ORIGINAL

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November 21, 2000

Mrs. Blanca S. Bayó
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Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Docket No. 990649-TP (UNE Docket)

Dear Ms. Bayó:

Enclosed is an original and fifteen copies of BellSouth Telecommunications, Inc.'s Post-Hearing Brief, which we ask that you file in the above-referenced matter.

A copy of this letter is enclosed. Please mark it to indicate that the original was filed and return the copy to me. Copies have been served to the parties shown on the attached Certificate of Service.

Sincerely,

Bennett L. Ross (BW)

Bennett L. Ross

cc: All Parties of Record
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CERTIFICATE OF SERVICE
Docket No. 990649-TP

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(+) Signed Protective Agreement

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ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Investigation into Pricing of Unbundled Network Elements	))))	Docket No. 990649-TP Filed: November 21, 2000

BELLSOUTH TELECOMMUNICATIONS, INC.'S POST-HEARING BRIEF

I. INTRODUCTION

BellSouth Telecommunications, Inc. ("BellSouth") respectfully submits its Post-Hearing Brief to address the establishment of BellSouth's prices for unbundled network elements in Florida. While the issues confronting the Florida Public Service Commission ("Commission") may appear daunting -- both in number and complexity -- the Commission faces a fundamental choice in this case. The Commission must choose between, on the one hand, establishing rates based on the costs BellSouth is expected to incur in providing service in Florida on a going-forward basis, as proposed by BellSouth, or, on the other hand, establishing rates that bear no relationship to BellSouth's costs, as proposed by BellSouth's competitors.

Rates for unbundled network elements and interconnection must be "just and reasonable." This is the pricing standard set forth in Section 252(d) of the Telecommunications Act of 1996 ("1996 Act"). The Commission also must ensure that rates are set at a level which implements local competition in a fair and balanced manner and that such rates comply with the pricing rules established by the Federal Communications Commission ("FCC") – a task complicated by the fact that the validity of at least some of those rules is in doubt. *See Iowa Utils. Bd. v. FCC*, 219 F.3d 744, 750 (8th Cir. 2000).

In this case, BellSouth has submitted detailed cost studies consistent with the FCC's pricing rules. Although all of BellSouth's competitors rely, to one extent or another, upon BellSouth's cost studies as the basis for their various pricing proposals, one would never know given the significant disparity in many of the prices they propose. Such disparity is primarily due to fundamentally different approaches in this case. BellSouth's goal in this proceeding is to have prices established that will fairly and adequately compensate BellSouth for the services, functions and facilities that it is required to provide to Alternative Local Exchange Carriers ("ALECs") and that will further facilitate competition in the local exchange market in Florida. By contrast, BellSouth's competitors seek to compel BellSouth to subsidize ALEC entry into the local exchange market in Florida. To that end, various ALECs have proposed various adjustments to BellSouth's cost studies that, if adopted, would result in the establishment of rates well below the costs BellSouth is expected to incur in providing service in Florida in the future.

A good example is the recurring cost of a 2-wire voice grade loop – Service Level 2 ("SL-2") (Cost Element A.1.2). BellSouth determined that the forward-looking recurring cost of a SL-2 loop is $20.35. A rate of $20.35 for a SL-2 loop compares with the current rate of $17 previously approved by this Commission. By contrast, several parties in this proceeding, most notably AT&T Communications of the Southern States, Inc. ("AT&T") and MCI WorldCom, Inc. ("MCI"), insist that the rate for a SL-2 loop should be $8.00 and that, in the more dense locations in Florida, that rate should be only $5.25. That a loop could cost less than a pizza is absurd on its face and only underscores the arbitrariness of the adjustments to BellSouth's cost studies advanced by BellSouth's competitors.

The pricing proposals put forth by AT&T, MCI, and the other ALECs in this proceeding are unsound both as a matter of law and of public policy. Adopting their pricing proposals

would result in rates that are unjust and unreasonable, while at the same time providing an unwarranted subsidy to BellSouth's competitors and destroying any incentive for facilities-based competition in this State. No ALEC would ever build its own loop in Miami when, for example, it could lease that loop from BellSouth for only $5.25. All of these factors weigh in favor of setting rates for unbundled network elements and interconnection services based on BellSouth's proposals, rather than the fanciful proposals advanced by BellSouth's competitors.

II. DISCUSSION

Issue 1: What factors should the Commission consider in establishing rates and charges for UNEs (including deaveraged UNEs and UNE combinations)?

*** The Commission must set rates at a level that implements local competition in a fair and balanced manner. In so doing, the Commission must apply the factors in 47 U.S.C. § 252(d) and applicable FCC regulations in light of *Iowa Utilities Board vs. FCC.* ***

The rates established in this proceeding will have profound effects on the continued development of competition in Florida. The outcome of this docket will affect how local competition will continue to develop, which companies will choose to compete, which customers will benefit from local competition, and how advanced technologies will be deployed. If rates for network elements are set at levels that are either too high or too low, then the development of efficient competition in the local market, as intended by Congress, will not occur, customers will not benefit, and economic development will be thwarted. Varner, Tr. Vol. 1 at 29-30.

The Commission should respectfully decline the ALECs' invitation to establish "drastically" reduced rates for unbundled network elements in the name of promoting competition. Tr. Vol. 7 at 1049-1050 (opening statement of Joseph McGlothlin). The establishment of "drastically" reduced rates, while beneficial to the profit margins of the ALECs,

would come at a severe cost to consumers in Florida. First, prices that are understated would deter BellSouth from making investments in its network, since it would only guarantee that such investments would go unrecovered. BellSouth's obligation is to unbundle its existing network; if unbundled network element prices are set too low, incentives to expand and upgrade that network are substantially diminished. *Id.* at 35.

Second, "drastically" reduced prices for unbundled network elements would invite inefficient ALEC entry into the local exchange market by placing all the risks of building and maintaining a network on BellSouth. ALECs will over-consume BellSouth's facilities through the purchase of unbundled network elements and under-invest in their own facilities, even when investing in their own facilities is the efficient choice. The ALECs in effect get a "free ride" on BellSouth's network. If prices are set too low, then ALECs do not bring to the marketplace anything more than an arbitrage mechanism that allows them to avoid paying the costs they would otherwise have to pay in a competitive marketplace. *Id.* at 36.

Third, setting "drastically" reduced rates would result in a vicious cycle that ultimately harms consumers. If the prices of the services provided to ALECs are understated, BellSouth would end up subsidizing its competitors and would be forced to attempt to recover this revenue shortfall through its retail prices. However, because competitors can undercut BellSouth's retail prices utilizing a subsidy provided by BellSouth's end users, this shortfall would ultimately be borne by those end users that have the fewest competitive options, such as rural residential customers. *Id.* at 38.[1]

[1] All of these issues apply both to recurring and nonrecurring prices. However, the impact of "drastically" reduced nonrecurring prices is felt immediately, since such prices principally recover labor cost and direct expenses that must be paid immediately by BellSouth. Consequently, the Commission should be very careful to ensure that nonrecurring prices fully recover the costs BellSouth is expected to incur on a going-forward basis. Nonrecurring prices also should recover the cost of activities that will actually be undertaken. For example, a new technology that could reduce nonrecurring costs of an unbundled network element should only be used as a basis for prices to the extent that it will actually be used by BellSouth to provide that element. Varner, Tr. Vol. 1 at 40-41.

Congress recognized the importance of establishing adequate rates for unbundled network elements, requiring that such rates be "just and reasonable." 47 U.S.C. § 252(d)(1). Congress also provided guidelines for just and reasonable rates, mandating that rates: (1) be "based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or network element (whichever is applicable)"; (2) be "nondiscriminatory"; and (3) "may include a reasonable profit." 47 U.S.C. § 252(d)(1).

In implementing the pricing standards under the 1996 Act, the FCC adopted rules that implemented a forward-looking cost methodology dubbed "TELRIC" (short for Total Element Long Run Incremental Cost), but subjected this methodology to certain idiosyncratic efficiency assumptions. In particular, the FCC required forward-looking costs to be calculated assuming that, at any given time, the incumbent local exchange carrier ("ILEC") uses "the most efficient network architecture, sizing technology, and operating decisions that are operationally feasible and currently available to the industry." First Report and Order, *In re: Implementation of Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499, ¶ 620 (Aug. 8, 1996), *vacated in part, Iowa Utils. Bd. v. FCC,* 120 F.3d 753 (8th Cir. 1997), *rev'd in part, aff'd in part MCI Corp. v. Iowa Utils. Bd.*, 119 S. Ct. 721 (1999) ("*First Report and Order*"). According to the FCC, this "hypothetical" network standard would "best replicat[e] the conditions of a competitive market." *First Report and Order* ¶ 679.

As required by FCC rules, BellSouth developed cost studies to reflect the costs BellSouth expects to incur in providing unbundled network elements on a going-forward basis in Florida. These costs are based on an efficient network designed to incorporate currently available forward-looking technology, but recognizing BellSouth's provisioning practices and network guidelines, and include shared and common costs. Caldwell, Tr. Vol. 1 at 83-87.

In developing both recurring and nonrecurring costs for unbundled network elements and combinations, BellSouth utilized several cost models, including: (1) the BellSouth Telecommunications Loop Model© ("BSTLM") to support the cost development for unbundled loop elements, service-specific loops, and combinations; (2) the model office module of BellCore's Switching Cost Information System Model ("SCIS/MO") and Simplified Switching Tool© ("SST") Model to support the cost development for all switch-related elements, including ports, usage, and vertical features; (3) the BellSouth Cost Calulator©, which converts input data (material prices/investments by field reporting code, recurring additives, nonrecurring additives, and work times by job function code) into cost; (4) the Capital Cost Calculator©, which produces depreciation, cost of money, and income tax factors that are applied to investments to calculate capital costs; and (5) the Loop Multiplexer, Digital Loop Carrier, SONET, and DS1 price calculators, which develop the material price of specialized components used in the provisioning of various network capabilities. For nonrecurring costs, BellSouth did not use a "cost model" in the formal sense. Rather, estimates of the activities required to provision each element under study were provided by BellSouth personnel familiar with the provisioning process, and these estimates were entered into the BellSouth Cost Calculator on the Nonrecurring Input sheet by element. *Id.* at 88-99.

BellSouth's cost studies should be used to establish rates in this proceeding, and no party contends otherwise. In fact, no ALEC submitted any cost studies of its own, electing instead to rely upon BellSouth's cost studies as the basis for their proposed rates. While the parties may

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© 1997 BellSouth Corporation All Rights Reserved (TELRIC Calculator)
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disagree about the inputs to the BellSouth cost studies, there is no disagreement that the Commission should use these studies to establish BellSouth's rates in this proceeding.

Issue 1(a): What is the current state of the law with regard to the use of a forward-looking cost methodology for computing rates for unbundled network elements?

On July 18, 2000, the United States Court of Appeals for the Eighth Circuit vacated FCC Rule 51.505(b)(1), which imposed the "hypothetical" network assumption in developing rates for unbundled network elements and interconnection. *Iowa Utils. Bd. v. FCC*, 219 F.3d 744, 750 (8th Cir. 2000). As the Eighth Circuit observed:

> It is clear from the language of the statute that Congress intended the rates to be "based on the cost...of providing the interconnection or network element," not on the cost some imaginary carrier would incur by providing the newest, most efficient, and least cost substitute for the actual item or element which will be furnished by the existing ILEC pursuant to Congress's mandate for sharing. Congress was dealing with reality, not fantasizing about what might be. The reality is that Congress knew it was requiring the existing ILECs to share their existing facilities and equipment with new competitors as one of its chosen methods to bring competition to local telephone service, and it expressly said that the ILECs' costs of providing those facilities and that equipment were to be recoverable by just and reasonable rates. *Congress did not expect a new competitor to pay rates for a "reconstructed local network," but for the existing local network it would be using in an attempt to compete.*

Id. (emphasis added). Thus, under the Eighth Circuit's decision, rates must be established based on the cost to BellSouth of providing its existing facilities and equipment, and not on "some state of the art presently available technology ideally configured but neither deployed by the ILEC nor to be used by the competitor ...." *Id.*

On September 22, 2000, the Eighth Circuit stayed its mandate on FCC Rule 51.505(b)(1) pending the disposition of any petitions for certiorari. *See Iowa Utils. Bd. v. FCC,* Docket No. 96-3321 (8th Cir. Sept. 22, 2000). Petitions for certiorari were subsequently filed by the FCC, AT&T, and MCI, among others, challenging various aspects of the Eighth Circuit's decision.

Although it is impossible to predict whether the Supreme Court will grant these petitions, the Court previously granted certiorari in a related case involving the FCC's pricing methodology. *See GTE Service Corp. v. FCC,* 120 S. Ct. 2214 (2000).

Whatever the outcome at the Supreme Court, the Commission should not be swayed by the arguments of those parties that, for their own self-interested purposes, seek to distort the Eighth Circuit's opinion. For example, Florida Competitive Carriers Association ("FCCA") witness Gillan surmises that the Eighth Circuit may have held that the 1996 Act requires a *short-run* forward-looking cost methodology, which, because it would make no allowance for capital investment, would call for sharply lower element prices. Gillan, Tr. Vol. 14 at 2103-05. But the Eighth Circuit nowhere said this and, in fact, left undisturbed that part of FCC Rule 51.505(b), immediately preceding Rule 51.505(b)(1), that sets forth the long-run component of the FCC's pricing methodology.

Likewise, Mr. Gillan and witness Murray erroneously suggest that the Eighth Circuit's decision requires the exclusion of shared and common costs in establishing rates for unbundled network elements. Gillan Tr. Vol. 14 at 2104; Murray Tr. Vol. 16 at 2483-84. Again, that is not what the Eighth Circuit said, and the court's decision does not affect FCC Rule 51.505(c), which requires that a "reasonable allocation of forward-looking common costs" be included in unbundled network element prices. The requirement to include shared and common costs is also embodied in FCC Rules 51.503(b) and 51.505(a), neither of which was vacated by the Eighth Circuit.

Importantly, the Eighth Circuit's decision does not affect that requirement that rates for unbundled network elements must be established based upon a forward-looking cost methodology. In fact, the Eighth Circuit agreed with the FCC that a forward-looking, as

opposed to a historical or embedded cost approach was appropriate. *See Iowa Utilities Bd. v. FCC*, 219 F.3d at 752 ("We reiterate that a forward-looking cost calculation methodology that is based on the incremental costs that an ILEC actually incurs or will incur in providing the interconnect to its network or the unbundled access to its specific network elements requested by a competitor will produce rates that comply with the statutory requirement of § 252(d)(1) that an ILEC recover its 'cost' of providing the shared items").

However, TELRIC, as defined by the FCC, is not just any forward-looking cost methodology; it is a peculiar utterly unrealistic variant. At any given time, the "hypothetical" network assumption underlying the FCC's TELRIC methodology would allow ILECs to recover only the costs that would be incurred by a network that, save for its wire-center locations, is optimally efficient in all respects. The basic problem with this approach is that no carrier – whether ILEC or ALEC – could possibly have a network that is optimally efficient at all times because carriers cannot feasibly change their network every time new technology becomes available or demand conditions change. Varner, Tr. Vol. 7 at 1105-07.

Furthermore, because costs in the telecommunications industry (like the computer industry) are constantly declining due to rapid technological changes, the cost of the latest technology is inevitably lower than that of older technology. Obviously, a hypothetical network that employs optimal network architecture, sizing, and operating decisions is cheaper than an actual network not answering that description. In short, while a forward-looking cost methodology may result in prices that would be expected to prevail in a competitive market, the FCC's TELRIC methodology would result in prices well below that level. *Id.* at 1104-05.

Issue 1(b): Based on the current state of the law set forth in Issue A, what is the Commission's authority to establish rates for unbundled network elements at this time?

The Commission has the authority, and, in fact, is statutorily required to establish "just and reasonable" rates for unbundled network elements and interconnection services. 47 U.S.C. § 252(d). Furthermore, as a result of the Eighth Circuit's stay, all of the FCC's pricing rules, including Rule 51.505(b)(1), remain in effect and are binding upon this Commission. BellSouth's proposed rates are consistent with those rules in that they equal the sum of (1) TELRIC (based on the "hypothetical" network requirement), plus (2) a reasonable allocation of forward-looking shared and common costs. Varner, Tr. Vol. 7 16 1103-04.

The rates BellSouth has proposed are below the level the Eighth Circuit held was appropriate. However, BellSouth is willing to have the Commission establish unbundled network element rates at the level proposed by BellSouth, although, once the dust finally settles, it may be necessary for the Commission to revisit those rates. In the meantime, the Commission should reject changes to BellSouth's inputs or operation of the model that only serve to drive prices further below the level that the Eighth Circuit held was appropriate. *Id.* at 1104-05.

Issue 2(a): What is the appropriate methodology to deaverage UNEs and what is the appropriate rate structure for deaveraged UNEs?

*** The Commission should utilize existing local exchange rate groups to define three rate zones for deaveraging purposes as proposed by BellSouth. This methodology would ensure consistency between the structure of existing retail rates, resale, and prices for unbundled network elements and would reduce the opportunity for arbitrage. ***

The FCC's rules require state commissions to establish different rates for unbundled network elements in at least three cost-related rate zones within the state to reflect geographic cost differences. 47 C.F.R. § 51.507(f). However, the rules give state commissions

considerable latitude in determining how deaveraging should be accomplished. For example, the FCC's rules permit state commissions to use existing density-related zone pricing plans for special access and switched transport "or other such cost-related zone plans established pursuant to state law." 47 C.F.R. § 51.507(f)(1). Alternatively, the state commission must create a minimum of three "cost-related rate zones." 47 C.F.R. § 51.507(f)(2).

