices* have not decreased by anything close to the rate at which costs have declined – and, indeed, have generally been *increased* in areas subject to pricing flexibility – is, on the other hand, not consistent with what the RBOCs seek to portray as a "competitive" special access market. Clearly, the Commission must look past the RBOCs' rhetoric and recognize what ARMIS demonstrates – that special access prices are grossly excessive by any standard, and that those excessive prices certainly could not be sustained if special access services were actually competitive.

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Before the
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Washington, DC 20554

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EX PARTE DECLARATION OF LEE L. SELWYN

INTRODUCTION

6. My name is Lee L. Selwyn; I am President of Economics and Technology, Inc. ("ETI"), Two Center Plaza, Suite 400, Boston, Massachusetts 02108. On October 4 and October 19, 2004, respectively, I prepared and submitted a Declaration and a Reply Declaration in this matter on behalf of AT&T Corp. I have been asked by AT&T to respond to certain factual claims advanced by Verizon and SBC in their October 19, 2004 submissions with respect to special access price trends and earnings levels. First, I have been asked to address the Reply Declaration of William Taylor, in which he attempts to respond to the many criticisms of the way in which he attempted to show that special access prices have declined in the wake of Commission deregulation of special access rates. Second, I have been asked to respond to Verizon's and

SBC's arguments that ARMIS data are irrelevant to showing whether the Bells' special access rates have increased in relation to costs since they were granted pricing flexibility. I address each issue in turn.

SPECIAL ACCESS PRICE CHANGES

When properly adjusted for the effects of mandated price cap rate reductions, shifts in demand toward higher capacity services, and for the various conditions and penalties inherent in volume and term pricing contracts, RBOC claims that special access prices have decreased under pricing flexibility are revealed as false and misleading.

7. In his reply declaration, Dr. Taylor tries to shore up some of the deficiencies identified in his prior analysis, which had attempted to show that Verizon special access prices had fallen since the onset of special access pricing flexibility when measured on the basis of "average revenue per voice-grade equivalent ("VGE") circuit." Specifically, Dr. Taylor contends that, on an annual basis, Verizon's special access prices have experienced larger decreases following the onset of pricing flexibility than during the period in which those rates were subject to the Commission's price cap rules. In support of that claim, Dr. Taylor provides an "analysis" of the average revenue per VGE over the entire 1996-2003 period as well as one that has been bifurcated into two segments, representing the so-called price cap (1996-2000) and pricing flexibility periods (2001-2003). He further contends that when DSL revenues are removed from total special access category revenues, the differential between the pre- and post-pricing flexibility periods becomes even greater.[1] Finally, he disputes the effects of demand shifts

1. Notably, Dr. Taylor's new analysis does not address many of the shortcomings in his prior work that I identified previously. In my October 19, 2004 reply declaration (at paras. 73-74), I explained why the metric selected by Dr. Taylor for measuring changes in price – average revenue per VGE – does not, in fact, isolate price changes because many factors *other than specific changes in price* can affect average revenue per VGE. These factors include changes in the relative mix of services (DS-0, DS-1, DS-3 and OCn's of various sizes), changes in terms and (continued...)

toward higher-capacity "pipes" – which he concedes has occurred – claiming that the resulting changes in the average revenue per VGE are not sufficient to account for the total decrease in "price."

8. As explained below, even as to the points to which Dr. Taylor does respond, his analysis is faulty. As I demonstrate, the various analyses he advances in support of these contentions (1) conceal and distort critical evidence of demand shifts by aggregating multiple distinct services into the same "category," (2) rely upon data and data sources that have been neither cited nor disclosed, (3) are not reproducible using the data and data sources that have been cited, (4) contain several important mathematical or data input errors whose effect is to produce apparent relationships that run precisely counter to reality, and (5) attempt to downplay the relative importance of each of these factors through a succession of erroneous and unreproducible calculations. Using the correct ARMIS data, the post-pricing flexibility price decrease is only half of what Dr. Taylor claims and substantially less than pre-pricing flexibility price decreases mandated by the Commission's price cap rules. Importantly, even under the most conservative view, the *entirety* of the decrease can be attributed to demand shifts from the relatively low capacity to high capacity special access services. And given that a portion of Verizon's special

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1. (...continued)
conditions applicable to the nominal "price," such as volume and term commitments accepted in exchange for "discounts" and penalties for failure to satisfy them, and the ongoing effects of price cap rate reductions applicable to non-pricing flexibility areas.

access services still remain subject to price caps, Dr. Taylor's analysis proves, if anything, that Verizon has raised prices in pricing flexibility areas.

9. First, Dr. Taylor presents a series of entirely undocumented calculations purportedly based upon revenue and quantity data contained in ARMIS that, he contends, demonstrate that special access prices, when expressed in terms of "average revenue per VGE," have been decreasing at a faster annual rate since the onset of pricing flexibility than under the prior price caps regime. In fact, the ARMIS data cited by Dr. Taylor actually show *precisely the opposite* – a greater rate of decrease in average revenue per VGE under price caps than under pricing flexibility. Dr. Taylor then attempts to "adjust" his flawed results by "eliminating" DSL revenue from the total special access category revenue figures contained in ARMIS. Although he specifically cites ARMIS as the source for those DSL revenue figures, in reality no such information is separately identified in ARMIS, so there is no practical means by which this "adjustment" can be tested or reproduced. Indeed, not all DSL revenue is even included in the ARMIS "interstate special access" category, and it is entirely possible that at least some of the amounts that Dr. Taylor has "excluded" had *never even been included* in the special access category in the first place. Finally, Dr. Taylor has sought to minimize the impact of demand shifts from lower- to higher-capacity special access services upon average revenue per VGE by aggregating services among which such shifts are occurring into a single category, a device that effectively *conceals* the very demand shifts that he purports to be examining. I demonstrate that if these *intra-category* demand shifts were analyzed on a service-by-service basis using data that

is available to Verizon, the effect of such shifts upon average revenue per VGE is far greater than Dr. Taylor's undocumented estimate.

Dr. Taylor's computation of special access revenue per line is fundamentally flawed and relies upon unsourced and, as it turns out, erroneous calculations.

10. Dr. Taylor presents a series of figures that purport to show, both in terms of nominal and real dollars, that the annual rate of price decreases for special access services has been greater since the onset of pricing flexibility than under the previous price cap regime. For convenience, I have reproduced his results below:

Table 1
Verizon Special Access Revenue per VGE

Period	Nominal Annual Growth	Real Annual Growth
All data – 1996-2003	– 9.9%	– 12.0%
Before Pricing Flexibility 1996-2000	– 10.7%	– 12.7%
During Pricing Flexibility 2001-2003	– 11.7%	– 13.4%

Source: Taylor Reply Declaration, Table 1.

As it turns out, certain of these figures are *incorrect* and, when corrected, Dr. Taylor's "analysis" actually demonstrates precisely the opposite of what he was attempting to show – *i.e.*, that, in fact, the annual rate of decrease in revenue per VGE was actually much *greater* under price caps than under pricing flexibility. In Appendix 1 to this Declaration, I describe and present

calculations that I have performed using the *correct* ARMIS data cited – but apparently not actually used – by Dr. Taylor.

11. As shown in Appendix 1, when recalculated using actual ARMIS data, the average revenue per VGE data upon which Dr. Taylor relies actually demonstrates precisely the *opposite* of what he has contended: Specifically, the average annual decrease in "price" as measured by average revenue per VGE was actually *larger* during the "price cap" period (1996-2000) than for the "pricing flexibility" period (2001-2003):

Table 2
Annual Change in Average Verizon Revenue per VGE
Pre- and Post- Special Access Pricing Flexibility

Period	Change	Source
Before pricing flexibility (1996-2000)	– 10.8%	Table A1
During pricing flexibility (2001-2003)	– 5.9%	Table A3

12. In this regard, Dr. Taylor's characterization of the 2001-2003 period as "during pricing flexibility" is a misnomer. To be sure, *some* of Verizon's MSAs were afforded pricing flexibility during the 2001-2003 time frame, but other MSAs, as well as some *non-MSA* areas, remained under price caps. Hence, even in this "during pricing flexibility" period, some portion, if not the entirety, of the overall 5.9% annual decrease in average revenue per VGE is still attributable to the mandatory price cap reductions applicable in all *non*-pricing flexibility areas, as well as to other factors, such as demand shifts to higher capacity services. For example, revenue figures for

Verizon East (i.e., excluding the former GTE operations) indicate that, as of the end of 2001, 41.8% of Verizon's special access revenues were subject to price caps. As of the end of 2002, that figure was 38.4%. Corresponding figures for SBC indicate that, as of July, 2002, 78% of SBC's special access revenues were subject to price caps. In July 2003, that figure was still 56%. These revenues would still have been subject to mandatory price cap reductions. *See*, Selwyn Reply Declaration, at Table 2.

Shifting utilization between lower and higher capacity facilities accounts for the remaining decrease in VGE special access revenue.

13. In my October 19, 2004 Reply Declaration (at para. 73), I observed that Dr. Taylor's claim that special access prices have been decreasing was not based upon an analysis of specific *prices* and *price changes* over time, but was instead created from a contrived comparison of "average revenue per voice grade equivalent" channel. Importantly, there is no reason why this revenue surrogate for *price* was needed: If, as Verizon claims, its special access prices have been dropping since the onset of pricing flexibility, it should have been able to show that via a direct like-for-like comparison of actual tariff prices at various points in time, rather than by means of the indirect – and inaccurate – device of an "average revenue per VGE" surrogate. Of course, that type of comparison would *disprove* Verizon's claim, so it is hardly surprising that Dr. Taylor needed to devise this "smoke and mirrors" approach to "proving" what is in fact not true.

14. Special access services are not priced or sold in terms of "average revenue per VGE," but are instead denominated in terms of multiple pricing dimensions and other service attributes including, among other things, bandwidth (capacity) and distance. Because prices vary less-than-proportionately with total bandwidth, the price per VGE channel decreases as the total capacity of the "pipe" increases when expressed on a VGE basis. So if, over time, proportionately more VGE channels are provided in very high capacity OCn "pipes," all else being equal the "average revenue per VGE" will decrease – even if the nominal "prices" of like-for-like services themselves are increasing.[2]

15. In recent years, and when viewed in terms of the entire special access universe, the relative demand for very high capacity OCn services has been growing at a much faster rate than the demand for individual DS-1s or DS-3s, driven in large part by the voracious capacity demands of the Internet and other high volume data transmission applications. Indeed, Dr. Taylor acknowledges this trend at para. 23 of his Reply Declaration, noting that, for Verizon and expressed on a VGE basis, the share of VGEs purchased as DS-3s or OCn's increased from

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2. For example, suppose that an ILEC provides special access only as DS0s and DS1s. In Period 1, the *price* of a DS0 was $50 and the *price* of a DS1 was $600 (i.e., $25 per VGE), and that 20% of all VGEs are provided as DS0s, for an average revenue per VGE of $30. In Period 2, suppose that the price of a DS0 increases to $52 and the price of a DS1 increases to $624, but that now only 10% of all VGEs are provided as DS0s, resulting in an average revenue per VGE of $28.60. Thus, despite *rising prices*, the shift in demand to higher capacity services results in a *lower* average revenue per VGE.

74.3% in January 2002 to 78.1% as of September 2004.[3] However, according to Dr. Taylor, this shift in demand toward higher capacity services could not account for the drop in Verizon's average revenue per VGE that Dr. Taylor had reported in his October 4, 2004 Declaration,[4] and on that basis attempts to dismiss its importance as a source of "price" (i.e., average revenue per VGE) change.

16. The share data presented in Dr. Taylor's Table 2 were apparently derived from internal Verizon data sources that are neither provided nor even described. Significantly, Dr. Taylor has elected to aggregate the shares into two broad categories – (1) DS0-DS1, and (2) DS3-OCn. By this clever device, Dr. Taylor has completely *concealed* all *intra-category* demand shifts, such as DS0-to-DS1 migrations and what is likely the most significant of all – the DS3-to-OCn migrations.[5] Dr. Taylor's "analysis" concludes that, based upon the observed demand shift *between* the two broad service categories that Dr. Taylor has selected, "no matter how much cheaper per VGE the higher capacity services might be, the consequential reduction in average

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3. Taylor Reply Declaration, at para. 23 and Table 2.