BellSouth proposes deaveraging in three geographic areas utilizing existing BellSouth rate groups. BellSouth developed the three zones by partitioning the wire centers in Florida into rate groups based upon BellSouth's General Subscriber Tariff. Next, the rate groups were classified into one of three zone designations. Average monthly costs were then calculated in each zone by weighting the wire-center level costs produced by the BSTLM by wire center line counts. Caldwell, Tr. Vol. 1 at 113.

Under BellSouth's approach, customers who are located in the same geographic area and who have similar calling areas would be in the same deaveraged zone for unbundled network element pricing. Utilizing existing rate groups as the basis for establishing the three cost-related rate zones results in consistent prices for customers within the same geographic markets. Varner, Tr. Vol. 1 at 47-48.

Defining the three geographic zones by rate groups also provides consistency between the structure of BellSouth's retail services, resale and unbundled network element prices. The need for such consistency should be obvious, since ALECs use unbundled network elements to compete with services offered at retail by BellSouth. However, unlike prices for unbundled network elements, BellSouth's rates for basic service were established in an inverse relationship to cost in order to ensure affordable local service for all urban and rural customers. As a result, deaveraging of unbundled network elements will result in rates that vary in the opposite direction

from the prices for BellSouth's retail services. Deaveraging utilizing existing rate groups would ameliorate this problem to some extent. *Id.* at 44-48.[2]

There is no merit to the argument that utilizing the geographic boundaries of existing rate groups to deaverage unbundled network element prices would violate the FCC's rules. Darnell, Tr. Vol. 15 at 2327; Sichter, Tr. Vol. 19 at 3109-10. FCC Rule 51.507(f)(1) specifically grants state commissions the ability to establish geographically deaveraged prices using "existing density-related zone pricing plans described in § 69.123 [Special Access and Switched Transport] of this chapter, or *other such cost-related zone plans established pursuant to state law.*" (emphasis added). Clearly, the FCC agreed that geographic zones that exist for retail services are a proper basis for establishing deaveraged unbundled network element rates.

The fact that retail rates were established using a rate group structure does not "create non-cost based deaveraged UNE rates" in violation of FCC Rule 51.505(d), as MCI witness Darnell contends. Darnell, Tr. Vol. 15 at 2327-29. BellSouth used the existing rate groups to establish the zones to which the deaveraged unbundled network element rates apply. Contrary to Mr. Darnell's contention, BellSouth's proposed deaveraging methodology does not include any costs associated with offering retail telecommunications services, nor are BellSouth's retail service rates or revenues included in any of the cost development to establish deaveraged prices. Varner, Tr. Vol. 7 at 1120-1121.

[2] Of course, the real solution to the problem is retail rate rebalancing and the establishment of a universal service fund. This is important because deaveraging loop prices results in lower rates in the urban area where retail prices are currently the highest. In rural areas, the reverse would be true. However, in rural area, deaveraged loop prices set high enough to cover costs would be irrelevant because the ALEC could simply resell the low-priced retail service to rural customers. As a result, deaveraging without concomitant rate rebalancing or creation of a state universal service fund would simply create another opportunity for ALECs to engage in pricing arbitrage. Varner, Tr. Vol. 1 at 45-46. However, since neither universal support nor rate rebalancing is being addressed in this proceeding, the Commission's goal at this time must be to establish deaveraged rates for unbundled network elements that will promote local competition, given the existing retail rate structure and levels.

Instead of using existing rate groups, AT&T, MCI, and Sprint urge the Commission to establish geographically deaveraged rates based solely upon wire center costs. For example, Sprint proposes that there be no more than a 20% difference between the rate for a particular zone and the forward-looking cost of any wire center included in that zone. Sichter, Tr. Vol. 19 at 3099. However, Sprint's approach is completely arbitrary, and, as Sprint witness Sichter conceded, its proposed 20% factor is based solely upon Sprint's subjective "judgment" as opposed to any quantifiable data. Exhibit 107 (Deposition of James Sichter) at 12.

Deaveraging based solely upon wire center costs also would lead to absurd results. For example, in its February 22, 2000 Order establishing interim deaveraged rates, the Commission established three deaveraged rate zones based on wire center costs, with interim rates for an unbundled 2-wire voice grade analog loop in zone 1 of $13.75, zone 2 of $20.13 and zone 3 of $44.40. Order No. PSC-00-0380-TP, Docket No. 990649-TP. Under the Order, two wire centers located in Sebastain, Florida are assigned to two different deaveraged pricing zones. The loops served by the Sebastain Main wire center are priced at zone 2 rates ($20.13) while the loops served by the neighboring Sebastain Fellsmere wire center are priced at zone 3 rates ($44.40). As such, ALECs choosing to serve end users in Sebastain would most likely charge rates that could vary by over $20 per month. Such inconsistency is less likely to occur when deaveraged pricing zones are established based on rate groups. Varner, Tr. Vol. 1 at 49.

In addition to the dispute about whether rates should be deaveraged based upon existing rate groups or wire center costs, the parties also disagree about the number of zones that should be used for deaveraging purposes. BellSouth proposes establishing three zones, while AT&T and MCI advocate six zones, and Sprint, not to be outdone, urges the establishment of eight zones. Darnell, Tr. Vol. 15 at 2329-31; Sichter, Tr. Vol. 19 at 3110-11. Deaveraging based upon more

than three zones would only decrease the likelihood that customers in high cost zones will enjoy competitive alternatives and would provide a windfall to ALECs serving customers in the lowest cost zones, which explains the impetus for AT&T's, MCI's, and Sprint's proposals.

Reducing prices for unbundled network elements in the lowest cost zones does not translate into increased competition or lower consumer prices in those areas. ALECs that have already successfully targeted business customers in the lowest cost zones have done so at the state-wide average loop rates. Deaveraging those rates will only provide additional margin for ALECs in the lowest cost zones. Varner, Tr. Vol. 7 at 1123-24.

In the higher cost zones, where ALECs generally have chosen not to compete, increasing the price of unbundled network elements in those zones certainly will do nothing to promote competition. If ALECs are not currently competing in high cost areas by purchasing unbundled network elements at the state-wide average price, a higher deaveraged price certainly will do nothing to increase the likelihood of their competing in those same high cost areas. *Id.*

BellSouth's deaveraging proposal for a 2-wire analog voice grade loop – Service Level 1 ("SL-1") would result in over 60% of the loops being priced at $16.17, and no loop priced higher than $25.56. Conversely, Sprint's proposal results in only 23% of loops being priced below $17.77, and many loops priced between $32.51 and $115.81. *Id.* at 1124. As Mr. Sichter conceded, there are not many ALECs "willing to buy a loop for $115.81." Exhibit 107 (Deposition of James Sichter) at 14.[3]

[3] AT&T and MCI claim their deaveraging proposal is based on Sprint's deaveraging methodology. Darnell, Tr. Vol. 15 at 2331. However, Exhibit 131, which purports to set forth AT&T and MCI's deaveraging proposal, does not produce rates consistent with Sprint's methodology. Varner, Tr. Vol. 7 at 1124. Even putting aside the valdity of the adjustments to BellSouth's cost studies advocated by AT&T and MCI, their minimum and maximum wire center costs do not correspond to the cost for any wire center as shown on pages 2 through 9 of Exhibit 131, the same wire center is placed in two different zones, and AT&T and MCI's proposed average cost for Zone 6 is an amalgamation that does not result in a price limited to the 20% cost difference they ostensibly believe is appropriate. *Id.* at 1125. Such deficiencies are fatal to AT&T and MCI's deaveraging proposal.

In short, BellSouth's geographic deaveraging proposal is consistent with the FCC's rules and would promote local competition, given existing retail rate structure and levels. The same cannot be said about AT&T's, MCI's, and Sprint's deaveraging proposals.

Issue 2(b): For which of the following UNEs should the Commission set deaveraged rates?

(1) loops (all);
(2) local switching;
(3) interoffice transport (dedicated and shared);
(4) other (including combinations).

*** Recurring costs of loops and local channels below the DS3 level (including sub-loops and combinations involving these elements) should be deaveraged. These are the only elements that display a significant level of cost variation by geographic location and do not have price structures that already account for geographic cost differences. ***

This is one issue upon which most of the parties agree. With the exception of Sprint, the parties submitting deaveraged pricing proposals agree that only the recurring cost of unbundled loops and local channels below the DS3 level (including sub-loops and combinations involving these elements) should be geographically deaveraged. Caldwell, Tr. Vol. 8 at 1244; King, Tr. Vol. 15 at 2393-94. As BellSouth witness Caldwell explained, these are the only unbundled network elements that possess attributes reflecting geographic cost differences and that do not have price structures which already account for geographic cost differences. Caldwell, Tr. Vol. 8 at 1167.

The Commission should reject Sprint's contention that the cost of local switching and interoffice transport be geographically deaveraged as well. With respect to switching, the cost of local switching does not vary significantly by geographic location. None of the factors that cause loop costs to vary by geographic location – such as physical characteristics and placement

costs due to cable type (aerial, buried or underground) and distance (length) – is present with respect to switching. Similarly, customer density, which also influences loop costs, has little impact on switching costs since the modularity of digital switching equipment allows BellSouth to grow switches as demand dictates. *Id.* at 1167-1168.

With respect to interoffice transport, the per-mile rate structure accounts for geographic differences by eliminating length from the equation. While some of the physical attributes of the interoffice route will impact the costs just as they do in the loop, *e.g.*, the type of placement, these differences are negligible because the cost is expressed on a per unit (mile) basis. Thus, there is no reason to deaverage interoffice transport costs. *Id.* at 1168.

While both local switching and interoffice transport *may* display cost differences at the wire center level, wire center level costs are not the only factors to consider. There are a host of practical problems associated with deaveraging the cost of local switching and interoffice transport, none of which Sprint bothers to address. For example, unlike the loop, one cannot logically isolate local switching and interoffice from the network as a whole. Because the switch is a part of a total integrated network designed to handle a call from the originating switch entity to the terminating switch entity, it is difficult if not impossible to segment individual switches based on individual cost differences. This is particularly true for remote switches that are dependent on a host switch for interoffice call processing. *Id.* at 1245.

The same problem exists for interoffice transport. With interoffice transport, one end of the circuit (A) may be in an urban area and the other end (B) in a rural area. The question then becomes: which end of the circuit should be considered the cost driver, A or B? Both A and B terminations must be considered since the traffic load riding the circuit is determined by both ends, not just one. *Id.* at 1245-1246.

Another issue, totally ignored by Sprint, is the question of deaveraging combinations when components that comprise the combination fall into different zones. For example, consider a loop and port combination. If this Commission rules that the loop cost should determine the zone to which the cost of the combination should be assigned, then potentially two ports (if ports are deaveraged) that reside in the same switch, one unbundled and one in combination, would be rated differently. The same problem exists for combinations involving loops and interoffice transport by which a dedicated interoffice DS1 circuit could have one rate when sold alone and a different when sold in combination. Such an arrangement makes no sense and would be nearly impossible to administer. *Id.* at 1246.

There is yet another compelling reason why Sprint's deaveraging proposal should be rejected. As Sprint's own witness Sichter readily admitted, Sprint did not provide this Commission with the information necessary to geographically deaverage prices for local switching and unbundled transport, even if the Commission was otherwise inclined to do so:

> Q. I guess my question is simply this: Would you agree with me that Sprint has not provided the commission with the requisite data which the commission would need in order to adopt Sprint's proposal to deaverage the costs of transport and switching?
>
> A. No, we have not, because we cannot. We don't have that data. You have that data.

Exhibit 107 (Deposition of James Sichter) at 26.[4]

[4] Although Mr. Sichter attempted to blame BellSouth for Sprint's failure to provide the requisite information needed to formulate a pricing proposal for deaveraging the cost of local switching and interoffice transport, Mr. Sichter admitted that Sprint never requested such information from BellSouth. Exhibit 107 (Deposition of James Sichter) at 24-25. Furthermore, according to Mr. Sichter, of the eighteen states in which Sprint operates as an ILEC, only one state – Nevada – has adopted Sprint's proposal to deaverage the cost of local switching and interoffice transport. Exhibit 107 (Deposition of James Sichter) at 29-31.

In determining which unbundled network elements should be geographically deaveraged, the Commission should consider cost results as well as logic. Taking both into account should cause the Commission to conclude that only the recurring cost of unbundled loops and local channels below the DS3 level (including sub-loops and combinations involving these elements) should be deaveraged, which is the position espoused by BellSouth and most of the other parties to this proceeding.

Issue 3(a): What are xDSL capable loops?

*** The following are xDSL loops offered by BellSouth: the HDSL-compatible loop, the ADSL-compatible loop, the UCL Long and Short, the ISDN capable loop, and the UDC capable loop. Other loops may be ordered from BellSouth that may or may not support the xDSL technology that the carrier seeks to deploy. ***

BellSouth offers a number of loops capable of supporting xDSL services and for which the Commission should establish recurring and nonrecurring rates. These xDSL loops include:

> High Bit-Rate Digital Subscriber Line (HDSL) Compatible Loop: The 2- and 4-wire copper loops are best suited for HDSL services. The technical characteristics of a loop are screened to ensure that the loop meets stringent industry standards for Carrier Serving Area ("CSA") transmission specifications to support HDSL services. The strict requirements for these loops mean that the end user must be served by a non-loaded copper pair, and the loop typically cannot be more than 12,000 feet long on 24 gauge copper wire. If 26 gauge copper wire is used, the limit is 9,000 feet or less. In either case, the loop may have up to 2,500 feet of bridged tap with no single bridged tap exceeding 2,000 feet.
>
> Asymmetrical Digital Subscriber Line (ADSL) Compatible Loop: This 2-wire copper loop is provisioned according to the Revised Resistance Design ("RRD") industry standards which means they may be up to 18,000 feet long and may have up to 6,000 feet of bridged tap which is inclusive of the loop length. This means that for every foot of bridged tap, the loop length is reduced by an equal amount. Therefore, an RRD loop that has 4,000 feet of bridged tap could be no longer than 14,000 feet.

> Unbundled Copper Loop (UCL) – These 2- and 4-wire copper loops are segmented between loops less than 18,000 feet ("UCL-Short") and loops greater than 18,000 feet ("UCL-Long"). The UCLs are commonly referred to as "dry copper" loops because they have no intervening equipment such as, load coils, bridged tap, repeaters, etc., between the end user premises and the serving wire center. The UCL-Short will be designed to Resistance Design on a non-loaded metallic facility up to 18,000 feet in length. The UCL-Long will be any copper loop longer than 18,000 feet in length. BellSouth does not guarantee the transmission quality beyond the resistance design standards.

Milner, Tr. Vol. 2 at 228-30; Caldwell Tr. Vol. 1 at 114; Latham, Tr. Vol. 13 at 1847-48.

BellSouth also offers other loops that may be used to support xDSL service. In particular, BellSouth offers its Integrated Services Digital Network ("ISDN")-capable loop and its Universal Digital Channel ("UDC")-capable loop, both of which may support the xDSL service known as Integrated Digital Subscriber Line ("IDSL"). BellSouth provisions its ISDN-capable loops according to applicable industry standards which means they may be provisioned over copper or via a Digital Loop Carrier ("DLC") system. These loops are also free of any load coils but are not referred to as "clean copper loops" because they may be provisioned via DLC systems which are compatible with ISDN service. The UDC is identical to the ISDN loop, except that it is provisioned uniquely to support IDSL service. Latham, Tr. Vol. 13 at 1848; Murray, Tr. Vol. 17 at 2625.

Not each loop type offered by BellSouth will support every ALEC's various xDSL offerings, since each xDSL service is highly dependent upon the equipment being used. For example, one vendor's DSLAM may operate on an 18 kft loop with minimal bridged tap, while another's may not. This is one reason BellSouth offers a number of different loop types so that each ALEC can decide for itself which particular loop type to use to support its particular xDSL service. Latham, Tr. Vol. 13 at 1849.

The types of xDSL loops offered by BellSouth, some of which have been around for some time, are capable of supporting all current xDSL technologies in use. Latham, Tr. Vol. 13 at 1849. For example, BellSouth has previously submitted costs for ADSL and HDSL compatible loops, and this Commission established rates based upon BellSouth's proposal. *See* Order No. PSC-98-0604-FOF-TP, *In re: Petition by Metropolitan Fiber Systems of Florida, Inc. for Arbitration with BellSouth Telecommunications, Inc., et al.*, Docket Nos. 960833-TP, 960846-TP, 960916-TP (April 29, 1998) ("*April 1998 Order*"). Thus, for this Commission to establish rates in this proceeding for these same types of xDSL loops would be neither new nor controversial.

Other loop types are of a more recent vintage and were developed by BellSouth in response to ALEC requests. For example, while the UCL has been available to ALECs since the second quarter of 1999, BellSouth more recently developed the UCL – Long in response to a request by at least one ALEC for the ability to obtain an unbundled copper loop that was unlimited in length. Caldwell, Tr, Vol. 1 at 114; Latham, Tr. Vol. 13 at 1850. As BellSouth witness Latham confirmed, BellSouth also is prepared to develop additional types of xDSL loops as technology or ALEC needs dictate. Latham, Tr. Vol. 13 at 1850 & 1886.