4. *Id.*

5. Migrations from DSn to OCn have a particularly large impact upon the total number of VGEs, and hence on the average revenue per VGE, in large part because the economic cross-over point is typically well below the maximum number of VGEs that can be derived from the higher capacity service. Consider the following example: Suppose that the cross-over point between OC3 and OC12 is at 2.5 OC3's – i.e., where the customer's requirements exceed roughly 5,000 VGEs, it is less expensive to purchase one OC12 than three OC3s. When the customer takes that action, however, the total number of VGEs *in service* would immediately jump by about 3,000 – i.e., from 5,000 to 8,064, thus producing an *apparent* drop in the average revenue per VGE even if the customer's *actual* use of activated capacity remains the same.

revenue per VGE can be no more than 5.9 percent per year." This, he then asserts, disproves AT&T's evidence that "the observed 21 percent annual reduction in average revenue per VGE is due 'principally' to the shift in demand rather than reductions in price."[6] As it turns out, Dr. Taylor's calculation is *critically dependent* upon one *entirely unsupported and almost certainly false assumption* – namely, that no demand shifts toward higher capacity special access services have taken place *within* each of these two service categories – that is, the relative mix of DS0 and DS1 services, and the relative mix of DS3 and OCn services, each remained *unchanged* from January 2002 through September 2004. Dr. Taylor has also assumed that the relative prices per VGE for the two categories that he has defined also remained constant over the same period. But even if specific prices had remained constant, *intra-category demand shifts* from DS0 to DS1 and/or from DS3 to OCn would have resulted in a substantially lower average revenue per VGE in September 2004 relative to the start date of January 2002.

17. Consider the following example. Instead of aggregating all special access into just two broad categories, suppose that Dr. Taylor had instead examined demand shifts across seven categories using service-specific, rather than aggregated, Verizon share data. In the following table, I have retained Dr. Taylor's aggregate share data for each of his two broad categories, but have posited hypothetical intra-category demand shifts (the actual data is, of course, available to Verizon). For purposes of comparison, I have assumed an index value price per DS0 VGE of 100, and have scaled the other capacity per-VGE prices in relation to that index.

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6. *Id.*

Table 3
Effect of intra-category demand shifts
on average revenue per VGE

Service		Percent of VGE Demand January 2002	Percent of VGE Demand September 2004	Price Ratio to DS-0
DS0-DS1 Category	DS0	4.0%	1.0%	100.0
	DS1	21.7%	20.9%	26.6
DS3-OCn Category	DS3	70.0%	56.0%	14.4
	OC3	3.0%	11.5%	6.9
	OC12	1.0%	8.5%	3.5
	OC48	0.2%	1.6%	1.9
	OC192	0.1%	0.5%	1.4

	Average Revenue per VGE Index Value (DS-0 = 100)		Percent Revenue Change
All Special Access	20.12	15.77	– 21.6%
DS0-DS1 category	38.05	29.98	– 21.2%
DS3-OCn category	13.92	11.79	– 15.3%

NOTE: The Price Ratios to DS-0 were based upon special access channel termination and mileage rates from SBC Pacific Bell FCC Tariff No. 1, Access Service, Sections 7 and 32, monthly rates for rate zone 1, and monthly extension rates, divided by the number of VGEs applicable at each capacity level. For this example, it was assumed that half of the circuits involved zero mileage (i.e., channel terminations only) and that half were 10-mile circuits.

18. Dr. Taylor claims that "no matter how much cheaper per VGE the higher capacity services might be, the consequential reduction in average revenue per VGE can be no more than 5.9 percent per year." Dr. Taylor is wrong. As Table 3 demonstrates, when *intra-category*

demand shifts are included in the analysis, the effect of such demand shifts can *by itself* reduce the average revenue per VGE by more than Dr. Taylor's 5.9% "maximum." In the above example, the total decrease over the 32-month period from January 2002 to September 2004 was 21.6%, which translates into a decrease of 7.6% when expressed on an annual basis. Thus, it is clear that the annual reduction in average revenue per VGE can be – and likely *is* – far greater than 5.9% assuming no price changes in like-for-like services. Having assumed without any basis or support that intra-category shares and relative prices remained entirely constant over the January 2002 through September 2004 period, whatever "result" may have emerged from Dr. Taylor's contrived "analysis" proves absolutely nothing and must be dismissed in its entirety.

19. Even if Dr. Taylor's claim that "the consequential reduction in average revenue per VGE [attributable to shifts in demand to higher capacity services] can be no more than 5.9 percent per year" were correct, it would still *confirm*, not refute, my conclusion that shifts in demand to higher capacity special access services represent the principal source of the observed decrease in average revenue per VGE. According to Dr. Taylor's Table 1, the average nominal annual decrease in average revenue per VGE during the "pricing flexibility" period (2001-2003) was 11.7%.[7] So on that basis, the 5.9% drop attributable to shifts in demand accounts for *more than half* of the total annual "price" drop. However, as I discussed at para. 10 above, when the correct ARMIS data is utilized, the annual change in (nominal) average revenue per VGE is *also*

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7. This figure does not reflect Dr. Taylor's undocumented and unverifiable attempt to exclude DSL revenues from the special access category. See paras. 17-19, *infra*.

–5.9%[8] – i.e., *all of the reduction in average revenue per VGE is explained by demand shifts to higher capacity services.* Finally, as I have demonstrated in Table 3 above, the potential maximum annual decrease in average revenue per VGE that is the result of demand shifts may well be greater than the 5.9% figure given by Dr. Taylor, which would then imply a *net rate increase* in like-for-like services over the 2001-2003 period.

Dr. Taylor's removal of DSL revenues from special access category revenues as reported in ARMIS is flawed and is based upon undocumented and unreproducible data.

20. Dr. Taylor states that he "use[d] Verizon DSL revenue data for 2002 and 2003 to eliminate the problem ... that ARMIS data includes DSL revenue but not DSL lines, thus overstating the growth in revenue per line during periods when DSL revenue was growing rapidly."[9] Dr. Taylor testifies that he "took ARMIS data on DSL revenue for Verizon for 2002 and 2003 from row 4012 of the ARMIS Report 43-04 ... [and] then subtracted these DSL revenues from revenues from ARMIS special access revenue and divided the difference by VGEs."[10] However, row 4012 of the ARMIS report 43-04 presents *total special access category revenues*, and does *not* provide disaggregated data on DSL revenues as Dr. Taylor has represented. To the best of my knowledge, Verizon DSL *revenues* are not separately reported

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8. The 11.7% annual reduction calculated by Dr. Taylor makes no adjustment to exclude DSL revenues, and similarly this 5.9% annual reduction in average revenue per VGE makes no DSL adjustment.

9. Taylor Reply Declaration, at para. 7.

10. *Id.*, at para. 8.

anywhere in ARMIS, and while claiming that he "took ARMIS data on DSL revenue for Verizon," that information is simply not to be found at the cited location – or, for that matter, anywhere else in ARMIS.[11] Dr. Taylor's statement that he "took ... DSL revenue ... from row 4012" may well have been cleverly worded, with "took ... from" to be read as "subtracted internal non-public Verizon DSL revenue amounts from." However, without the actual DSL revenue or a citation to its source, there is simply no way to reproduce or verify any of Dr. Taylor's "DSL" calculations.

21. Moreover, not all of Verizon's DSL-related revenue is included in the interstate special access category. Some DSL services are provided as "line sharing" UNEs, and some are provided to end users as part of Internet service bundles. As such, if Dr. Taylor removed *all* Verizon DSL-related revenue from the interstate special access category revenues reported in ARMIS, he may well have "removed" revenues that were not even there to begin with. The results being claimed by Dr. Taylor – larger percentage reductions in (non-DSL) special access revenues than for the category as a whole – could well be explained by this error.

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11. In its 2002 Annual ARMIS Order (AAD 95-91, CC Docket 69-182, Released December 19, 2002), the Commission added rows 0487 and 0488 to ARMIS 43-07, Table II. These rows purport to provide the "Total xDSL Terminated at Customer Premises" and "xDSL Terminated at Customer Premises via Hybrid Fiber/Metallic Interface Locations," which are *service quantities* (i.e., number of DSL *lines*), *not* DSL *revenues*. It is my understanding that the intent of the instructions for rows 487 and 488 is to capture quantities of xDSL services where these services and their underlying loop facilities to the customer premises are provided solely by the incumbent LEC. Thus, these quantities would not include xDSL provided by other service providers through UNE arrangements, but would include ILEC-provided xDSL lines that are bundled with Internet services. In any event, Verizon apparently has not populated these rows for any operating company in either 2002 or 2003.

22. As I have shown, the baseline reductions in average revenue per VGE as calculated by Dr. Taylor are simply incorrect, and substantially overstate the actual decrease that occurred during the 2001-2003 "pricing flexibility" period. Moreover, since a large portion of Verizon's special access revenue base remained under price caps even after 2001, it is not possible to separate the effects of "price caps" from "pricing flexibility" even from this corrected figure. Finally, the embellishment of Dr. Taylor's analysis to exclude what purport to be DSL revenues cannot be reproduced and, in any event, has been applied to baseline figures that are themselves demonstrably wrong. Accordingly, the DSL adjustments cannot reasonably be afforded weight or relevance.

USE OF ARMIS AS A BASIS FOR ESTIMATING SPECIAL ACCESS RATES OF RETURN

Escalating RBOC rates of return on special access services, as demonstrated by a consistent year-over-year comparison of regulatory accounting costs as reported in ARMIS, overcome any alleged deficiencies in such allocations and likely *understate* the rates of return actually being generated by these services if calculated on the basis of forward-looking economic cost.

23. In my October 4, 2004 declaration (at para. 14), I cited the astronomical – and growing – double-digit returns that the RBOCs were deriving from their special access services as confirmation of the excessive special access prices *and* the utter lack of effective competition for special access services. In their October 19 responses, the RBOCs sought to dismiss these results by attempting to undermine the validity of the *process* by which these enormous rates of return had been calculated – the RBOCs' own accounting data as reported to the Commission through periodic ARMIS filings – results upon which the RBOCs themselves rely for different ratemaking purposes. Significantly, however, the RBOCs have not provided any *facts* or *analysis* that specifically demonstrates that the ARMIS data or the results derived therefrom are actually wrong. Moreover, as I demonstrated at paras. 81-82 of my Reply Declaration, the escalation in RBOC special access rates of return is the direct result of a succession of large cost decreases that were not reflected in special access prices. Were special access services subject to actual competition as the RBOCs claim, such large – and growing – price/cost disparities could not be sustained in the marketplace.

24. Citing writings by himself and longtime RBOC advocate Prof. Alfred E. Kahn, Dr. Taylor, testifying for Verizon, asserts that "[h]igh or increasing rates of return calculated using regulatory cost assignments for interstate special access services do not in themselves indicate excessive economic earnings reflecting the exercise of market power."[12] What Dr. Taylor sidesteps, however, is that just because "regulatory cost assignments" were the basis for identifying these "high or increasing rates of return" does not make them comparatively wrong. Significantly, other than rhetoric and generalizations as to the "invalidity" of regulatory cost assignments and ARMIS, none of the RBOCs and none of the RBOCs' declarants have identified *any* specific cost assignment errors whose effect would be to overstate special access category earnings.

25. In my October 19, 2004 declaration, I demonstrated (at paras. 81-82) that the average cost per voice-grade equivalent channel, as developed from ARMIS reports filed by the RBOCs with the FCC over the 1996-2003 period, had decreased at a far greater rate than the average revenue per VGE as calculated by Dr. Taylor. For example, Verizon's average net investment per VGE dropped by 71.3% over the 1996-2003 period, whereas (by Dr. Taylor's calculation) its revenue per VGE decreased by only 47.2% over that same period. SBC's average net investment per VGE fell by 65.4%, while its average revenue per VGE fell by only 2.2% over the same seven-year period. Importantly, the analysis that I presented in my October 19, 2004 reply declaration focused specifically upon the *change* in costs in relation to the *change* in revenues

12. Taylor Reply Declaration, at para. 14.

over the 1996-2003 period, and *not* upon the absolute gap between special access revenues and costs. Thus, whatever infirmities may be present in the "regulatory cost assignments" underlying the ARMIS data were held constant over the entire eight-year period. Accordingly, even if one were to *accept* Dr. Taylor's claim that "accounting costs" cannot be used to assess profitability for any specific category of service, such costs and cost assignments still provide a valid basis for comparison over time, so long as the underlying cost assignments and accounting rules remain essentially fixed over the same time frame.