All of the xDSL loops offered by BellSouth are "designed." This means that BellSouth identifies the physical characteristics of each xDSL loop and documents those characteristics on a Design Layout Record ("DLR"), which is provided to the ALEC so the ALEC can be assured that the loop meets specified design parameters. Greer, Tr. Vol. 11 at 1708; Latham, Tr. Vol. 13 at 1870. A "designed" loop also comes with test points, which allows BellSouth to conduct certain tests in the event a trouble is reported on the line. Latham, Tr. Vol. 13 at 1872-73.

Rhythms Links, Inc. ("Rhythms"), BlueStar Networks, Inc. ("BlueStar"), and DIECA Communications, Inc. d/b/a Covad Communications Company ("Covad) (collectively referred to as "Data LECs") contend that there is no need for xDSL loops to be designed, arguing that BellSouth imposes on ALECs "the 'design' of DSL-based serves" in order to raise ALECs' costs unnecessarily. Murray, Tr. Vol. 16 at 2529. This argument is misguided. First, a DLR, which is the end result of the design process, was "highly demanded" by ALECs when BellSouth first began developing unbundled loops. Latham, Tr. Vol. 13 at 1872-1873. As Mr. Latham explained, "... the vast majority of the ALECs that we negotiated unbundled loop contracts with did desire a design layout record as part of the provisioning process so that they could understand or know the characteristics of the loop type we handed to them." *Id.*[5]

Second, the first time BellSouth learned that at least some ALECs apparently want BellSouth to develop a nondesigned xDSL loop was in reading the testimony filed in this proceeding. Latham, Tr. Vol. 13 at 1864. As Mr. Latham testified:

> Q And yet you are not willing to offer an xDSL loop as a nondesigned product, is that correct?
>
> A. No, that is not correct. We have said all along that we are willing to negotiate. To the extent that it is technically feasible, we are willing to negotiate any loop that [an ALEC] would come to us and request through the negotiation phase of their interconnection agreement.
>
> Q. So then it is your position that no ALEC has approached you to negotiate that?
>
> A. I can't recall any ALEC approaching us about developing a nondesigned xDSL loop, no.

[5] The fact that ALECs can now obtain loop make up information as part of the preordering process does not obviate the need for a DLR. As Mr. Latham explained, because the DLR is done as the loop is being deployed or provisioned, it "syncs up with the loop makeup information that [the ALECs] see on the front end, ... affirming that what they asked for is actually what they got." Latham, Tr. Vol. 13 at 1874-75.

Latham, Tr. Vol. 13 at 1877. The issue of developing new loop types should be considered in the context of the negotiations (and, if necessary, the arbitration of) an interconnection agreement, and not in the context of this cost proceeding. Indeed, even if the Commission were inclined to address this issue, there is no record evidence upon which the Commission could do so, since BellSouth would have to develop "different assumptions for costing purposes" in studying a nondesigned xDSL loop." *Id.*[6]

Issue 3(b): Should a cost study for xDSL-capable loops make distinctions based on loop length and/or the particular DSL technology to be deployed?

*** Because the cost of provisioning xDSL capable loops is a function of both the loop length and the particular xDSL technology to be deployed, it is appropriate for a cost study for xDSL capable loops to recognize these factors in developing costs. ***

There can be no serious dispute that loop length and the particular DSL technology involved affect the cost of an xDSL loop. Milner Tr. 2 at 231-32. Even the FCC has recognized as much: "[p]rovision of xDSL service is subject to a variety of important technical constraints. One is the length of the subscriber loop: ADSL, the most widely deployed xDSL-based service, generally requires loops of less than 18,000 feet using current technology. Another is the quality of the loop, which must be free of excessive bridged taps, loading coils, and other devices commonly used to aid in the provision of analog voice and data transmission, but which interfere with the provision of xDSL services. 'Conditioning' loops to remove those impediments, or constructing fiber-based digital loop carrier systems to overcome loop length difficulties, can be

[6] There is ample record evidence that BellSouth has acted in good faith in continuing to modify its unbundled loop offerings in order to meet the needs of the ALEC community. For example, designed loops generally include a coordinated conversion, which allows the ALEC to coordinate the cutover activities when a customer switches service from BellSouth to the ALEC. Because a UCL typically is ordered as an additional line rather than as a replacement, BellSouth excluded coordinated conversion from the cost of the UCL, allowing the ALEC to order it as an optional service instead. Latham, Tr. Vol. 13 at 1887.

expensive." *See* Third Report and Order, *In re: Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket No, 98-147, ¶ 8, n.9 (Dec. 9, 1999) ("*Advanced Services Order*").

Taking loop length into account in developing costs is not a "pricing scheme," as Ms. Murray alleges. Murray, Tr. Vol. 16 at 2495. Rather, it is a reflection of the physical make-up of the loop, since the cost of copper loops increases almost linearly with length. For example, based on information from the BSTLM, for the 2-wire UCL-Short, the average length is 10,139 feet and the forward-looking cost is $18.06. By contrast, for the 2-wire UCL-Long, the average length is 42,844 feet and the forward-looking cost is $53.24. This same relationship is evidenced in the average length and cost of the 4-wire UCL. Caldwell, Tr. Vol. 8 at 1223. Since the cost of xDSL loops is a function of loop length (as well as the particular technology to be deployed), it is appropriate for a cost study to take such considerations into account in developing forward-looking costs.

There is no merit to the Data LECs' argument that a "loop is a loop" and that BellSouth should only offer a single SL-1 loop that ALECs can use to support their xDSL services. Murray, Tr. Vol. 16 at 2533. An SL-1 loop is a 2-wire basic voice grade loop intended to support Plain Old Telephone Service ("POTS") that may be provisioned using any voice grade technology, whether that be copper, fiber, or DLC systems. By contrast, xDSL loops such as HDSL and ADSL-compatible loops are intended to support the transmission of higher frequency signals used in xDSL technologies. In many instances, electronic equipment, such as a DLC used to provide an SL-1 loop, will not pass the higher frequency xDSL signals. Latham, Tr. Vol. 13 at 1851. The xDSL loops offered by BellSouth are designed to meet certain design

requirements necessary to provide xDSL service; the same cannot be said about an SL-1 loop. Latham, Tr. Vol. 13 at 1853-54.

Of course, rather than purchasing one of BellSouth's xDSL loops, the Data LECs always have the option to purchase an SL-1 loop to support their xDSL service. However, the xDSL service may or may not work, depending upon the type of loop facilities used to provide the SL-1 loop. Latham, Tr. Vol. 13 at 1852. Furthermore, BellSouth will only maintain and repair the loop to the standards to which it was ordered. As a result, if an ALEC orders an SL-1 loop, BellSouth will maintain and repair it as an SL-1 loop. By contrast, if an ALEC orders an ADSL-compatible loop, BellSouth will maintain and repair it as an ADSL-compatible loop. Latham, Tr. Vol. 13 at 1884.

While the Data LECs may be reluctant to admit it, there are very real differences between an SL-1 loop and an xDSL loop. For example, an ALEC can provide voice grade service over an SL-1 loop that is unlimited in length, whereas loop length "can affect the type of [xDSL] service and speed of service that could be offered." Murray, Tr. Vol. 17 at 2631. Similarly, an ALEC can provide voice grade service over an SL-1 loop that contains bridged tap, load coils, and DLC, whereas these same facilities would disrupt xDSL service. *Id.* at 2631-33.

The differences between an SL-1 and an xDSL loops become particularly acute when the loop is provisioned using DLC. The FCC has gone so far as to conclude that an ALEC is "precluded" from offering xDSL service to customers served by DLC "unless the competitor can gain access to the customer's copper loop before the traffic on that loop is multiplexed." Third Report and Order, *In re: Implementation of the Local Competition Provisions of the Telecomunications Act of the 1996*, CC Docket No. 96-98, ¶ 218 (Nov. 5, 1999) ("*Third Report and Order*"). Because of the technical difficulties associated with deploying xDSL services on a

DLC-served loop, Rhythms, one of Ms. Murray's clients, has asked the FCC to adopt a rule allowing ALECs to opt for copper loops instead of an DLC-provisioned loop. Exhibit 143. Indeed, Sprint will not order an SL-1 loop to support an xDSL service "because an SL-1 may be provisioned over digital loop carrier system and most xDSL services will not currently work through a DLC." Murray, Tr. Vol. 17 at 2643.

The Data LECs' theory that a "loop is a loop" is inconsistent with Ms. Murray's position that the Commission adopt a rule that when an ALEC purchases an SL-1 loop "BellSouth be precluded from making changes to the facilities that are being used to provision the loop ...." Murray, Tr. Vol. 17 at 2637. Such a rule would be completely unnecessary if a "loop is a loop." For example, assume a BellSouth customer is being provided POTS service over an SL-1 loop from the customer's premises to the central office. The customer switches service to Covad, which purchases the unbundled SL-1 loop from BellSouth. One year later, as part of routine upgrades to its network, BellSouth installs a DLC system that will be used to serve Covad's end user. If Covad were using the SL-1 loop to provide voice service to the end user, this network change would have no affect on the end user, whereas that would not be the case if Covad were using the SL-1 loop to provide xDSL service.

The Data LECs propose that the Commission create a new xDSL loop that is priced the same as an SL-1 loop. Murray, Tr. Vol. 17 at 2644. This would mean that the cost of this new xDSL loop would reflect the savings associated with DLC, even though the Data LECs would never actually order a DLC-served loop to provide xDSL service. Instead, they could use loop make up information to identify and order a copper loop not served by DLC. Murray, Tr. Vol. 17 at 2647-49. As a result, the Data LECs would get a plain copper loop at a price that does not reflect the true cost of that loop. The Commission should not condone such a charade.

Issue 4(a): Which subloop elements, if any, should be unbundled in this proceeding, and how should prices be set?

*** BellSouth should be required to unbundle subloop elements consistent with the FCC's *Third Report and Order*. Prices for unbundled subloop elements should be established using the same cost methodology used for other unbundled network elements. ***

The FCC has defined the subloop network element as any portion of the loop that is technically feasible to access at terminals in the ILEC's outside plant. *Third Report and Order*, ¶ 206. Consistent with the FCC's rules, BellSouth makes available and has developed costs for the following unbundled subloop elements:

> Network Interface Device ("NID") - The NID provides a single line termination device or that portion of a multiple line termination device required to terminate a single line or circuit. The NID, located on the customer's premises, establishes the official network demarcation point between a telecommunications company and its end user customer. BellSouth provides access to the NID on an unbundled basis, therefore, an ALEC may order a stand alone NID from BellSouth. However, when an ALEC orders an unbundled loop, BellSouth provides the NID also. In all cases where BellSouth provisions a loop, it must be properly grounded.
>
> Sub-Loop Feeder ("USL-F") - Sub-loop feeder is the physical transmission facility (or channel or group of channels on such facility) which extends from the main distributing frame connection in the end office to a remote terminal ("RT) or cross-connect box. Sometimes, loop feeder has been referred to as "the first mile" of the loop in that it is the first section of cable leaving the BellSouth central office headed towards a customer's premises. In many cases BellSouth deploys a multiple circuit copper cable (for example, a 1,200 pair cable) from its central office to the RT or cross-connect box located somewhere between the central office and the end user customer's location. Each pair within this cable can be used to carry a single voice conversation. The copper pairs of the loop feeder are then individually cross-connected to pairs in smaller cables called loop distribution. The loop distribution cables are attached to the loop feeder cables and serve all the houses or businesses in a sub-section of one of the central office's serving areas. If the loop is served by digital loop carrier, a central office digital loop carrier terminal is required to convert the digital signal to voice grade analog. A test point is provisioned with the sub-loop feeder for remote test access. USL-F is also provided for the DS1 digital loop.

Sub-Loop Distribution ("USL-D") - Sub-loop distribution is the physical transmission facility from a BellSouth cross-connect device to the NID at the customer's premises. This facility will allow an end user to send and receive telecommunications traffic when it is properly connected to other required network elements, such as, loop feeder facility. Loop distribution facilities have been referred to as the "last mile" because these are the facilities that go the "last mile" to the customer's premises. The loop distribution cables are used to, in effect, "fan out" the availability of the cable pairs and/or transmission channels, if electronic digital loop carrier equipment is used, from the loop feeder cables. Between the loop feeder cable and the loop distribution cable is a cabinet, above ground "hut", or below ground "controlled environment vault" within which cross-connections and/or electronics are located. This facility includes a NID (where applicable) at the customer's location in the loop.

Intra-building Network Cable ("INC") - INC (also known as riser cable) is the distribution facility inside a subscriber's building or between buildings on one customer's premises (continuous property not separated by a public street or road). INC (riser cable) will include the facility from the cross-connect device in the building equipment room up to and including the end-user's point of demarcation. Although INC may in some cases connect directly to the NID, typically it connects to Network Terminating Wire in a wiring closet prior to final termination at the end user's NID.

Network Terminating Wire ("NTW") - NTW is unshielded twisted copper wiring that is used to extend circuits from an INC terminal or from a building entrance terminal to an individual customer's point of demarcation. It is the last segment of the field-side loop distribution facilities. In multi-subscriber configurations, NTW represents the point at which the network branches out to serve individual subscribers.[7]

Unbundled Subloop Concentration ("USLC") – USLC allows an ALEC to concentrate loop distribution elements, provided by the ALEC, on to multiple DS1s. This arrangement allows the ALEC to connect the loop distribution elements (at a concentrated level) to BellSouth's feeder facilities. BellSouth will then transport the DS1s carrying the distribution circuits back to the serving wire center for termination on a BellSouth DSX1 block and ultimately to the ALEC's collocation space.

[7] NTW will be provided in Multi-Dwelling Units ("MDUs") and/or Multi-Tenants Units ("MTUs") where BellSouth provides wiring all the way to the end-users premises. BellSouth will not provide this element in those locations where the property owner provides the wiring to the end user's premises or where the property owner will not allow BellSouth to place its facilities to the end user. Caldwell, Tr. Vol. 1 at 116. NTW may be used alone or in conjunction with INC. In garden apartments, there is no INC and, thus, the NTW connects directly to BellSouth's loop distribution facilities. Conversely, in multi-story buildings, NTW is connected to the INC at cross-connect terminals usually on each floor of the building and "fans out" the cable pairs to individual customer suites or rooms on each floor. NTW can be purchased from BellSouth as a separate unbundled sub-loop offering, or as a component of unbundled INC. Milner, Tr. Vol. 13 at 1959.

Varner, Tr. Vol. 1 at 53-55; Caldwell, Tr. Vol. 1 at 115-17; Milner, Tr. Vol. 2 at 233-38.

The Commission should decline any invitation to expand the list of subloop elements BellSouth is required to provide. First, the subloop elements BellSouth currently provides are consistent with the sub-loop unbundling requirements set forth in the FCC's *Third Report and Order* and are more than sufficient to allow ALECs the opportunity to compete. Second, although the FCC has granted to state commissions the authority to impose additional unbundling obligations upon ILECs under the circumstances specified in FCC Rule 51.317, those circumstances have not been met here. In particular, there is no evidence in this record that access to additional subloop elements is "necessary" or that ALECs will be "impaired" in their ability to compete without access to such elements. Varner, Tr. Vol. 1 at 55-56.

The prices for unbundled subloop elements should be established using the same cost methodology used for other unbundled network elements. This is the approach followed by BellSouth in developing its proposed rates for subloop elements, which the Commission should adopt. Varner, Tr. Vol. 1 at 56; Caldwell, Tr. Vol. 1 at 115-17.[8]

[8] The prices for NTW and INC are the only subloop elements that are particularly controversial. BellSouth's proposed prices for NTW and INC are driven in large measure by the method of access to such elements, which is an issue discussed below. The recurring rate for NTW reflects two types of expenses that BellSouth has expressed on a recurring basis; network terminating wire, maintenance expense, and maintenance expense related to subscriber line testing. The nonrecurring costs reflect labor costs and the actual access terminal costs. INC recurring costs reflect the NTW components as well as the costs associated with the intra-building cable, building terminal, and distribution terminal. The capital investments were developed from an extract from the BSTLM. The nonrecurring costs reflect the labor associated with provisioning INC. Caldwell, Tr. Vol 8 at 1247. The cost of subscriber line testing is properly included in the costs of NTW and INC, notwithstanding AT&T and MCI's claim to the contrary. Subscriber line testing is a generic cost applied to all loop and subloop elements and reflects the activities required to determine the condition of plant on a routine basis, prior to assignment of facilities, during trouble reports, or corrective action. BellSouth excluded these expenses from the calculation of the plant specific factors in order to directly assign them on a per loop basis. Because the expense is spread over all loops, all loops, including subloops, should bear the cost. *Id.* at 1249.

Issue 4(b): How should access to such subloop elements be provided, and how should prices be set?

*** Access to subloop elements should be provided via an Access Terminal as approved by this Commission in Docket No. 990149-TP. The use of an Access Terminal reasonably balances the ALECs' need for access to subloop elements with the need to protect network reliability. ***

BellSouth offers access to all elements of its loop network through subloop unbundling offerings that comply with the FCC's *Third Report and Order* and is, and has been, providing subloop unbundling at technically feasible points of access. ALECs should access subloop elements – whether that be the NID, loop feeder, loop distribution, NTW, or INC in the same manner as it obtains access to any other network element -- by placing an order with BellSouth and paying a just and reasonable rate for the element. Milner, Tr. Vol. 2 at 238.

This Commission considered the issue of access to NTW in the arbitration proceeding between BellSouth and MediaOne. Order No. PSC-99-2009-FOF-TP, *In re: Petition by MediaOne Florida Telecommunications, Inc. for Arbitration on an Interconnection Agreement with BellSouth Telecommunications, Inc.*, Docket No. 990149-TP (October 14, 1999) ("*MediaOne Order*"). This Commission denied MediaOne's request for direct access to NTW and required that an Access Terminal be placed between BellSouth's network and MediaOne's network. According to the Commission, the Access Terminal gives MediaOne the access to NTW it desires without reducing network reliability and security. The underlying issue here – how should access to subloop elements be provided – is the very same issue addressed in Docket 990149-TP, and BellSouth proposes the result be the same here.

Under BellSouth's proposal, BellSouth will construct an Access Terminal between BellSouth's networks and the ALECs' networks by which ALECs can access various subloop

elements. BellSouth will pre-wire all NTW pairs to the Access Terminal. For example, in the garden apartment arrangement, this means that each cable pair available to serve customers in that garden apartment building will appear both on BellSouth's terminal and on the Access Terminal. An ALEC wanting to serve a customer in the garden apartment situation would build its terminal at that location and then wire its cable pair to the appropriate pre-wired location on the Access Terminal. By terminating such pairs on separate connecting blocks serving as an Access Terminal for the ALEC, the need for dispatches of a BellSouth technician on all such pre-wired pairs is eliminated. Milner, Tr. Vol. 2 at 246.

The treatment for INC in high-rise buildings will be different. BellSouth will still build an Access Terminal to complement BellSouth's own terminal located in the high-rise building, and the ALEC wanting to access those facilities will still have to build its own terminal for its cable pairs. When BellSouth receives an order for INC from the ALEC, BellSouth will then wire the particular INC pairs requested from BellSouth's terminal to the ALEC's access terminal. BellSouth does not propose to pre-wire each INC pair to the Access Terminal in high-rise buildings. While the garden apartment terminal might have 20 to 25 loops terminated on it, high-rise buildings may have hundreds or even thousand of pairs, which would make pre-wiring the Access Terminal impractical. Milner, Tr. Vol. 13 at 1942.

Furthermore, maintenance of INC cable records is more problematic than maintenance of NTW records because, unlike NTW records, INC cable records are mechanized records not available at the Access Terminal. Keeping accurate records of what pairs are spare, working, or defective is critical to ensuring high quality service, both in provisioning new or additional customer lines and in repairing existing customers' service. NTW records consist generally as paper tags on each pair of wires that are present at the NTW garden terminal, which allows a

technician to determine the use to which a particular pair is being put while on-site. However, because INC cable records are mechanically inventoried, individual assignments of INC pairs are made as orders for service are processed. Thus, a field technician has no way of knowing whether a specific INC pair is usable and available without risking disruption of service to existing end users. *Id.* at 1943-44.[9]

ALECs object to the use of an Access Terminal for accessing subloop elements as the Commission endorsed in Docket 990149-TP, insisting that they should have direct access to these elements instead. However, such direct access is not technically feasible because it would compromise network reliability and security. *See* 47 C.F.R. § 51.5. First, if given direct access, ALEC technicians could, intentionally or unintentionally, disrupt the service provided by BellSouth to end user customers, including both BellSouth's and ALECs' end user customers. In a commercial high-rise building involving business customers with high-speed digital data services operating 24 hours per day, the problem is even more acute. Any disturbance of a working circuit would cause irreparable harm to existing services and subject BellSouth and this Commission to numerous customer complaints. Milner, Tr. Vol. 13 at 1961-62.

Second, direct access also would place BellSouth at the ALECs' mercy to tell BellSouth how, when, where, and the amount of BellSouth's facilities that are being used, which would have a totally debilitating effect on BellSouth's ability to maintain accurate cable inventory records. With direct access every ALEC in Florida could walk into an equipment room in a high-rise building and start appropriating pairs and facilities for its own use, without any

[9] A field technician could conceivably use a test set to determine whether the INC pair is in use or select a pair at random. However, use of a test set would disrupt an in-progress transmission. In addition, utilizing INC pairs at random could result in taking an existing end user out of service, or in having the new end user's service be inoperable because of a faulty INC pair, which inevitably results in service degradation and chaotic service provisioning by all carriers. Milner, Tr. Vol. 13 at 1944.

obligation to keep appropriate records so that the next person in the room knows what belongs to whom. This lack of accurate inventory information would result in imminent failure of BellSouth's (and ALECs using subloop elements acquired from BellSouth) service provisioning, maintenance and repair processes. *Id.* at 1962-63.

This Commission has already considered and rejected the argument that ALECs should have direct access to NTW, as was proposed by MediaOne in Docket 990149-TP. As the Commission concluded:

> The record does not contain evidence of any case which would support a proposal where one party is seeking to use its own personnel to, in effect, modify the configuration of another party's network without the owning party being present. We find that MediaOne's proposal to physically separate BellSouth's NTW cross-connect facility from BellSouth's outside distribution cross-connect facilities is an unrealistic approach for meeting its objectives. Therefore, BellSouth is perfectly within its rights to not allow MediaOne technicians to modify BellSouth's network.
>
> ...Based on the evidence presented at the hearing, we believe that it is in the best interests of the parties that the physical interconnection of MediaOne's network be achieved as proposed by BellSouth.
>
> We find from the record that at least one other ALEC in Florida and an unknown number of ALECs in other states have been able to provide service based on BellSouth's NTW proposal. Thus, we believe that MediaOne should be able to provide service using BellSouth's NTW proposal...

MediaOne Order at 17.[10]

That the Commission's *MediaOne Order* was rendered before the FCC's *Third Report and Order* is irrelevant. The FCC required that incumbents provide a "single point of interconnection" ("SPOI") at multi-unit premises that is suitable for use by multiple

[10] The Florida Commission's *MediaOne Order* is consistent with a decision reached by the Georgia Public Service Commission in an arbitration also involving MediaOne. In that case, the Georgia Commission directed BellSouth to "construct a single point of interconnection that will be fully accessible and suitable for use by multiple carriers" and permitted MediaOne to obtain access to NTW by means of an Access Terminal or "access cross connect (CSX) facility." Milner, Tr. Vol 13 at 1946-47.

telecommunications carriers. *Third Report and Order* ¶ 226. The SPOI is conceptually identical to the use of an Access Terminal approved by this Commission in Docket 990149-TP, except that it is intended for use by multiple carriers rather than by a single carrier.

Nothing in the FCC's *Third Report and Order* can reasonably be read to mandate the direct access that ALECs seek here. The FCC plainly required that the ILEC "construct" a SPOI to permit access to subloop elements, which necessarily means that the SPOI required by the FCC does not presently exist. *Third Report and Order* ¶ 226. There would be no need for ILECs to construct anything, if the FCC contemplated that ALECs would simply have direct access to BellSouth's existing facilities, as AT&T and MCI contend.

Furthermore, the FCC did not alter its requirement that each carrier "retain responsibility for the management, control, and performance of its own network." *First Report and Order* ¶ 203. If direct access to subloop elements as proposed by the ALECs is permitted, BellSouth would be rendered incapable of managing and controlling its network in the provision of service to its and ALECs' end user customers. Indeed, the FCC expressly reserved to state commissions the authority to determine issues associated with network reliability and security in resolving issues concerning subloop unbundling. *Third Report and Order* ¶ 228.[11]

BellSouth has experienced firsthand the perils of direct access to subloop elements. As BellSouth witness Milner testified, "In some cases it's caused service outages of other customers. In other cases, still, it's caused due dates to be missed, because facilities that we thought were available turned out not be available." Milner, Tr. Vol. 14 at 2052. Mr. Milner also described a situation in Florida with a company that at the time was not certificated as an

[11] That SBC may permit direct access to terminals and panels in MDUs does not make such access technically feasible. As Mr. Milner explained, SBC routinely establishes the demarcation point at the Minimum Point of Entry in MDUs rather than at each individual unit. This means that the facilities at issue here – NTW and INC – are owned by the property owner, not SBC. Milner, Tr. Vol. 14 at 2062-63.

ALEC used BellSouth's facilities without BellSouth's knowledge, taking "a number of our customers out of service." Milner, Tr. Vol. 14 at 2066-67.

To be sure, the construction of an Access Terminal, which is BellSouth's proposed method for ALECs to access to unbundled subloop elements, will not eliminate the possibility that network reliability and security may be compromised. However, BellSouth's proposal "makes it more clear who's working on what part of the network and minimizes those unfortunate incidents." Milner, Tr. Vol. 14 at 2053.

These severe service risks associated with direct access are not avoided by AT&T and MCI's proposal to "indemnify" BellSouth "in principle" for any harm caused. Kahn, Tr. Vol. 15 at 2345. It would be difficult, if not impossible, for AT&T and MCI to indemnify BellSouth for all the risks to BellSouth's end users and end users of any ALECs using loops or subloops acquired from BellSouth. Indeed, while agreeing to indemnify BellSouth "in principle," AT&T and MCI are unwilling to indemnify BellSouth for any and all adverse consequences resulting from the direct access they seek. Kahn, Tr. Vol. 15 at 2381-82.

The Commission should reject proposals by Broadslate Networks, Inc., Cleartel Communications, Inc., and Florida Digital Networks (collectively referred to as "Coalition") that BellSouth bear the cost of constructing the Access Terminal. First, the ALEC, not BellSouth, has caused the cost of the Access Terminal to be incurred and should alone bear that cost. An Access Terminal is necessary to prevent intentional or unintentional service disruptions caused by ALECs' technicians and to ensure accurate record keeping and billing as a result of ALEC's access to subloop elements. BellSouth would have no reason to construct access terminals if not for the ALECs' desire to gain access to BellSouth's subloop facilities. Milner, Tr. Vol. 13 at 1948.

Second, establishing rates for subloop elements "based upon the actual facilities used by an ALEC which, in this case, would be on a per-line basis," as proposed by Mr. Stacy, would not permit BellSouth to recover its costs. Because an Access Terminal is dedicated to the requesting ALEC (consistent with the Commission's *MediaOne Order*), there is no other ALEC from which BellSouth would be able to recover its costs. *Id.* at 1958.[12]

The issue of how BellSouth should provide access to subloop elements is not new to this Commission, and no party has offered any compelling reason why the Commission should not resolve the issue in the same manner as it did in Docket 990149-TP.

Issue 5: For which signaling networks and call-related databases should rates be set?

*** Rates should be set for access to CCS7 signaling transport as well as access to the following call-related databases: 800 access, Line Information Database access; BellSouth Calling Name Database service; E911 service; Local Number Portability Query service; and Advanced Intelligent Network databases. ***

In Appendix C of its *Third Report and Order* the FCC defined ILECs' unbundling obligations with respect to Signaling Networks and Call-Related Databases. The FCC required that ILECs provide access to their Signaling Networks, which include signaling links and signaling transfer points, and to provide such access "in the same manner in which it obtains such access itself." With respect to Call-Related Databases, the FCC required ILECs "to provide access to its call-related databases, including but not limited to, the Calling Name Database [CNAM], 911 Database, E911 Database, Line Information Database [LIDB], Toll Free

[12] BellSouth is willing to permit sharing of an Access Terminal by multiple carriers if that is determined to be acceptable by this Commission. However, if the Commission were to find ALEC sharing of the Access Terminal to be acceptable, there may need to be adjustments made to BellSouth's study for the affected rate elements to reflect that fact. Milner, Tr. Vol. 13 at 1951.

Calling Database, Advanced Intelligent Network [AIN] Databases, and downstream number portability databases." 47 C.F.R. § 51.317(e)(2).

In response to these FCC mandates, BellSouth has filed cost studies for CCS7 Signaling Transport and called-related databases, including access to BellSouth's 800, LIDB, CNAM, Local Number Portability ("LNP"), and E911 databases. In its *April 1998 Order,* the Commission established rates for 800 access, LIDB access, and CCS7 Signaling Transport based upon BellSouth's cost studies for these items. In this docket, BellSouth has revised these elements to reflect the 2000-2002 study period (i.e., factors, labor rates, and material prices were updated). BellSouth also has augmented its list of database access items to include CNAM, LNP, and E911. Caldwell, Tr. Vol. 8 at 1173.

The FCC also stated in Appendix C of its *Third Report and Order* that BellSouth must "provide a requesting telecommunications carrier the same access to design, create, test, and deploy Advanced Intelligent Network-based services at the service management system [SMS]." Thus, BellSouth developed costs for Service Management System Access and AIN Toolkit. AIN Toolkit is a product designed to provide an ALEC with the ability to create and offer AIN service applications to their end users. Service applications are created in a BellSouth-provided Service Creation Environment ("SCE") using a BellSouth-provided Graphical User Interface ("GUI"). AIN SMS Access provides access to the SCE and supports administrative activities (e.g., inputting end user specific data or accessing usage reports) associated with the service applications that are created using AIN Toolkit. Caldwell, Tr. Vol. 1 at 143.[13]

[13] Z-Tel's allegation that BellSouth has "doubled counted" the cost of the AIN triggers is clearly wrong. Trigger costs associated with the end office have appropriately been captured in the vertical feature costs that BellSouth developed, since they are part of the features and functions provided by the switch. There are no trigger-related investments in the AIN SMS or AIN Toolkit. Z-Tel also erroneously alleges that BellSouth "Trigger Access Charge" is unsupportable. Work activities as outlined in the cost study are required in order to establish, route and translate the specific type of trigger required by the ALEC. The labor costs associated with these activities are reflected in BellSouth's cost studies. Caldwell, Tr. Vol. 1 at 146.

There is no merit to AT&T and MCI's argument that BellSouth's Directory Assistance ("DA") database is a "call-related database" for which the Commission should establish rates. The FCC did not identify the DA database as a call-related database, nor is the DA database "used in signaling networks for billing and collection or the transmission, routing or other provision of telecommunications service." *Third Report and Order* ¶ 403. Furthermore, the FCC exempted operator services and directory assistance from an incumbent's unbundling obligations if the incumbent provides customized routing, which BellSouth does. *Third Report and Order* ¶ 441. It is absurd to believe that the FCC would exempt DA from an incumbent's unbundling obligations while at the same time requiring the ILEC to provide unbundled access to its DA databases.

Equally without merit is Z-Tel's argument that BellSouth must develop the cost of "interfacing BellSouth switches with Z-Tel provided call-related databases or SCP." Ford, Tr. Vol. 5 at 721. The FCC rejected a similar request by Low Tech Designs that the FCC mandate the interconnection of ALEC-provided AIN Service Control Points ("SCPs"). The FCC stated: 'We decline this request because we find that there is not enough evidence in the record to make a determination as to the technical feasibility of interconnecting third-party SCPs and Intelligent Peripherals to incumbent LECs' signaling networks." *Third Report and Order* ¶ 407. Thus, BellSouth is not obligated by FCC rules to offer this interconnection.

While the FCC left open the possibility that a state commission may address the issue of whether to permit an ALEC's directly interconnection directly, this Commission has already considered and rejected an ALEC's direct interconnection with BellSouth's SCP. In its Order No. PSC-96-1579-FOF-TP issued December 31, 1996, the Commission stated that "BellSouth shall be allowed to use mediation mechanisms as necessary" when allowing access to its SS7

network. While the Commission's decision did not directly address the interconnection between an ALEC's SCP and BellSouth's SS7 network, the rationale is the same. Thus, Z-Tel must interconnect its SCP with the mediation mechanism, i.e., BellSouth's Signal Transfer Point ("STP") gateway, in order to prevent intentional and unintentional disruption of BellSouth's network either for BellSouth's end users or the end users of ALECs. Caldwell, Tr. Vol. 1 at 145.[14]

Issue 6: Under what circumstances, if any, is it appropriate to recover non-recurring costs through recurring rates?

*** While there may be circumstances when nonrecurring costs should be recovered through recurring rates, no party in this proceeding has proposed recurring rates that seek to recover nonrecurring costs. ***

In its cost studies, upon which all the parties rely to one extent or another in this proceeding, BellSouth did not convert any of its nonrecurring costs to recurring rates. Rather, the nonrecurring costs, as contained in BellSouth's cost studies, reflect the way in which the costs are incurred. In other words, if the costs result from a one-time provisioning process, BellSouth proposes to recover that cost on a nonrecurring basis. Caldwell, Tr. Vol. 8 at 1174.