The decreasing cost trends reflected in ARMIS regulatory accounting data are entirely consistent with what one would expect to find in a declining cost industry, such as telecommunications.

26. Most important, *this result – i.e.,* significant and rapid decreases in average embedded cost – *is entirely* consistent with what one would expect to find in a declining cost industry subject to substantial economies of scale and where the forward-looking economic cost is below the average historic embedded cost. And to the extent that forward-looking costs are *below* historic embedded accounting costs as reported in ARMIS, then the rates of return on special access services as calculated using those historic embedded costs as reported in ARMIS actually *understate* the *true* rate of return on investment when reckoned with respect to forward-looking economic cost.

27. Along the same lines, SBC claims that "an ARMIS-based calculation – even assuming it to be accurate – reveals only an *accounting* rate of return, not an *economic* rate of return."[13] What SBC *fails to mention*, however, is that if one were to calculate an economic rate of return using forward-looking economic cost rather than historic embedded accounting cost, *the rate of return being realized on special access services would be considerably greater.* In that regard, if Dr. Taylor objects to the use of ARMIS as a basis for a revenue/cost comparison because ARMIS reports are based upon "accounting data" and "cost allocations," then the solution is to base such a comparison on forward-looking economic cost. I am confident that, if that were done, the RBOC special access rates of return based upon forward-looking economic cost would be considerably *higher* than the special access rates of return based upon costs reported in ARMIS that I presented in my October 4, 2004 declaration.

28. The utter vacancy of the RBOCs' various challenges to ARMIS is demonstrated by the sheer circularity of their reasoning. For example, SBC states that:

> SBC is required to report *costs* in ARMIS according to allocation factors that were based on usage studies from the late 1990s. The result is that, while SBC's interstate special access revenues have grown as a percentage of SBC's overall revenues, the costs against which the CLECs compare those revenues have not kept pace. Thus, for example, while SBC's interstate special access revenues grew from 30 percent of total interstate revenues in 1999 to over 48 percent in 2003, the amount of interstate costs allocated to special access over the same period increased at a much lower rate. In particular, between 1999 and 2003, the share of interstate telephone plant allocated to special access grew from 23 percent to only 29 percent, while the share of interstate average net investment allocated to special access

13. SBC Reply Comment, at 44, emphasis in original.

> increased from 23.8 percent to 28.8 percent. As these figures show, the amount of SBC's interstate investment allocated to special access for accounting purposes in no way reflects the share of that investment actually used to provide special access services.[14]

Of course, these "figures" show nothing of the sort. There is no *a priori* reason why "the amount of SBC's interstate *investment* allocated to special access for accounting purposes" should be proportional to the share of special access *revenues*, and SBC has nowhere offered any evidence supporting such a proposition. Under SBC's convoluted reasoning, the more it raises its special access prices, the greater the disparity between the special access category's share of costs per "regulatory cost assignments" and that category's share of revenues. Indeed, to the extent that special access *prices* are excessive relative to the underlying cost of these services, one would expect that the proportion of investment and other costs associated with special access would be *substantially less* than the proportion of total interstate revenues being derived by SBC from its overpriced special access services. And that is precisely consistent with the "results" that SBC has reported here.

29. In a final "hail Mary" attempt to excuse the astronomical rates of returns that it, along with all of the other RBOCs, have been earnings on their special access services, SBC now advances the notion that some sort of *transfer* of costs from special access to switched access has occurred, causing rates of return for the former to rise while depressing the rates of return on the latter:

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14. SBC Reply Comments, at 44-45.

> The rate-of-return figures identified by the CLECs thus reflect nothing more than a regulatory lag in the manner in which SBC is required to report its accounting costs, a matter borne out by the fact that, even as ARMIS suggests a high accounting rate of return for interstate special access in 2003, the corresponding figure for interstate switched access fell to negative 4.9 percent.[15]

Of course, nowhere does SBC actually identify, let alone *quantify*, such transfers, and in fact offers no affirmative evidence indicating that any such reallocations of cost had taken place.

30. Although the phenomenon identified by SBC – increasing rates of returns ("RORs") for special access concurrently with decreasing RORs for switched access – *might* be explained by a reallocation of cost (if such a reallocation had actually occurred), a more detailed analysis of what has taken place confirms that these seemingly coincident events have entirely separate and distinct causes. First, as demonstrate in Figure 1 below, RORs for *both* special *and* switched access experienced concurrent *increases* in the past – an outcome that is not consistent with SBC's "reallocation" theory. Special access RORs have been on the rise because special access *demand* has been on the rise *and* because the forward-looking economic cost of the additional special access services being provided is significantly below average embedded cost. The source of the drop in *switched access* RORs can be seen in Figure 2 below. Total demand for switched access lines peaked in 2000, and has been decreasing since then. The drop-off in demand for switched access lines has occurred principally with respect to *additional* (i.e., non-primary) residential access lines due to the increased use of wireless services in place of "teen lines" and

15. *Id.*, at 45.

the migration of dial-up Internet access to DSL and cable modem services. Additionally, because wireless carriers typically bundle long distance calling into their wireless pricing plans (which they are able to do in large part because, unlike IXCs, wireless carriers pay no access charges on the originating end of long distance calls and pay no terminating access charges on any call staying within the same "Major Trading Area"), consumers have shifted a large portion of their long distance calling to their wireless phone, thereby eroding RBOC switched access revenues. Importantly, a large portion of the "loss" of second line and switched access revenues have been retained by the RBOCs – but not reported in ARMIS – from wireless services provided by RBOC-affiliated CMRS carriers and through bundled high-speed Internet services that include DSL. As Figure 2 also shows, SBC's net investment in switched access has been decreasing, belieing SBC's allegation that costs have been shifted from special access to switched access. The entirely bogus "linkage" that SBC seeks to draw as between the increase in special access RORs and the drop-off in switched access RORs has no basis in fact, and clearly cannot withstand scrutiny.