The Data LECs argue that nonrecurring charges are a barrier to entry for ALECs. Murray, Tr. Vol. 16 at 2511-13. However, this argument ignores that properly structured nonrecurring charges reduce recurring prices charged to the ALEC. This is because including nonrecurring costs in recurring rates would require the addition of a cost of money component –

[14] Mediation devices are computer programs which during call processing determine the effect of routing instructions or other information returned as a result of an SCP query and then cause appropriate activities to be taken. These devices evaluate the request to determine if it is potentially harmful to BellSouth's network. BellSouth's cost studies contain all of the unbundled components necessary to interconnect Z-Tel's SCP to BellSouth's STP; the facility between the SCP and STP, the termination on the STP, and usage of BellSouth's SS7 network. Caldwell, Tr. Vol. 1 at 145.

a cost that the ALEC avoids by paying nonrecurring costs up front. Furthermore, as BellSouth witness Varner confirmed, BellSouth is willing to negotiate optional payment plans with ALECs in an attempt to mitigate the effect of nonrecurring costs. However, none of the Data LECs has ever made such a request. Varner, Tr. Vol. 1 at 67-68. Finally, while bemoaning the use of nonrecurring charges, to BellSouth's knowledge, no party, including the Data LECs, has proposed modifications to BellSouth's cost studies that would result in nonrecurring costs being recovered through recurring rates.[15]

Even if the Commission were inclined to establish recurring rates that are designed to recover nonrecurring costs, several factors must be considered. First, how long will the service be installed or remain in service? This factor is important to ensure that the nonrecurring costs can be recovered and will not be foregone if the service is removed or disconnected too soon. In a competitive environment, a provider's ability to predict how long a customer will remain on the provider's network is limited. Absent some type of volume and term agreement or termination liability, the risk of not recovering nonrecurring costs increases. Second, what is the impact that the recovery of the nonrecurring costs will have on the recurring rate? Depending on the amount of costs to be recovered, spreading the nonrecurring costs over a recurring rate could cause the recurring rate to be inappropriately high. Varner, Tr. Vol. 1 at 58. In no event should BellSouth be denied the opportunity to recover its costs, whether they are included in recurring or nonrecurring rates.

[15] Florida Cable Telecommunications Association ("FCTA") witness Barta contends that the cost to develop operational support systems ("OSS") should be recovered through recurring rates in lieu of nonrecurring charges. Barta, Tr. Vol. 20 at 3234. However, consistent with the Stipulation filed December 7, 1999, the issue of recovery of the development and the ongoing maintenance associated with providing ALECs with access to BellSouth's OSS and electronic interfaces will be addressed in a separate proceeding.

Issue 7: **What are the appropriate assumptions and inputs for the following items to be used in the forward-looking recurring UNE cost studies?**

(a) network design (including customer location assumptions);
(b) depreciation;
(c) cost of capital;
(d) tax rates;
(e) structure sharing;
(f) structure costs;
(g) fill factors;
(h) manholes;
(i) fiber cable (material and placement costs);
(j) copper cable (material and placement costs);
(k) drops;
(l) network interface devices;
(m) digital loop carrier costs;
(n) terminal costs;
(o) switching costs and associated variables;
(p) traffic data;
(q) signaling system costs;
(r) transport system costs and associated variables;
(s) loadings;
(t) expenses;
(u) common costs;
(v) other.

*** The appropriate assumptions and inputs that should be used in the development of forward-looking recurring costs are those set forth in the cost studies filed by BellSouth on August 16, 2000, and as supported by the testimony of BellSouth's witnesses. ***

BellSouth submitted extensive testimony justifying the assumptions and inputs used in its recurring cost studies. BellSouth witnesses Caldwell, Stegeman, Cunningham, Billingsley, Page, and Reid discussed these issues at length, and their testimony fully supports adoption of the recurring cost studies as filed by BellSouth on August 16, 2000.[16]

[16] A number of the assumptions and inputs at issue are not particularly controversial either because of their treatment in the cost model (*e.g.*, manholes and fill factors) or because the parties agree that BellSouth has used the appropriate inputs (*e.g.*, tax rates). As a result, BellSouth's Post-Hearing Brief will only address those assumptions and inputs that are in dispute.

While the parties uniformly agree that BellSouth's cost studies should be used in this proceeding to establish recurring rates, AT&T and MCI propose a series of adjustments to those studies that, if adopted, would significantly understate BellSouth's forward-looking costs. This is evident simply by comparing the investment generated by AT&T and MCI's adjustments with the forward-looking loop costs previously determined by this Commission. *See* Order No. PSC-99-0068-FOF-TP, *In re: Determination of the Cost of Basic Local Telecommunications Service Pursuant to Section 364.025, Florida Statutes*, Docket 980696-TP (Jan. 7, 1999) ("*January 1999 Order*").

In Docket 980696-TP, using the Benchmark Cost Proxy Model ("BCPM") with Commission-approved input values, the Commission determined that the capped annual amount of loop investment on a per line basis was $892. Exhibit 112. This compares to the annual loop investment of $852 generated by BellSouth's August 16, 2000 cost studies. Stegeman, Tr. Vol. 11 at 1555-56. By contrast, AT&T's and MCI's proposed adjustments would produce an annual loop investment of only $436. There is no credible explanation for why BellSouth's annual loop investment in this proceeding should be approximately one-half of the annual loop investment calculated by this Commission in Docket 980696-TP, and AT&T and MCI offer none. Stegeman, Tr. Vol. 11 at 1555-57.

Network Design

AT&T and MCI identify five "cost-related issues" associated with the network assumptions underlying BellSouth's cost studies, although they propose actual adjustments to address only three of these issues. None of their proposed adjustments has merit.[17]

[17] AT&T and MCI complain about the Minimum Spanning Road Tree Routing from the Digital Loop Carrier and the Land and Building Factors used in the BSTLM. Donovan & Pitkin, Tr. Vol. 14 at 2166. Although their complaints are without merit, Stegeman, Tr. Vol. 10 at 1504-08, Caldwell, Tr. Vol. 8 at 1238-39, Messrs.

First, the Commission should reject AT&T and MCI's proposed adjustment to the BSTLM to reduce drop investment by 21.7% based on the assumption "that the drop is placed at the corner of a customer's lot." Donovan and Pitkin, Tr. Vol. 14 at 2169. BellSouth modified the BSTLM to allow the user to select the method used to place the drop, whether at the corner of a customer's lot or rectilinear drops from the nearest road point of each customer location. Stegeman, Tr. Vol. 10 at 1496. Thus, there is no need for AT&T and MCI's proposed adjustment. Furthermore, their proposed 21.7% reduction was based on "one hypothetical customer location," and neither AT&T nor MCI verified its reasonableness. Pitkin, Tr. Vol. 14 at 2238-40.

Second, the Commission should reject AT&T and MCI's proposed adjustment to the DLC and SONET Vendor Mix in the BSTLM. Donovan and Pitkin, Tr. Vol. 14 at 2169. The current DLC costing approach in the BSTLM assumes the use of two DLC vendors and uses a melded cost at each DLC location, which represents the true proportion of vendor equipment installed in Florida. Stegeman, Tr. Vol. 10 at 1498-99. AT&T and MCI's proposed adjustment, by contrast, would result in the mixing of vendors on the same SONET ring, which, as Mr. Donovan conceded, cannot be done. Caldwell, Tr. Vol. 9 at 1304-10; Donovan, Tr. Vol. 14 at 2242-43. Although AT&T and MCI insist that their proposed adjustment would not mix vendors on a SONET ring, but rather would result in both vendors' equipment at each location with separate rings connecting the equipment of each vendor, this is an utterly unrealistic network assumption. Pitkin, Tr. Vol. 14 at 2245-46. As Ms. Caldwell explained:

Donovan and Pitkin do not have a solution to either of these two alleged problems in any event. Instead, they claim these issues demonstrate that the results of BellSouth's cost studies, even with AT&T and MCI's other adjustments, are "overstated" and "too high." Donovan & Pitkin, Tr. Vol. 14 at 2172. This claim is absurd, given that their adjustments would result in a loop cost that is $2.63 less than the loop cost generated by the Hatfield Model submitted in Docket 980606-TP, which, according to this Commission, had a "downward bias in costs" and tended to "understate" outside plant investment. *January 1999 Order* at 41 & 61; Pitkin, Tr. Vol. 14 at 2255-58.

> We're trying to determine the cost that BellSouth will incur to actually provide these unbundled network elements. And at locations, we're not going to be placing [Vendor] A and [Vendor] B and running different fiber rings to serve them. We're going to be placing either Vendor A and Vendor B, and we have a meld that we use of what BellSouth is actually deploying in their network and will going forward.

Caldwell, Tr. Vol. 9 at 1309-10.[18]

Third, the Commission should reject AT&T and MCI's proposal to allocate shared facilities based on the number of copper pairs rather than on DS0 equivalents. Donovan and Pitkin, Tr. Vol. 14 at 2177. This proposed adjustment ignores the fact that DLC systems are driven by DS0s, not the number of pairs – a fact that Messrs. Donovan and Pitkin appear to acknowledge. Stegeman, Tr. Vol. 10 at 1499. In a real network and in the BSTLM, the amount of fiber placed is dictated by the number of DS0s because "as you increase the number of DLC systems in your network, you increase the number of rings, which leads to an increase in the number of fibers." Stegeman, Tr. Vol. 11 at 1549-50. BellSouth's approach to allocating fiber and portions of the DLC based on the number of DS0s is reasonable and competitively neutral. Stegeman, Tr. Vol. 10 at 1499. The same cannot be said about allocating those costs based on the number of pairs as proposed by AT&T and MCI, which Mr. Pitkin acknowledges would result in the network in Florida being underbuilt by 3%. *Id.* at 1499-500.[19]

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[18] While claiming that the BSTLM puts two terminals in the central office and at each remote, Mr. Pitkin was unable to point to any part of the model's methodology or the testimony of BellSouth's witnesses to support this claim. Pitkin, Tr. Vol. 14 at 2246-47.

[19] AT&T and MCI accuse BellSouth of being inconsistent, claiming that BellSouth has advocated the allocation of shared facilities based on the number of loops, rather than based on DS0 equivalents, in a proceeding in Georgia. Donovan and Pitkin, Tr. Vol. 14 at 2178. They conveniently neglect to mention, however, that the Georgia proceeding involved the cost of universal service, not the cost of unbundled network elements, and featured use of the FCC's Synthesis Model, not the BCPM. Donovan, Tr. Vol. 14 at 2194-98.

In developing the costs of the various unbundled network elements and combinations, BellSouth ran the BSTLM under three different network scenarios. The BST2000 scenario was used to develop material investments for all of the non-copper only, non-combination network elements. The BST2000 scenario reflects the fact that all loops (other than those combined with a port) served via a fiber feeder based DLC system must operate on a nonintegrated basis since these unbundled loops are not terminated directly into the BellSouth switch. This is accomplished in the BSTLM by setting all of the switched services to "non-switched" so the model will build the network such that these loops terminate in a central office terminal rather than terminating in a directly integrated DS1 into the switch. Caldwell, Tr. Vol. 8 at 1216.

The Copper Only scenario was used to develop material investment of those network elements served only on unloaded copper feeder and distribution facilities. The Copper Only scenario is necessary in order to develop costs for copper loops of any length. *Id.* at 1217.

The Combo scenario was used to develop material associated with the two loops used in combinations (the 2-wire analog voice grade loop and the 2-wire ISDN loop). Since combination loop/port offerings can be served via integrated DLC, this scenario sets all switched services back from the "non-switched" setting used in BST2000 to the "switched" setting. With this setting, all switched services are designed using integrated DLC. *Id.*

AT&T and MCI (as well as the Data LECs) contend that costs should be developed using only the Combo scenario. Donovan and Pitkin, Tr. Vol. 14 at 2129; Murray, Tr. Vol. 16 at 2502. However, such an approach would lead to an under-recovery of BellSouth's costs because the Combo scenario would not accurately reflect the costs associated with either unbundled loops or copper only loops.

First, the Combo scenario assumes that loops will be provided on fiber-based DLC systems directly integrated into BellSouth's switch at the central office – an utterly unrealistic assumption in developing the cost of an unbundled loop. Before a voice grade circuit can go to an ALEC's switch, an unbundled loop must be removed from the DLC digital DS1, converted to voice grade, and terminated on the main distribution frame ("MDF"). The costs for this conversion and the MDF termination are not included in the Combo run. Caldwell, Tr. Vol. 10 at 1218.[20]

Second, the Combo scenario assumes that all loops greater than 12,000 feet from the wire center are served on fiber-fed DLC systems, which means that the Combo scenario only develops costs for copper loops less than 12,000 feet. However, because the parties have stipulated that there should be "no length restrictions" on copper xDSL loops, the Combo scenario would not accurately model the cost of a copper loop that is unlimited in length. Caldwell, Tr. Vol. 10 at 1402.[21]

Depreciation

The appropriate asset lives for use in BellSouth's cost studies are set forth in Exhibit 52. These are BellSouth's expected economic lives for newly placed plant and are based on the 2000

[20] Although AT&T and MCI suggest that there are methods by which to provide ALECs with an unbundled loop served by IDLC, according to the FCC, such methods "have not proven practicable" and are "very expensive." *Third Report and Order* ¶ 217, n. 417 & 418. Furthermore, none of the costs associated with any of the unbundling methods suggested by AT&T and MCI are reflected in BellSouth's cost studies. Caldwell, Tr. Vol. 10 at 1411.

[21] Mr. Barta recommends that the copper/fiber crossover point should be adjusted from 12,000 feet as used in BellSouth's cost studies to 18,000 feet. Barta, Tr. Vol. 20 at 3253-54. Mr. Barta offers no factual basis to support his recommendation. The forward-looking cost study methodology requires the use of the most economic architecture for the service for which costs are being developed, which in this case is narrowband services. Loop costs were developed of increasing length using both copper cable and fiber-fed digital loop carrier. Depending on the type of construction and the volume of demand, the economics of provisioning begin to dictate the use of fiber fed digital loop carrier rather than copper cable at approximately 10,000 feet of total loop length. Fiber fed digital loop carrier is almost always the most economic alternative for loops longer that 12,500 feet. Therefore, the economic crossover distance for loop studies for voice grade services is approximately 12,000 feet, not the 18,000 feet proposed by Mr. Barta. Milner, Tr. Vol. 13 at 1978.

BellSouth Florida Depreciation Study, which analyzes the various asset accounts to determine appropriate depreciation parameters for each account. The depreciation study provides explanations of methodology, data and analysis that support the asset lives and other depreciation parameters for asset accounts, including those accounts that are used in the cost studies. The economic lives proposed by BellSouth in this proceeding are consistent with those used to determine the depreciation rates currently being booked in Florida for intrastate and for external reporting purposes. Cunningham, Tr. Vol. 5 at 764.[22]

While all the parties agree that forward-looking lives should be used in the cost studies, BellSouth's competitors pay lip service to this principle and instead propose lives that are in fact "backward-looking." For example, FCTA recommends the projection lives prescribed by the FCC for booking depreciation expense on an interstate basis, while AT&T and MCI recommend lives that are, with certain exceptions, consistent with the FCC's prescribed lives as well as those lives set forth in the Commission's *April 1998 Order*. Barta, Tr. Vol. 20 at 3237; Majoros, Tr. Vol. 6 at 938.

Lives prescribed by the FCC for interstate depreciation purposes in Florida are not appropriate for use in the cost studies. These lives were last prescribed by the FCC in 1995 and, particularly for the technology-sensitive accounts, are much too long. They are based on the old regulatory paradigm in which plant lives were artificially lengthened beyond their true economic lives so that the investment in that plant would be recovered in smaller year-to-year increments

[22] There is no merit to AT&T and MCI's claim that lives used for external reporting purposes are inappropriate for use in these studies due to the "conservatism" principle of Generally Accepted Accounting Principles ("GAAP"). The "conservatism" principle of GAAP does not determine BellSouth's lives, which, for intrastate and external reporting purposes and in BellSouth's cost studies, are determined by the approaches described in Mr. Cunningham's testimony. Furthermore, Arthur Andersen has explicitly rejected the notion that the "conservatism" of GAAP overstates costs, labeling such an argument as "misguided" and "ludicrous." Cunningham, Tr. Vol. 5 at 767-70; Exhibit 52.

over longer periods of time. The assumption under this paradigm was always that BellSouth was entitled to and would recover all of its investments, but over a longer period of time, thus reducing the amount the customer paid in the short term. This is a totally untenable assumption in today's competitive environment, which is not likely to allow BellSouth to recover investment based on lives that are inappropriately long. Cunningham, Tr. Vol. 5 at 767-69.[23]

Nor are all the lives adopted by the Commission in its *April 1998 Order* appropriate for use in the cost studies. For the five major technology-sensitive accounts (Digital Electronic Switching, Digital Circuit, Aerial Metallic Cable, Underground Metallic Cable, and Buried Metallic Cable), the Commission ordered that FCC-prescribed lives be used. However, in its *January 1999 Order* the Commission adopted a life of 13 years for digital electronic switching equipment, while the *April 1998 Order* reflected 16 years. Also, the life ordered for digital circuit equipment was 8 years in the *January 1999 Order*, a change from 10.5 years in the *April 1998 Order*. Cunningham, Tr. Vol. 5 at 778. Reverting to lives ordered in 1998 is certainly an inappropriate step backwards, particularly when the Commission has since adopted shorter lives.

In the past, the Commission has expressed concern about the substitution model used by BellSouth in determining the economic lives of aerial, underground and buried metallic cable. However, the substitution analysis technique used by BellSouth and recognized in technical depreciation literature has been proven effective in projecting the adoption of new technologies

[23] The fact that the depreciation reserve has grown over time is not an indication that FCC-prescribed lives are forward-looking. The critical issue here is not just that the reserve has increased over the past few decades, but whether the reserve has increased enough to handle retirements that will occur because of the dramatic paradigm shift in the telecommunications industry. In an environment in which one technology is rapidly displacing another technology, it is obvious that the depreciation reserve must be built up by appropriate accruals to a level high enough to handle the inevitable asset retirements. Today, with digital replacing analog, and fiber replacing copper, huge retirements of these old technologies are expected in bulk at the end of the technologies' life span. Depreciation accruals over the years have not been high enough, due to inappropriately long FCC-prescribed lives for copper and analog related assets, to position the depreciation reserve for the avalanche of retirements that will soon come. Cunningham, Tr. Vol. 5 at 772.

and the obsolescence of old technologies. Since substitution analysis recognizes technological obsolescence as the major cause of displacements, it is a more appropriate life analysis method than Historical Mortality Analysis alone for technology-sensitive asset accounts. Substitution analysis examines patterns of technology substitution, and these patterns are remarkably consistent from one substitution to another. This is a reliable method that has been developed and tested over many years in telecommunications and other industries. *Id.* at 770-71.[24]

Furthermore, any concerns about the lives proposed by BellSouth should be readily allayed by the fact that they are comparable to the lives currently used by BellSouth's competitors for depreciation purposes. Exhibits 30-37. For example, BellSouth's depreciation study reflects that the economic life of a switch is 10 years. Each competitor that provided information in response to BellSouth's discovery requests in this proceeding has determined that the economic life of their switches is 10 years or less. *Id.* Similarly, BellSouth's depreciation study reflects that the economic life of fiber cable to be 20 years. BellSouth's competitors, except for MCI, indicated that the economic life of their fiber cable is 20 years or less. *Id.*[25]

In establishing economic depreciation rates in this proceeding, the Commission must determine the expected life of newly placed plant. Majoros, Tr. Vol. 6 at 963. In setting

[24] For example, the substitution of metallic cable by fiber in the interoffice ("IOF") portion of the network is a well-established process and illustrates the usefulness and accuracy of substitution analysis for determining economic lives. Forecasts made in the late 1980s regarding the penetration of fiber in the IOF have proven to be very close to the actual penetration that has occurred. In fact, the "end date," where fiber reached 99% of circuits in service, has occurred within a year of the date that was forecasted about a decade ago. Based on the accuracy of substitution analysis in the IOF, the same method was used for the feeder and distribution. Although the rate of fiber penetration has not been as rapid as in the IOF due to lower traffic concentrations, the pattern of substitution has been similar and has proven to be useful in estimating economic lives. Cunningham, Tr. Vol. 5 at 771.

[25] The economic lives of fiber cable used by MCI are significantly longer than the lives prescribed by either the FCC or this Commission for the fiber cable account. In fact, MCI's lives are "significantly longer" than the lives its own witness believes are forward-looking. Majoros, Tr. Vol. 6 at 985. MCI's own witness could not explain how MCI had selected the fiber cable lives, nor did he make any attempt to find out why MCI is "using a life for cable that is well beyond the parameters" MCI is recommending this Commission use in this proceeding. *Id.*

depreciation lives for the equipment they are placing in Florida, BellSouth's competitors have made their own "judgment as to the useful life of that equipment." *Id.* at 987. That judgment is consistent with the results of BellSouth's depreciation study, which is the only analysis of plant lives offered by any party to this proceeding. Accordingly, the Commission should adopt the useful lives proposed by BellSouth for use in the cost studies in this proceeding.

Cost of Capital

In its cost studies, BellSouth assumed a cost of capital of 11.25%. This is the currently authorized federal rate of return, which the FCC concluded was "a reasonable starting point for TELRIC calculations ...." *First Report and Order,* ¶ 702. Although the FCC allowed an incumbent to seek to "justify a different risk-adjusted cost of capital," *Id.*, BellSouth elected not to do so.

Dr. Randall Billingsley filed testimony supporting the reasonableness of BellSouth's use of an overall cost of capital of 11.25% in its cost studies. Dr. Billingsley used three approaches to determine the cost of capital, the Discounted Cash Flow (DCF) Model, the Capital Asset Pricing Model (CAPM), and the Risk Premium Analysis. Billingsley, Tr. Vol. 2 at 178-87. Dr. Billingsley also discussed the many factors that have increased the business risk in the telecommunications industry over the last several years. Competition in the telecommunications industry has increased dramatically in recent years. Both actual and potential competition have increased and the business risk of the industry has consequently increased. Investor's expectations of competition and its impact on risk is what is reflected in the company's cost of capital. *Id.* at 164-78.

Applying the three methodologies identified above, Dr. Billingsley concluded that the current cost of equity for BellSouth is within the range of 15.35% to 15.68%. Dr. Billingsley also

calculated the forward looking cost of debt as at least 7.80%. *Id.* at 189. He then applied several tests to determine the reasonableness of an overall cost of capital of 11.25% as used in the cost studies. According to Dr. Billingsley, an overall cost of capital of 11.25% is reasonable, even assuming flotation costs are ignored, annual dividend payments are made, and using either BellSouth's actual capital structure or a market value-based capital structure. *Id.* at 195-98.

Rather than using the 11.25% which Dr. Billingsley and the FCC found to be reasonable, AT&T and MCI recommend an overall cost of capital to 8.54%. This recommendation is based upon the testimony of AT&T and MCI witness Hirshleifer, who proposes a cost of equity of 9.30%. Hirshleifer, Tr. Vol. 4 at 652. Mr. Hirshleifer's recommendations should be rejected because his analysis is replete with errors and inconsistencies and is completely arbitrary, as Dr. Billingsley explained in detail. Billingsley, Tr. Vol. 2 at 200-17. [26]

Mr. Hirshleifer's recommendations regarding BellSouth's cost of equity are not reasonable or appropriate and certainly do not reflect a forward-looking approach because they ignore the additional risks BellSouth faces on a going forward basis. As Dr. Billingsley noted, competition in the telecommunications industry has increased the business risk of companies competing in the marketplace; investors' expectations of competition and its impact on risk must be reflected in a company's cost of equity. Billingsley, Tr. Vol. 2 at 178.

The increased risk faced by BellSouth and the other incumbent local exchange companies due to competition in the local market has been acknowledged by most industry analysts as well

[26] A good example of Mr. Hirshleifer's arbitrariness concerns his decision to exclude from his CAPM analysis all members of the S&P 500 not paying a dividend yield of at least 1.5%. This 1.5% threshold was based on Mr. Hirshleifer's subjective judgment and, for reasons he was unable to explain, represents a change from the approach he used two years ago when he excluded all members of the S&P 500 not paying a dividend yield of at least 2%. Exhibit 23 (Deposition of John Hirshleifer) at 83-85. Because lower dividend yields are associated with higher growth companies that have higher equity capital costs, Mr. Hirshleifer's approach excludes those members of the S&P 500 that are likely to have the highest capital costs and thereby underestimates the expected returns composing the market proxy. Billingsley, Tr. Vol. 2 at 213.

as the FCC. *Id.* at 164-65. BellSouth faces increased risk as a result of the number of competitors entering the market, the recent wave of mergers and acquisitions in the industry, the introduction of new technology designed to bypass traditional wireline telephone services, and the regulatory process under which BellSouth must operate. *Id.* at 166-75. This increased risk is particularly acute in Florida and must be reflected in the cost of equity assumption used in establishing BellSouth's prices, contrary to Dr. Hirshleifer's recommendation. *Id.* at 175-78.

There is no merit to Mr. Hirshleifer's views concerning the supposedly low relative risk of "leasing" local exchange telephone network elements to retail providers. While offering his unsupported opinion that "[t]his business should have relatively low risk compared to many of the risky business endeavors being pursued by the telephone holding companies," Hirshleifer, Tr. Vol. 4 at 659, Mr. Hirshleifer acknowledges that "... there remains some risk that consumers, particularly business users, will bypass the network as other alternatives become available." *Id.* at 661. Mr. Hirshleifer consequently recognizes the significant risk of consumers and businesses bypassing BellSouth's network but only offers his unsubstantiated opinion that this is a "low risk" endeavor. Once again Mr. Hirshleifer substitutes his opinion for that of investors in appraising capital costs.

Notwithstanding Mr. Hirshleifer's claims to the contrary, the leasing of long-term assets can be quite risky, especially when leasing rates are regulated. In order for BellSouth to earn reasonable returns on its network assets, the firm must obtain revenues over the leasing period that cover its costs and appropriate risk-adjusted profits. However, BellSouth is partially dependent on regulators rather than solely on the market to obtain such returns. Billingsley, Tr. Vol. 2 at 218. Mr. Hirshleifer obviously recognizes that regulators' decisions may well not be appealing to shareholders' when he notes that "[t]here is still the risk of regulation itself," since

BellSouth's rate of return is dependent upon the "outcome of proceedings such as this and remains somewhat uncertain." Hirshleifer, Tr. Vol. 4 at 661.

Furthermore, building and owning network facilities to lease to competitors is particularly risky when one considers that the leases tend to be short-term in nature. A competitor with a sufficient number of customers can subsequently choose to build its own facilities, thus stranding BellSouth's facilities. This risk is only heightened by the technological changes in the industry, which can make BellSouth's existing network facilities obsolete. Billingsley, Tr. Vol. 2 at 219-20.

Mr. Hirshleifer claims that there is no basis for increasing the 9.9% cost of capital established by the Commission in its *April 1998 Order,* contending that "[t]here have been no new significant developments in the market for the provision of [unbundled network elements] that would suggest that the cost of capital has increased." Hirshleifer, Tr. Vol. 4 at 667. However, this claim is belied by Mr. Hirshleifer's own analysis. When he last submitted testimony to this Commission on the issue, Mr. Hirshleifer calculated that BellSouth's cost of capital was 8.50% as of August 1998. However, in this proceeding, Mr. Hirshleifer asserts that BellSouth's cost of capital is 8.54%. Exhibit 23 (Deposition of John Hirshleifer) at 56-57. Thus, by Mr. Hirshlfeifer's own calculation, BellSouth's cost of capital has increased since 1998.

There is ample evidence that BellSouth faces more risk now than it did in 1998. With enactment of the Telecommunications Reform Act of 1995 and the 1996 Act, BellSouth's monopoly franchise in Florida has been eliminated and competition continues to flourish in the local market in the State at the expense of BellSouth. Indeed, even the FCC acknowledged that "incumbent LECs are likely to face increased risks given the overall increases in competition in

this industry ...." *First Report and Order* ¶ 702. Accordingly, the Commission should reject Mr. Hirshleifer's cost of equity proposal that completely disregards such increased risks.

Loadings and Structure, Cable, Drop, NID, DLC and Terminal Costs

One group of inputs that significantly impacts the loop cost is the investment (material plus engineering and installation) for feeder, distribution, and digital loop carrier. Investment includes: (1) the material prices, which were obtained from procurement records reflecting BellSouth's actual purchase prices (including actual discounts); and (2) the cost to engineer and install ("E&I") the item of plant, which was calculated using BellSouth's In-Plant factors. Caldwell, Tr. Vol. 1 at 107.

BellSouth used BellSouth-specific material prices for copper and fiber cable, the drop, NID, DLC, and terminals. However, because inflation causes fluctuations in the forward-looking investment amount over the life of an investment, BellSouth also applied an inflation factor to recognize the increases and decreases in prices BellSouth pays for these physical pieces of plant on average over the three-year study period (in this case 2000-2002). The investment inflation factors are the cumulative average of three years' projected inflation rates based on BellSouth telephone plant indices ("TPIs"). *Id.* at 100.[27]

BellSouth converted material prices to an installed investment through the use of In-Plant Factors, which add engineering and installation labor and miscellaneous equipment to the material price. The installed investment is the dollar amount recorded in capital accounts. BellSouth's In-Plant factors are one type of loadings, which are factors designed to augment

[27] The TPIs are price indices that measure the relative changes in prices BellSouth pays for the construction of telephone plant between specific periods of time. The development of TPIs uses econometric techniques to establish mathematical relationships between the historical movement in each of the labor and material components that make up the TPIs and the historical movement in explanatory variables. Explanatory variables are usually aggregate measures of the U. S. economy, e.g., price deflators from the national income and product accounts, union wage rates, copper prices, and other macroeconomic variables. Joel Popkin and Company, a BellSouth consultant, assists BellSouth with the calculation of TPIs. Caldwell, Tr. Vol. 1 at 100.

calculated material prices to account for additional costs that are difficult to ascertain on an individual, element-specific basis. The In-Plant factors are developed based upon mathematical relationships between the material prices and the additional labor expense, miscellaneous material, and support structures to capture the total cost BellSouth will incur on a going-forward basis. *Id.* at 101-02.

In-Plant factors are account specific and are developed based on BellSouth-specific information on the state level. There are four types of In-Plant factors: (1) Material Loading, (2) Telco Loading, (3) Plug-in Loading, and (4) Hardwire Loading. The Material Loading is applied to a material price, the Telco Loading to the vendor-installed investment, the Plug-in Loading to the deferrable plug-in and common plug-in material prices, and the Hardwire Loading to the hardwire portion of an equipment material price. *Id.* at 102.[28]

AT&T and MCI argue that BellSouth's cost calculations improperly "double count" the effects of inflation because, according to their witness Mr. Pitkin, inflation is already reflected in the nominal cost of capital and should not also be applied to the material investment generated by the BSTLM. This argument is misguided. First, it ignores that there are two distinct types of inflation that impact the cost BellSouth will incur; one to compensate investors for the use of their funds and the other to capture the increase or decrease in cost of the plant itself. Because the cost of capital compensates investors for the use of their funds, one must consider

[28] There are other types of loadings included in BellSouth's cost studies, including: (1) Supporting Equipment and Power ("SE&P") Loadings to calculate the incremental investment required to support an additional dollar of central office and circuit investment; (2) loadings for land and buildings, which were developed by comparing central office land and building investments to central office and circuit investments; (3) Pole and Conduit Loading factors; and (4) a loading factor that accounts for the Right-to-Use ("RTU") investment related to central office switching equipment. Caldwell, Tr. Vol. 1 at 103-04. In developing the loading factors to identify the amount of pole and conduit investment required to support the associated aerial and underground cable, anticipated net rents (expenses paid to other parties for attaching to their structures less revenues received from others for attaching to BellSouth's structures) from sharing arrangements were considered. Thus, implicitly structure sharing is reflected in the calculation. *Id.* at 121-22.

inflationary effects. On the other hand, the loop material costs are the actual costs BellSouth incurs in running the business, which are hardly immune from inflation. BellSouth must pay both for its facilities and to reimburse its investors. Caldwell, Tr. Vol. 8 at 1230-32.

Second, the Commission has previously endorsed the use of investment inflation factors in establishing rates for unbundled network elements. BellSouth used this same costing approach in 1996 and 1998, which the Commission adopted on both occasions. Caldwell, Tr. Vol. 10 at 1422. In fact, the Commission has found that BellSouth's use of inflation factors is "reasonable." *April 1998 Order* at 55. AT&T and MCI can take no comfort in the fact that the Commission rejected use of inflation factors in establishing the cost of basic local exchange service in Docket 980696-TP. In so doing, the Commission noted that inflation factors "may be necessary in a proceeding that involves a specified time period, *e.g.*, a contract...." *January 1999 Order* at 158. This is such a proceeding, and, consistent with its prior decisions, the Commission should use investment inflation factors in establishing rates here.[29]

While not questioning the appropriateness of an inflation factor, Sprint witness Dickerson alleges that the methodology BellSouth uses to determine the inflation factors for use with material prices involves adding a loading factor to inflation and then subtracting productivity. Unfortunately, Mr. Dickerson has confused the process by which BellSouth projects plant specific expenses for future years with how the inflation adjustment factor that is used in

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[29] Indeed, under cross-examination Mr. Pitkin had difficulty even explaining the basis for his theory that BellSouth is "double counting" inflation. When confronted with a hypothetical which clearly illustrates that BellSouth cannot pay its investors their required rate of return if the cost of materials increases over time, Mr. Pitkin said that the hypothetical was "incorrect" because it did not assume "an increase in revenues." Pitkin, Tr. Vol. 14 at 2212-15. When confronted with the fact that BellSouth's "revenues" for a particular unbundled network element cannot increase when the rate for that element is set by the Commission for a specified period of time, Mr. Pitkin claimed that BellSouth would be made whole over time because it would be "overcompensated" in the first years and "undercompensated" in the latter years – a claim that makes absolutely no sense. *Id.* at 2216-17. Not surprisingly, Mr. Pitkin did not cite a single treatise supporting his views and admitted that this was the first cost proceeding in which AT&T and MCI had even raised its new-found "inflation" theory. *Id.* at 2226.

conjunction with material prices is developed. In determining future plant specific expenses, BellSouth appropriately uses the following components to project a growth rate; load (percent change in average access lines in service), inflation related to labor, and productivity offset. This calculation appropriately recognizes the fact that expenses related to maintenance; i.e. plant specific expenses, are highly labor intensive. This calculation is nothing more than a straight average of the cumulative effect of inflation over the study period. Caldwell, Tr. Vol. 10 at 1233.

Several parties also criticize BellSouth's use of In-Plant factors, even though they have been used by this Commission in establishing unbundled network element rates in the past. Caldwell, Tr. Vol. 10 at 1412. For example, AT&T and MCI insist that the In-Plant factors overstate the cost of larger sized cables. While the relationship of the combined costs of installation labor, exempt material, sales tax and engineering to total material costs may not be perfectly linear, the use of in-plant factors produces representative cost results when viewed on a total cable placement basis. While the use of In-Plant factors may potentially overstate, to some degree, the costs for large size cables, then the corollary is also true, which means that the In-Plant factors potentially understate, to some degree, the costs for small size cables. This is significant because, if the theory advanced by AT&T and MCI were true, BellSouth has understated the cost of its copper loop network since the BSTLM has projected a greater percent of small cable placements then what was used to develop the factors. Caldwell, Tr. Vol. 8 at 1234.