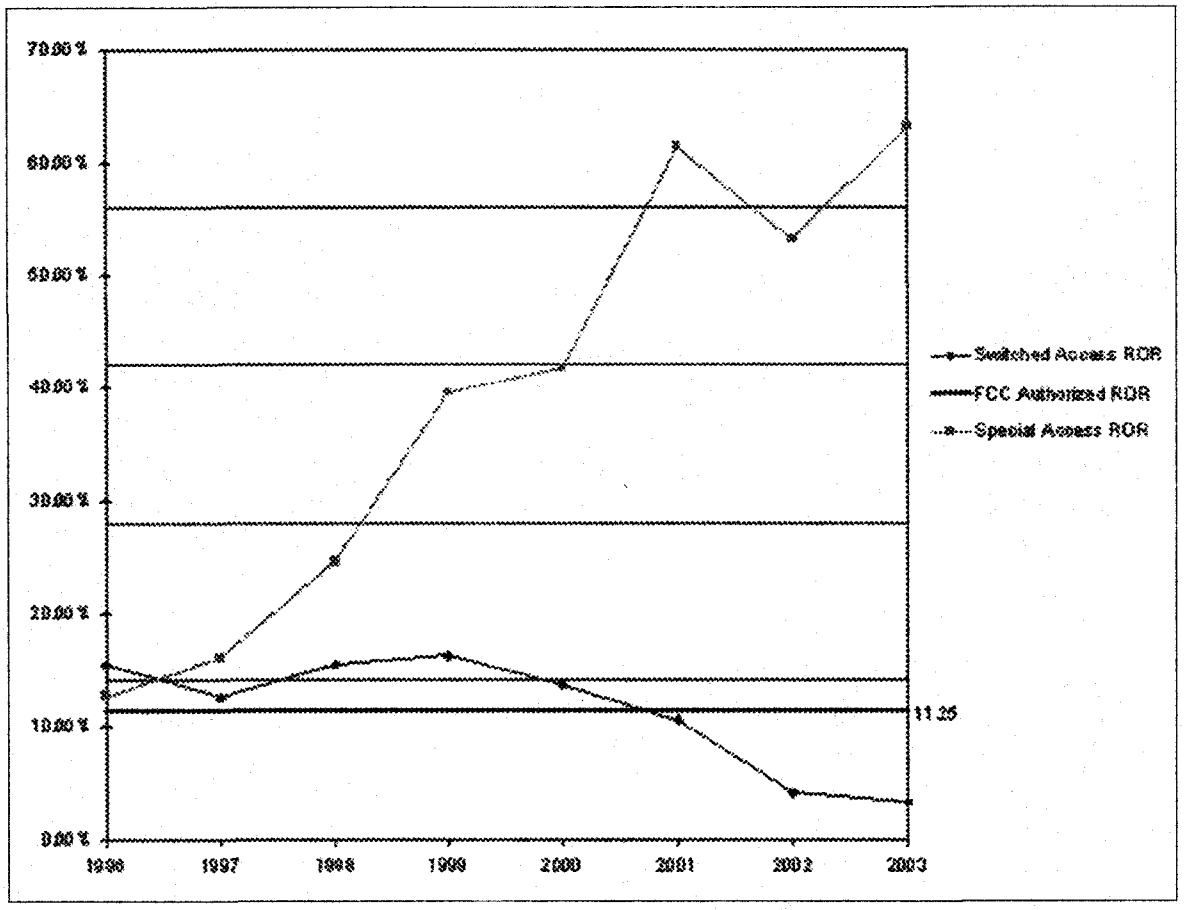

Figure 1. There is no evidence of any "linkage" between the increase in SBC's special access rates of return and the drop-off in its switched access rates of return, as confirmed by the fact that both were increasing together until the demand for switched access lines started to decline after 2000.