Sprint asserts that BellSouth's In-Plant factors do not distinguish between the type of facility being studied and cause projected installation costs to vary linearly with the number of pairs placed. Sprint is wrong on both counts. First, BellSouth developed unique In-Plant factors

for each type of cable (aerial copper, aerial fiber, underground copper, underground fiber, buried copper, buried fiber, etc.) based on costs incurred during 1998 in placing hundreds of thousands of cable sheath feet. BellSouth does not load engineering and installation costs equally to all loops, as alleged by Sprint. Second, because BellSouth's In-Plant factors convert a material cost into a fully installed, ready-for-service cost, they do *not* vary linearly with the number of pairs placed as alleged by Sprint. While BellSouth's installed, ready-for-service costs vary linearly with the material costs of the specific cable type, whatever distortions that may be present from a "wire center density" or "size of cable placed" perspective are minimal in BellSouth's cost study. *Id.* at 1236-37.[30]

While criticizing BellSouth's use of In-Plant factors, the other parties offer no reasonable alternative. BellSouth does not have readily available all of the detailed information necessary to populate the BSTLM in lieu of using In-Plant Factors and other loadings. Caldwell, Tr. Vol. 10 at 1405-06. AT&T and MCI's proposed solution – to use selective BCPM inputs adopted by the Commission in its *January 1999 Order* – is no solution at all. The BCPM was designed as a universal service model. As a result, inputs were established from the standpoint of developing the engineering practices and resulting costs of the most efficient provider in Florida and thus did not and still do not represent BellSouth in Florida. In addition, directly transferring inputs from a universal service cost model (BCPM) to an unbundled network element model (BSTLM) should only be done by considering the basis for the inputs, their inter-relationships and the engineering

[30] Mr. Dickerson attempts to make his point by comparing potential cost differences based at the extremes of "cable sizes." The reality is that actual cable placements, generated by the BSTLM, basically follows somewhat of a bell shaped curve with the great preponderance (over 75%) of cable placement affecting only 25 pair, 50 pair, 100 pair, and 200 pair cable placements. Exhibit 93. BellSouth almost never places the extreme cable sizes Mr. Dickerson uses as examples in his testimony, which calls into serious question the usefulness of his analysis. Caldwell, Tr. Vol. 8 at 1237.

practices reflected by each unique model – considerations completely ignored by AT&T and MCI. Stegeman, Tr. Vol. 10 at 1510.

Unlike AT&T and MCI, BellSouth analyzed all of the BCPM inputs approved by the Commission in its *January 1999 Order*, brought them up to date, and converted them into inputs to the BSTLM to the extent practicable. In certain instances where BCPM inputs were not available or too difficult to translate (DLC and SONET), BellSouth left BSTLM inputs as is. The results of this analysis are compelling:

Model Run	**Average Loop Investment**
BCPM with Commission inputs	$ 892
BSTLM with BellSouth inputs	$ 852
BSTLM with BCPM inputs	$ 832
BSTLM with AT&T/MCI inputs	$ 436

Stegeman, Tr. Vol. 10 at 1512; Caldwell, Tr. Vol. 10 at 1414-15. These results clearly demonstrate that BellSouth's use of In-Plant factors is reasonable, while the same cannot be said about the selective use of BCPM inputs advocated by AT&T and MCI.

Switching Costs and Associated Variables

BellSouth employed a two-stage process in developing material prices for exchange ports, features, unbundled switching, and common transport. The first stage of the process was to develop fundamental studies that identify material prices for basic switching functions, including non-traffic sensitive line termination, call setup, and line and trunk usage. The second stage of the process was to identify, for each network element or retail service, which of the basic switching functions are used, along with material prices unique to that element or service. Page, Tr. Vol. 11 at 1563.

BellSouth used SCIS/MO to compute fundamental switching material prices. By essentially replicating the actual switch engineering rules provided by the switch vendors, the SCIS/MO model uses a "bottoms-up" approach to establish the fundamental switching material prices for each central office switch included in the cost study. The individual switch architecture and the switch vendors' engineering rules are used to identify the material price drivers, which are reflected as SCIS/MO user input data such as originating plus terminating usage expressed in CCS (one hundred call seconds), quantity of analog lines, quantity of digital lines, processor utilization, etc. Using this input data in conjunction with the switch vendor engineering rules, material price tables, vendor discount tables, and other miscellaneous tables within the model, SCIS/MO employs equations to determine the material prices associated with the various central office functions. *Id.* at 1567-68.

BellSouth used its newly developed model, the Simplified Switching Tool ("SST"), to develop material prices for individual exchange ports, features, and local usage. The SST uses SCIS MO functional material prices in combination with switch vendor-specific hardware prices and processor realtime estimates to identify, in material price dollar terms, the resource load that each feature places upon the switch. Because specific central office switch features differ in the types of switch resources they consume, the processor material prices comprise one category of feature-related material prices. Some of the features also tie-up an additional call path. For example, a three-way call invokes another call path in addition to the one established with the original call. Special hardware is required to complete some of the feature calls. Finally, some feature-related calls require queries to the SS7 database in order to complete the call. *Id.* at 1575-76.

In order to categorize the features, BellSouth looked at approximately 100 of the most significant features in terms of demand. Included in this set were the individual feature elements studied previously in Florida. In an attempt to simplify the process, rather than categorizing each and every switch feature, only the ones with significant market interest were studied. Based on vendor documentation and examination of detailed SCIS/IN formulas, each feature was assigned to a category depending on the resources it uses. *Id.* at 1585-87.

BellSouth used the SST-Usage ("SST-U") model to compute the material prices for unbundled switching and common transport. The SST-U identifies, in material price dollar terms, the resource load that each minute of use places upon the end office or tandem switch. It does this by processing SCIS Model Office functional material prices in combination with switch processor realtime estimates and customer calling characteristics. The model also uses outputs from BellSouth's Interoffice and SS7 Fundamental Studies to develop the cost per minute of use for Common Transport Mileage and Facilities Terminations. *Id.* at 1588-89.

Most of AT&T and MCI's criticisms concerning BellSouth's switching cost studies relate to vertical features. For example, AT&T and MCI witness Pitts insists that "BellSouth's presumption that features, because they use the processor, must pay for the processor is misguided" because, according to Ms. Pitts, "feature usage does not impact the level of getting started investment." Pitts, Tr. Vol. 15 at 2296. Ms. Pitts's argument ignores plentiful evidence from the switch vendors themselves that features do affect the useful capacity of a switch, and therefore will help determine the number and type of switches that must be placed. Page, Tr. Vol. 11 at 1593-94.

Ms. Pitts also is wrong when she claims that "processors in digital switches do not limit the capacity of the switch, instead, switches are port limited ...." Pitts, Tr. Vol. 15 at 2291.

There is abundant evidence that switches generally have three capacity limitations: ports, processor capacity, and minutes of use capacity. The port is one of several limitations that may exist on a switch, but it is clearly not the only capacity limitation. From the standpoint of cost causality, it stands to reason that components whose purpose is to manage call processing, and whose capacity constraints are stated by the vendor in terms of call processing, should be assigned to calls, not line ports as Ms. Pitts suggests. Page, Tr. Vol. 11 at 1596-97.

There is other evidence that call and vertical feature processing cause additional costs in digital switches, notwithstanding Ms. Pitts' claims to the contrary. For example, the FCC considered this issue in the development of a forward-looking cost model for use in the universal service high-cost support mechanism. In a 1997 Public Notice the FCC clearly specified that "the models' algorithms for determining switch size should include switch capacity constraints based on (1) number of lines; (2) number of busy-hour call attempts; and (3) busy-hour traffic (measured in hundreds of call seconds)." *Guidance to Proponents of Cost Models in Universal Service Proceeding: Switching, Interoffice Trunking, Signaling, and Local Tandem Investment*, Public Notice, CC Docket Nos. 96-45, 97-160, DA 97-1912, Sept. 3, 1997, page 3. The FCC also noted that the proponents of the Hatfield cost proxy model -- AT&T and MCI -- agreed that switches have these three capacity limitations. The FCC incorporated the AT&T and MCI recommended switch capacity constraint inputs into its November, 1999 Report and Order on input values for the hybrid cost proxy model chosen for the universal service support mechanism. *In the Matter of Federal-State Joint Board on Universal Service, Forward-Looking Mechanism for High-Cost Support for Non-Rural LECS*, CC Dockets Nos. 96-45 and 97-160, Tenth Report and Order, November 2, 1999, Appendix A, Page A-11.

The Commission has previously considered the same arguments from Ms. Pitts (then Ms. Petzinger) surrounding the assignment of Getting Started costs to call processing and features. The Commission's conclusion was that processor usage is an appropriate component of the costs of vertical features:

> The local usage rates that we set in Order No. PSC-96-1579-FOF-TP included processor usage for vertical features. We believe that this is consistent with the FCC's definition that all features, functions, and capabilities of the switch are included with the switching element.

April 1998 Order at 154-59.

Ms. Pitts also criticizes BellSouth's feature usage inputs. These criticisms also are without merit. For example, while taking issue with the busy hour call usage inputs to the SST-U study, Ms. Pitts apparently misunderstands the methodology BellSouth used in developing busy hour call usage. This is understandable, given her "casual" review of BellSouth's cost studies. Pitts, Tr. Vol. 15 at 2292. Mr. Page explained in detail in his proprietary testimony the errors in Ms. Pitts' analysis. Page, Tr. Vol. 11 at 1600-01.

Both Ms. Pitts and Z-Tel witness Ford take issue with the computation of BellSouth's switch replacement discount. Pitts, Tr. Vol. 15 at 2278; Ford, Tr. Vol. 15 at 2460. However, Ms. Pitts never disputes the core principle at issue, which is that switches are purchased with the number of lines needed to serve two or three years' worth of demand. The switch is then grown as necessary, at regular intervals, to accommodate expected increases in demand. Furthermore, the growth equipment is purchased at a lower discount rate than the initial switch purchase. Whether a 10% growth rate or a 5% growth is assumed, a higher initial discount coupled with a lower replacement discount is economically sound. Page, Tr. Vol. 11 at 1607.

Dr. Ford's claim that BellSouth's replacement discount is potentially understated is incorrect. Dr. Ford, by his own admission, has not "personally reviewed any switch contracts

between [BellSouth] and its switch vendors." Ford, Tr. Vol. 15 at 2461. Had he done so, he would have realized that switch replacement jobs are priced under a structure completely different from that used for growth jobs and that there is no stated discount for replacement switches in BellSouth's contracts. As a result, BellSouth computed the replacement discount based on vendor billing for actual switch orders. This derived replacement discount, when input into SCIS/MO, produces a result that accurately reflects vendor billing. Page, Tr. Vol. 11 at 1608.[31]

AT&T and MCI have proposed what they call a "simplified" switching methodology, which is too vague and sketchy to support a cost study. It is based upon a contradictory design philosophy from the beginning. While complaining that the SST has too many "generalizations," AT&T and MCI's methodology is many times more generalized than the SST. Instead of determining, for example, the switch usage due to the various features and services available on a switch, AT&T and MCI's methodology would assume that each and every subscriber uses the same set of services – an assumption not grounded in any underlying economic principles or actual switch architecture. Page, Tr. Vol. 71 at 1610.

There are numerous other problems with AT&T and MCI's "simplified" methodology, including: (1) it ignores long established rate structures for network elements, toll and access because it does not distinguish between the very real costs of setting up a call, as opposed to per-minute costs; (2) it would lump feature costs with other traffic-sensitive costs in the switch, forcing all subscribers to pay for features whether they use them or not; (3) by assigning Getting

[31] Dr. Ford is somehow under the impression that the SCIS/MO model reflects switch prices from a different (later) time frame than the switch orders used to compute the discount. This, according to Dr. Ford, could result in "discount deflation" because switch prices decline over time. This hypothetical problem does not exist in the BellSouth study because the switch orders examined covered the years 1997, 1998, and 1999. The SCIS 2.6.1 database, used for the study, uses list prices effective 12/1/1998. The time frames are consistent, resulting in a consistent discount computation. Page, Tr. Vol. 11 at 1609.

Started costs to line ports, it violates cost causation principles, since traffic-sensitive call processing costs would be allocated to the non-traffic sensitive line port, which does not perform call processing; (4) it would produce unusable results because it does not account for remote switches. *Id.* at 1611.

AT&T and MCI's proposed methodology is nothing more than a transparent attempt to reduce artificially the cost of switching. The Commission should reject this attempt and adopt BellSouth's switching cost studies.[32]

Expenses and Common Costs

BellSouth's cost studies include a reasonable amount of shared and common costs, which is consistent with FCC rules and prior decisions of this Commission. Both the FCC and the Commission have recognized that a forward-looking cost methodology should include a reasonable allocation of forward-looking joint and common costs. *First Report and Order* ¶ 67; *April 1998 Order* at 57.

BellSouth developed appropriate shared and common cost factors for calculating the forward-looking cost of unbundled network elements, using a methodology previously approved by this Commission but that incorporates certain modifications ordered by the Commission in its *April 1998 Order.* Specifically, BellSouth's methodology for treating shared and common costs recognizes the Commission's conclusion that shared costs should be reflected by means of the shared cost factors and should not be associated with labor rates. As the Commission previously noted, this merely shifts the recovery of some of these costs from nonrecurring rates to recurring rates. *April 1998 Order* at 63. In addition, other changes were made to refine the

[32] Ms. Pitts identified several errors in BellSouth's feature hardware study. BellSouth agrees that these errors in the investment and capacity calculations should be corrected, although not in the manner advocated by Ms. Pitts. Page, Tr. Vol. 11 at 1604-06.

wholesale/retail split of costs, to recognize certain right to use fees in the shared and common cost process, and to recognize any changes in the Cost Allocation Manual ("CAM") or supporting information detail. Reid, Tr. Vol. 13 at 1901-02.[33]

The ultimate objective of BellSouth's methodology is to split the Company's total forward-looking cost of business between its wholesale and retail functions and to specifically identify three major categories of wholesale costs: (1) wholesale direct costs; (2) the portion of shared costs attributed to wholesale operations; and (3) a reasonable portion of common costs applicable to wholesale operations. It is further necessary to split wholesale direct costs between those wholesale costs that are related to recurring investment related transactions (network element related) and those that are related to "other wholesale" transactions, such as nonrecurring (*e.g.*, service order activities) or special purpose transactions (*e.g.*, operator services). *Id.* at 1903.

Because the Uniform System of Accounts ("USOA") does not uniquely identify these desired cost categories, a study was required to determine the appropriate amounts to include in each category. Fortunately, the BellSouth CAM and the reporting procedures which the Company follows to separate its costs on a cost causative basis between regulated and nonregulated costs provided a good model on which to base this study. Therefore, BellSouth utilized the basic attribution principles of its CAM, (with certain modifications to implement the Commission's prior order), and the underlying cost pools and sub-pools which it maintains for cost attribution purposes as the underlying methodology for determining the desired breakdown

[33] BellSouth did not change its methodology for treating costs associated with its Local Carrier Service Center ("LCSC"). The Company included the actual costs of its LCSC in the base year data included in the study and converted these into forward-looking costs through its study methodology. These costs are definitely wholesale in nature and should be included in a TELRIC based study, notwithstanding the Commission's contrary conclusion in its *April 1998 Order*. Reid, Tr. Vol. 13 at 1902.

of wholesale costs into categories. The wholesale costs identified through this process are the appropriate costs to apply to a cost methodology that defines the cost for unbundled network elements. *Id.* at 1905-06.

Once all of these costs are properly categorized, cost factors for use in the BellSouth cost study can be developed. For instance, the relationship between wholesale common costs and the total of wholesale direct and wholesale shared costs yields the common cost factor. In this study, the common cost factor equals 6.24%, which compares to the 5.30% common cost factor used in the previous study. A second set of factors was derived by determining the relationship, by investment type, between wholesale shared costs related to investment accounts and the associated network investment. These are the shared cost factors. These two types of factors are used as inputs to the BellSouth cost studies. This allows BellSouth to associate a reasonable amount of forward-looking shared and common costs with each unbundled network element. *Id.* at 1906-11.

Although AT&T and MCI take issue with BellSouth's shared and common costs, they either misunderstand or improperly analyze BellSouth's data. First, AT&T and MCI witness Darnell argues that BellSouth has not eliminated all retail expense from the cost of unbundled network elements, claiming that BellSouth previously determined that $1,926,591,887 of retail cost should be eliminated, while, according to Mr. Darnell, BellSouth has only eliminated $1,426,416,105 of retail expense in its current filing. Mr. Darnell opines that the retail expense to be eliminated should be $1,649,793,034. Darnell, Tr. Vol. 15 at 2319.

Mr. Darnell has incorrectly identified the amount of retail cost that BellSouth has eliminated from the cost of unbundled network elements in its cost studies. Exhibit 119 clearly shows in the retail column that BellSouth has eliminated $2,188,554,658 in direct and indirect

retail cost from the current study, which is $261,962,771 more than the previous study, not $500 million less as calculated by Mr. Darnell. Consequently, Mr. Darnell's recommendation that $1,649,793,034 be used in the study as the retail cost to be eliminated would actually increase the cost of unbundled network elements in this proceeding by over $500 million. Reid, Tr. Vol. 13 at 1918.