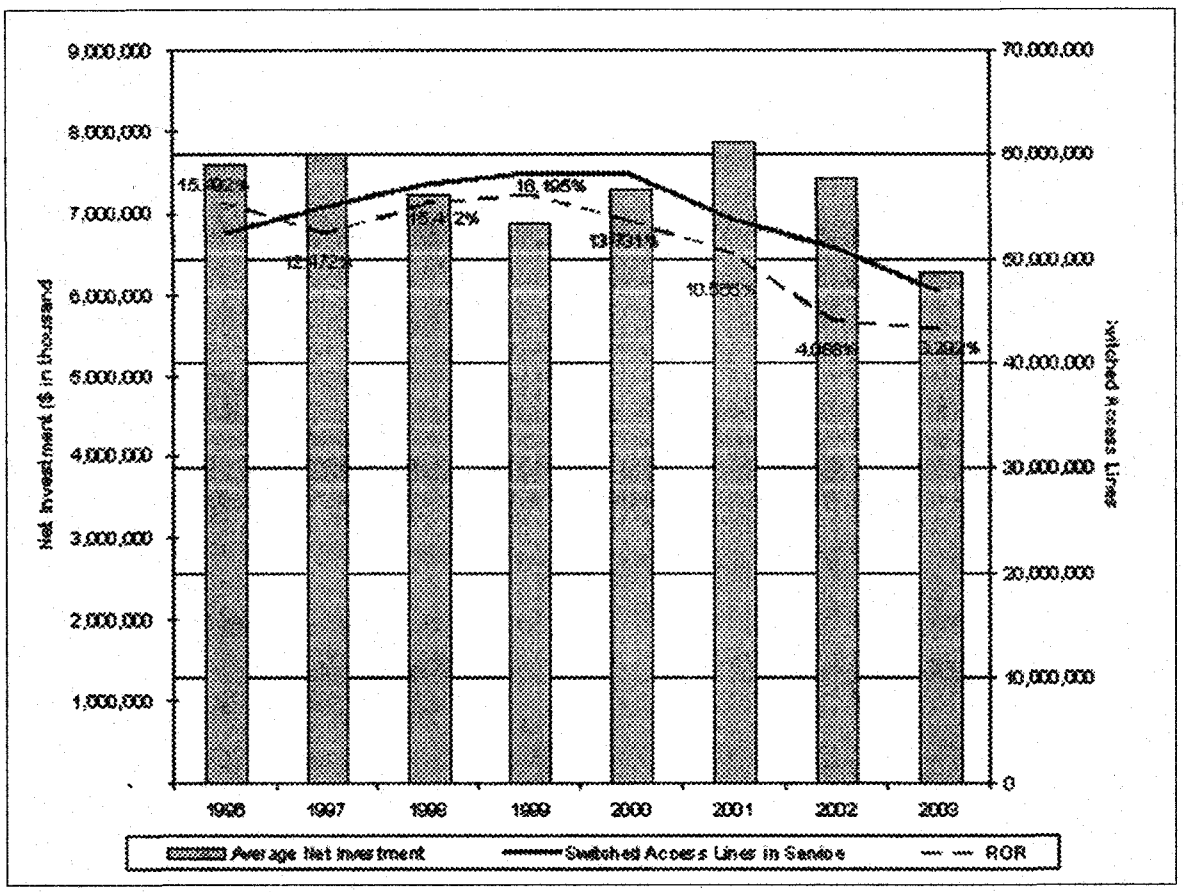

Figure 2. The decrease in switched access rates of return after 2000 resulted from the drop-off in consumer demand for switched access lines, and had nothing to do with any reallocation of costs from the special access category.

The RBOCs have expressly characterized ARMIS regulatory accounting costs and cost allocations as representing "actual costs" when arguing that setting UNE prices based upon TELRIC constitutes a "taking."

31. Finally, it is worth taking a moment to consider the implications of the RBOCs' non-specific contentions that ARMIS allocations of investments and expenses to special access are understated. If costs are under-assigned to special access, then they must be *over-assigned* to other service categories, such as (in the case of jurisdictionally interstate services) the "common line" category. This might not matter if the RBOCs were *never* to rely upon "accounting costs" as reported in ARMIS for any rate-setting purpose. However, that is clearly not the case here. In several recent UNE cases in the midwest, SBC witness Dr. Debra Aron specifically relied upon ARMIS accounting costs as constituting the "actual costs" of SBC's UNE-loop and UNE-P. For example, in her testimony before the Wisconsin PSC, Dr. Aron stated:

> I used the FCC's financial accounting information as reported in its Automated Reporting Management Information System ("ARMIS") files to obtain the historical cost data. *These data are reported to the FCC for purposes of tracking the interstate rate of return.*[16]

Verizon, SBC and the other RBOCs certainly rallied behind the "accounting cost" flag in advancing "takings" claims in cases challenging the FCC's TELRIC rules. For example, the Commission noted:

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16. *Petition of SBC Wisconsin to Establish Rates and Costs for Unbundled Network Elements,*" Wisc. PSC Docket No. 6720-TI-187, Direct Testimony of Debra J. Aron on behalf of SBC Wisconsin, March 12, 2004 ("Aron Direct (SBC Wisconsin)"), at 9, emphasis supplied.

> PacTel argues that, in order to allow for a reasonable profit, rates for interconnection and unbundled elements must permit full recovery of historical accounting costs. PacTel charges that the federal courts have held that the determination of a "reasonable profit" should consider the effect on the carrier's whole enterprise and, therefore, the sum of the carrier's rates must enable it to recover its total historical costs.[17]

The RBOCs have made similar arguments as to their right to recover "actual" or "accounting" costs before the United States Supreme Court.[18]

32. If, as the RBOCs now claim, costs that should have been included in the special access category have been assigned elsewhere, then the RBOCs have been systematically misrepresenting the "actual" historic costs of other services – particularly UNEs – in sworn testimony submitted to state PUCs and to this Commission as well. For example, SBC's Dr. Aron explained that

> The ARMIS data represent only the interstate allocation of the costs of regulated services, so I "reversed out" the effects of that allocation to determine total loop (UNE-L) and line (UNE-P) costs. For example, the FCC attributes 25 percent of

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17. *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996,* CC Docket 96-98; *Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, CC Docket 95-185, *First Report and Order*, FCC 96-325, 11 FCC Rcd 15499 (1996), at para. 648, citing FPC v. Hope Natural Gas, 320 U.S. 591 (1944) and Jersey Central Power & Light v. FERC, 810 F.2d 1168, 1172 (D.C. Cir. 1987).

18. *Verizon Communications, et. al. v. Federal Communications Commission, et. al.,* 122 S. Ct. 1646, 1680 (2002).

loop costs to the interstate jurisdiction, so I computed total loop costs by multiplying the interstate portion by 4.[19]

Representations made by the RBOCs to state PUCs and to the federal courts as to the validity of accounting costs as representing "actual costs" cannot be squared with the claims being advanced here that ARMIS underallocates costs to the special access category. Costs cannot be *under*allocated to special access and yet be *correctly* allocated to the common line category. More generally, regulatory cost assignments cannot be arbitrary and invalid for purposes of assessing special access rates yet provide a valid basis for a takings claim when applied to UNEs. Clearly, the Commission must look past this rhetoric and recognize what ARMIS demonstrates – that special access prices are grossly excessive by any standard, and that those excessive prices certainly could not be sustained if special access services were actually competitive.

19. Aron Direct (SBC Wisconsin), at 9.

VERIFICATION

The foregoing statements are true and correct to the best of my knowledge, information and belief.

LEE L. SELWYN

Appendix 1

CALCULATION OF CHANGES IN AVERAGE REVENUE PER VOICE GRADE EQUIVALENT BASED UPON CORRECT ARMIS DATA

LIST OF TABLES

APPENDIX 1

CALCULATION OF CHANGES IN AVERAGE REVENUE PER VOICE GRADE EQUIVALENT BASED UPON CORRECT ARMIS DATA

1. Dr. Taylor's Table 1 presents what purport to be average annual percentage changes in his "previous" and "Excluding DSL" average revenue figures for Verizon special access from 1996-2003. However, *neither* his baseline "previous" figures, *nor* his revised figures purporting to exclude DSL, are reproducible. The only figure I have been able to approximately reproduce is Dr. Taylor's "Before Pricing Flexibility" baseline figure of –10.7%, which appears to be the arithmetic average of the annual change in special access revenues per VGE "Before Pricing Flexibility" for 1996-2000, inclusive. The components of this average are shown on the following table; unlike Dr. Taylor, who did not provide any details or specific sources for his calculations, the tables below *include* this information.[1]

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1. Attachment 1 to my October 19, 2004 Reply Declaration provides the data extracted from ARMIS upon which these calculation have been based.

Table A1 Annual change in average revenue per VGE – Verizon 1996-2000		
Year	Avg. revenue per VGE	Year-over-year change
1996	$ 290.87	-
1997	272.85	– 6.2%
1998	256.79	– 5.9%
1999	236.65	– 7.8%
2000	181.61	– 23.3%
Average annual change based upon arithmetic average of individual year-over-year changes		– 10.8%
Geometric average annual rate of change from 1996 to 2000		– 11.1%
Average annual change as claimed by Taylor		– 10.7%
Sources: ARMIS Reports 43-01, Annual Summary Report: Table I, YE 1996-2003; Taylor Reply Declaration, at Table 1.		

2. The 23.3% decrease in average revenue per VGE shown for 2000 obviously cannot be entirely attributed to the mandated price cap reduction of 4.9% (GDP-PI–6.5%), nor can Dr. Taylor claim that it represents competitive pressure on Special Access rates, since (as Dr. Taylor notes) this period is *before* Verizon was granted pricing flexibility. Indeed, according to Dr. Taylor's own data, significant factors *other than competition and price caps* must have affected the average revenue per VGE during that period. As I discuss below, it is very likely that much – perhaps *most* – of this extraordinary change between 1999 and 2000 is a result of a demand shift from relatively low capacity DSn facilities to higher capacity OCn facilities.

3. Beyond the baseline annual growth figure for 1996-2000, none of Dr. Taylor's figures appear to be reproducible. Specifically, using the ARMIS data cited by Dr. Taylor in his October 4, 2004 Declaration and his October 19, 2004 Reply Declaration, I was unable to reproduce *either* Dr. Taylor's 1996-2003 *or* his 2001-2003 "Nominal Annual Growth" figures. I was, however, able to produce correct figures for the annual changes in average revenue per VGE, as shown in Tables A2 and A3 below. For the entire 1996-2003 period, Dr. Taylor had put the average annual change in average revenue per VGE at –9.9%; taking the arithmetic average of year-over-year values computed from data in ARMIS, the correct average change is –8.3%. For the 2001-2003 "pricing

flexibility" period, Dr. Taylor's figure for the annual change in average revenue per VGE was –11.7%; the correct figure, using data drawn from ARMIS, is only 5.9%. Thus, the post-pricing flexibility decrease in average revenue per VGE is actually only half of what has been claimed by Dr. Taylor.

Table A2
Annual change in average revenue per VGE – Verizon
1996-2003

Year	Avg. revenue per VGE	Year-over-year change
1996	$ 290.87	-
1997	272.85	– 6.2%
1998	256.79	– 5.9%
1999	236.65	– 7.8%
2000	181.61	– 23.3%
2001	175.29	– 3.5%
2002	182.42	+ 4.1%
2003	153.53	– 15.8%
Average annual change based upon arithmetic average of individual year-over-year changes		– 8.3%
Geometric average annual rate of change from 1996 to 2003		– 8.7%
Average annual change as claimed by Taylor		– 9.9%
Overstatement by Taylor relative to arithmetic average		**– 1.6%**

Sources: ARMIS Reports 43-01, Annual Summary Report: Table I, YE 1996-2003; Taylor Reply Declaration, at Table 1.

Table A3 Annual change in average revenue per VGE – Verizon 2001-2003		
Year	Avg. revenue per VGE	Year-over-year change
2001	$ 175.29	-
2002	182.42	+ 4.1%
2003	153.53	– 15.8%
Average annual change based upon arithmetic average of individual year-over-year changes		– 5.9%
Geometric average annual rate of change from 2001 to 2003		– 6.4%
Average annual change as claimed by Taylor		– 11.7%
Overstatement by Taylor relative to arithmetic average		**– 5.8%**
Sources: ARMIS Reports 43-01, Annual Summary Report: Table I, YE 1996-2003; Taylor Reply Declaration, at Table 1.		

4. Dr. Taylor's Table 1 specified the two time segments as 1996-2000 and 2001-2003, the latter seemingly excluding the 2000-to-2001 year-over-year change. On the possibility that 2001-2003 was a typographical error and that the period shown was actually 2000-2003, I performed the same calculation using the same ARMIS data, but was also unable to reproduce Dr. Taylor's results. Again, the true results show that the actual decrease in average revenue per VGE is well below that claimed by Dr. Taylor.

Table A4 Annual change in average revenue per VGE – Verizon 2000-2003		
Year	Avg. revenue per VGE	Year-over-year change
2000	$ 181.61	-
2001	175.29	– 3.5%
2002	182.42	+ 4.1%
2003	153.53	– 15.8%
Average annual change based upon arithmetic average of individual year-over-year changes		– 5.1%
Geometric average annual rate of change from 2000 to 2003		– 5.4%
Average annual change as claimed by Taylor		– 11.7%
Overstatement by Taylor relative to arithmetic average		**– 6.6%**
Sources: ARMIS Reports 43-01, Annual Summary Report: Table I, YE 1996-2003; Taylor Reply Declaration, at Table 1.		

5. Finally, from a simple arithmetic standpoint, Dr. Taylor's Table 1 baseline figures fail to add up. The "previous" computation reports a "nominal annual growth" rate of -9.9% and a real annual growth rate of -12.0% for the entire 1996-2003 period. Significantly, these rates are *higher* than the separately reported "previous" nominal and real growth rates for each of the two component time segments, i.e., both 1996-2000 *and* 2001-2003. Since the two separate 1996-2000 and 2001-2003 figures are presumably the only components of the 1996-2003 figure, an average taken across all data that is smaller than the averages for each of its two component parts is a mathematical impossibility, unless, of course, the two component periods presented by Dr. Taylor intentionally *do not* constitute the entire 1996-2003 period.

Exhibit 2

REDACTED – For Public Inspection