Second, Mr. Darnell claims BellSouth has used too low a productivity factor in its forecast of expenses. Darnell, Tr. Vol. 15 at 2321. However, Mr. Darnell has not performed any studies or provided any reasonable evidence that would indicate that the 3.1% productivity factor used by BellSouth for projecting certain expenses in its study is understated. He also conveniently ignores that BellSouth's previous cost studies used a 2.9% productivity offset for projecting expenses, which the Commission found was "reasonable." *April 1998 Order* at 55. BellSouth's use of a 3.1% productivity offset in the current study is actually more ambitious than the previous study and results in somewhat lower projected expenses. Reid, Tr. Vol. 13 at 1920.[34]

Mr. Darnell's proposal that the Commission adopt a productivity factor of 6.5% previously used by the FCC for adjusting prices in its interstate price cap formula fares no better. The FCC's decision that authorized the use of the 6.5% factor for interstate price cap purposes was reversed and remanded to the FCC for further review by the United States Court of Appeals for the District of Columbia Circuit. *See United Telephone Association v. FCC*, 188 F.3d 521 (D.C. Cir. 1999). The FCC's decision to establish a new interstate price plan for the future made

[34] Mr. Darnell also fails to appreciate that expense changes are only one part of overall productivity, as this Commission has recognized. *See April 1998 Order* at 55 ("Furthermore, because BellSouth's shared and common factors are based on the relationship between projected expenses to projected investments, and applied against forward looking investments, we find that BellSouth's factors have some inherent productivity gains").

a review of this 6.5% productivity factor moot. *See* Sixth Report and Order, *In re: Access Charge Reform*, CC Docket No. 96-262 (May 31, 2000).

Third, Mr. Darnell suggests that BellSouth may be double recovering Land, Building, and Power expense. Darnell, Tr. Vol. 15 at 2321-22. Again, Mr. Darnell's views are based on a misunderstanding of BellSouth's study. As explained in detail by BellSouth witness Reid, there is no double recovery in BellSouth's study, which do not include either network power or power related to house services for BellSouth owned central offices or for space leased to others in the shared and common cost factors. Reid, Tr. Vol. 13 at 1922-25.[35]

Fourth, Mr. Darnell claims that BellSouth has not demonstrated a need or provided a reason to increase the common cost factor from 5.30% as determined in a previous study to 6.24% as determined in its current study. Darnell, Tr. Vol. 15 at 2325. Mr. Darnell is wrong. BellSouth has explained in detail the reasons for this increase, which is due in large measure to changes in cost assignment procedures for computer and software related expenses that result in more of these costs being included in common cost and less in shared cost and changes in the allocation of a portion of billing and collection costs to wholesale. Reid, Tr. Vol. 13 at 1926-28.

Furthermore, BellSouth has provided a comparison of the overall costs by major category between the current BellSouth cost study and the previous study. This comparison shows that, while wholesale common cost increased by $177 million, wholesale shared costs decreased by $181 million. Thus, wholesale shared and common cost in total actually decreased by $4

[35] While Mr. Darnell's concerns have no merit for Company-owned land and buildings, BellSouth discovered that one cost pool that relates to central office land and buildings rented from others had been inappropriately included in central office shared cost. The appropriate treatment for this cost pool is to exclude the cost from shared cost recovery in the same manner that similar costs are excluded for Company owned central office land and buildings. The only factors that would be impacted are the shared cost factors for central office investment, which BellSouth has recalculated to exclude these costs. There would be no change in the common cost factor or any other shared cost factors. Reid, Tr. Vol. 13 at 1925-26; Exhibit 119.

million, which certainly demonstrates the reasonableness of the shared and common cost amounts used in BellSouth's study. *Id.* at 1929.

FCTA witness Barta also proposes an adjustment to BellSouth's shared and common costs, which is equally misguided. Rather than addressing the specifics of BellSouth's study, Mr. Barta would take the Florida residence resale discount factor and apply it to BellSouth's total company projected cost as a surrogate of the total retail cost to exclude as retail in BellSouth's study. Barta, Tr. Vol. 20 at 3261. However, the Florida resale discount rates, one for residence and one for business, were determined based on the individual relationships between avoided retail cost and intrastate retail revenues for Florida residence and business operations. Had Mr. Barta looked at the underlying data in BellSouth's study, he would have seen that his proposed adjustment was absurd. Reid, Tr. Vol. 13 at 1930-31.

For example, in BellSouth's study, the total projected expenses in the accounts which the FCC has indicated most likely contain retail related costs (Accounts 6611, 6612, 6613, 6621, 6622, and 6623) total $2,143,822,370. Of this amount, $212,620,641 is for operator services expenses that BellSouth has excluded from its shared and common costs. This leaves $1,931,201,729 of expense in these accounts to separate between wholesale and retail. BellSouth's revised study assigned $1,599,222,134 of this amount to retail. After allocating indirect costs to retail, BellSouth's total retail costs to be avoided per the revised cost study is $2,188,554,658. Mr. Barta's adjustment, by contrast, would have the Commission exclude $4,264,360,523 of BellSouth's cost as retail. This amount of retail cost is approximately twice the total in the expense accounts that normally include a portion related to retail. There is no justification for such a proposal, and Mr. Barta offers none. *Id.* at 1932.

Issue 8: **What are the appropriate assumptions and inputs for the following items to be used in the forward-looking non-recurring UNE cost studies?**

(a) network design;
(b) OSS design;
(c) labor rates;
(d) required activities;
(e) mix of manual versus electronic activities;
(f) other.

*** The appropriate assumptions and inputs that should be used in the development of forward-looking nonrecurring costs are those set forth in the cost studies filed by BellSouth on August 16, 2000, and as supported by the testimony of BellSouth's witnesses. ***

In developing forward-looking nonrecurring costs, BellSouth used the same network design assumptions that provide the foundation for recurring costs, incorporated the time estimates involved in provisioning unbundled network elements, and applied appropriate forward-looking labor rates. Because the required activities vary depending upon what is being ordered, BellSouth has presented three types of nonrecurring costs: nonrecurring costs for unbundled network elements, nonrecurring costs for combinations that currently exist in BellSouth's network ("switch-as-is" combinations), and nonrecurring costs for combinations that do not currently exist in BellSouth's network ("new" combinations). Caldwell, Tr. Vol. 1 at 110 & 129-34. Consistent with the Commission's prior decisions, BellSouth has eliminated the shared component from the labor rate and has established a rate structure such that disconnect costs are assessed at the time of disconnect. *April 1998 Order* at 63 & 69.

BellSouth personnel familiar with the provisioning process provided input into the nonrecurring cost development. They provided the process flow, the work centers involved, any probabilities that may be required, and the time required by work center. Provisioning activities can be desegregated into five basic categories, although not every category is applicable to every

unbundled network element: (1) Service Inquiry, which reflects an up-front process by which the availability or suitability of facilities is determined; (2) Service Order Processing, which reflects activities incremental to electronic and manual service orders; (3) Engineering, which reflects activities such as the work required to construct design lay-out records, review pending jobs, and confirm network design standards; (4) Connect & Test, which reflects the physical activities performed by the Installation and Maintenance, Special Services Installation and Maintenance, Circuit Provisioning, and Recent Change Memory Administration Groups to provision the requested element and to ensure the transmission quality of the element; and (5) Travel, which reflects the amount of time needed by technicians to get to the work location with the understanding that more than one task can be accomplished per trip. Caldwell, Tr. Vol. 1 at 132-33.

Labor rates for specific work groups were developed based on extracts of previous year's data from the Financial Front End System. This extract accumulates labor expense and hours. A PC application processes this information to produce labor rates. During processing, the actual costs for a given work group are accumulated by expenditure type (e.g., direct labor productive, premium, other employee, etc.). These actual costs are divided by the actual hours (classified productive hours for plant and engineering work groups and total productive hours for cost groups) reported by work group to determine the basic rates. The base year of labor rate data collection was the 1998 calendar year. A labor inflation factor is developed from the BellSouth TPIs and is applied to inflate these rates to the study period 2000-2002. *Id.* at 132.

BellSouth's nonrecurring cost studies reflect forward-looking ALEC access to BellSouth's operational support systems ("OSS"), which is provided via mechanized interfaces for the ALEC to perform pre-ordering and ordering functions. The pre-ordering activities

revolve around telephone number reservation, address validation, switch feature and service verification, and due date calculation. The ordering processes facilitate interactive entry of Local Service Requests ("LSRs"), LSR status inquiry, and supplemental LSR entry. The ALECs access the BellSouth's internal legacy systems with a single log-on, and the electronic interfaces manage the sending and receiving of data to and from the BellSouth OSSs. *Id.* at 130-31.

Consistent with the FCC's *Third Report and Order,* BellSouth is implementing a process to provide ALECs with electronic access to loop make-up information. Pate, Tr. Vol. 11 at 1618. This process will allow ALECs to access electronically BellSouth's Loop Facility Assignment Control System ("LFACS") as part of pre-ordering for a loop make-up data query. This will allow the ALEC to make a decision about whether the loop is capable of supporting the service and equipment the ALEC intends to provide to its end user customer, and, if so, to reserve up to ten pairs. This access will be via the pre-ordering functionality of the Telecommunications Access Gateway ("TAG") and Local Exchange Navigation System ("LENS") electronic interfaces. A beta testing process began July 31, 2000 with selected ALECs. Once the Beta Testing is completed, BellSouth will begin service readiness testing for interested ALECs. *Id.* at 1618-19.[36]

While not including the cost of the OSS interfaces such as TAG and LENS in its cost studies, BellSouth's studies do reflect the labor costs associated with the tasks required to fill an

[36] BellSouth's mechanized loop makeup costs $.69 per query. This cost reflects the investment-related expenses for the newly installed computer servers and data communications equipment. The vendor-installed prices and installation costs for the incremental investments are identified along with their associated hardware maintenance expenses. This cost also includes software expenses for system development, contractor expenses for the development, enhancement and implementation for the computer applications, and ongoing computer application support. Thus, BellSouth incurs costs for more than merely a "dip" into its database, as Mr. Riolo contends. Mr. Riolo conveniently ignores that software must be installed, additional equipment must be purchased, and programming must be preformed in order for ALECs to make use of the mechanized loop makeup. Each of these activities causes BellSouth to incur a cost, which is caused by the ALECs, and thus, should be recovered from the ALECs. Caldwell, Tr. Vol. 8 at 1207-08.

LSR that is submitted either electronically or manually. The Electronic Service Order per LSR element reflects the costs developed based upon projected fall-out rates for orders placed electronically and include fall-out generated by ALEC errors and "by design." Experts familiar with ALEC order processing provided the distribution of the different types of orders, e.g., individual unbundled network elements, combinations, and complex orders, the time required to handle the different types of orders, and the amount of fall-out that occurs for electronic orders. The Manual Service Order per LSR element reflects the costs for LSRs that a service representative in the LCSC must manually enter into BellSouth's OSS, and, once the Firm Order Confirmation ("FOC") status is returned from the systems, this notification is faxed to the ALEC. Caldwell, Tr. Vol. 1 at 131.

Network and OSS Design

Several of BellSouth's competitors urge this Commission to establish nonrecurring rates based on a hypothetical highly automated network that exists only in their minds. For example, Ms. Murray opines that many nonrecurring work activities would not be required if BellSouth deployed forward-looking OSS "to fully support" Next General Digital Loop Carrier (NGDLC). While NGDLC offers some advantages in the provisioning and maintenance processes, NGDLC will never eliminate the need to dispatch technicians in any number of scenarios. Any attempt to portray NGDLC as a mechanism by which BellSouth can provision and maintain its network with the single push of a button and without a technician ever visiting the field is pure fantasy. Milner, Tr. 13 at 1969.

NGDLC systems offer certain advantages in the service provisioning and maintenance process. In particular, NGDLC systems reduce the need for a dispatch by facilitating the provisioning of cross-connects and by permitting enhanced remote testing architectures.

However, NGDLC systems do nothing to reduce the need for dispatching a technician when a customer's Plain Old Telephone Service ("POTS") line is changed to a special service or data service. A dispatch is required in every such instance because a technician must physically change the line interface card at the NGDLC remote terminal to an integrated or broadband card that is necessary to provide the special or data service to the customer. *Id.* at 1969-70. Mr. Riolo's assumption that only 20% of xDSL loop orders should require a dispatch is unrealistic, since a dispatch is required on every xDSL loop order. Greer, Tr. Vol. 11 at 1704.[37]

While BellSouth continually explores ways to enhance deployment of NGDLC, in order for BellSouth to deploy NGDLC and enjoy the benefits in the manner contemplated by Ms. Murray and Mr. Riolo, it would be necessary for BellSouth to build loop distribution and loop feeder facilities such that each and every customer loop was "connected through" to BellSouth's central offices at the time of the original construction. Such a scenario would be cost prohibitive and, therefore, is unlikely to exist any time soon. Milner, Tr. Vol. 13 at 1972-73.

Equally fanciful is the suggestion that BellSouth should develop nonrecurring costs based on some unidentified system that could electronically switch end users from a BellSouth switch to an ALEC's switch without any physical work. No such system exists anywhere in the telecommunications industry, either at present or on a "forward-looking" basis. On the contrary, the cutover process for facility-based ALECs is complex and involves a number of manually intensive activities described in detail in Mr. Milner's testimony. BellSouth is entitled to recover

[37] Coalition witness Stacy also advocates that the Commission assume that only 20% of UCL loop orders will require a dispatch because the same pair that is used to provide voice service will be used for xDSL service. However, whether or not the same loop that is providing voice service can be reused to provide xDSL service, a dispatch is required in order to ensure that certain parameters are met so that the loop will be suitable for the intended xDSL service. These parameters include loading, foreign voltage, capacitance, resistance, and actual measured loss. If these parameters are met, the field technician will then attempt to test cooperatively with the ALEC. These parameters cannot be accurately tested without a technician in the field to send and receive the appropriate tones and read the measurements, which necessitates a dispatch 100% of the time. Greer, Tr. Vol. 11 at 1707.

the cost of such activities, which cannot be summarily disregarded based on dreams of non-existent futuristic systems. *Id.* at 1974-77.

Manual Versus Electronic Required Activities

With some exceptions (which are discussed below), the parties generally follow the same categories of major work activities that BellSouth used in its nonrecurring cost studies: Service Inquiry, Service Ordering, Engineering, Connect and Test, and Travel (which is reflected as UNEC, WMC, CO I&M, SSI&M (Outside Plant) in Mr. Riolo's testimony). Nevertheless, the ALEC witnesses propose a series of adjustments to these activities, none of which the Commission should accept.

For example, Mr. Riolo recommends that the Service Inquiry functions performed by the CRSG and the LCSC be eliminated or reduced. However, the work activities that are at issue here occur only when BellSouth performs the Service Inquiry function. BellSouth allows the ALEC the ability to independently "qualify" a loop to determine whether the loop meets the ALEC's desired transmission standards. Thus, for each xDSL loop, there are two nonrecurring elements – one with loop makeup information and one without. Caldwell, Tr. Vol. 8 at 1207. When an ALEC obtains loop makeup information for itself, neither the CRSG nor the LCSC performs the service inquiry function. However, when BellSouth performs the service inquiry function, the CRSG and the LCSC is involved 100% of the time, which makes Mr. Riolo's assumption that Service Inquiry will take place on only 10% of LSRs nonsensical. Greer, Tr. Vol. 11 at 1700.

The same is true for Mr. Riolo's proposal that Service Inquiry should take only 30 minutes. In making this recommendation, Mr. Riolo omits a number of the Service Inquiry functions performed by the CRSG and the LCSC, including: (1) serving as the first point of

contact for ALECs ordering certain types of network elements; (2) providing information on service availability; (3) researching ALEC agreements to ensure that the services the ALEC orders are included in the agreement and advising the ALEC of any needed amendments to provide those desired services; (4) providing guidance to the ALEC on completing the required documentation for desired network elements; (5) reviewing and validating the service inquiry and the LSR; and (6) clarifying any problems and working with the ALEC to resolve them. In short, the work activities of the CRSG and the LCSC are not nearly as limited as Mr. Riolo suggests. Greer, Tr. Vol. 11 at 1699.

With respect to Engineering work activities, Mr. Riolo does not question the work times assumed by BellSouth for engineering work in the Service Advocacy Center ("SAC"), the Address and Facility Inventory Group ("AFIG"), and the Circuit Provisioning Group ("CPG") (other than with respect to nondesigned versus designed issue previously discussed). However, Mr. Riolo proposes arbitrary adjustments to the frequency when these work groups are involved, proposing that their involvement be limited to 1% of orders. Nothing in either Mr. Riolo's testimony or BellSouth's experience supports such a proposal. Because of the complexity of designed circuits, the SAC, the AFIG, and the CPG are involved in a significant percentages of orders and BellSouth's assumptions on their involvement are, at the very least, conservative. *Id.* at 1700-02.

With respect to Connect and Test activities, work groups at BellSouth's Unbundled Network Element Center ("UNEC"), Special Services Installation and Maintenance ("SSI&M"), Work Management Center ("WMC"), and Central Office Installation and Maintenance ("CO I&M") are involved in actually putting the facility to work. Several ALEC witnesses complain about what they view as undue amounts of coordination time by the UNEC and the WMC.

These work groups are responsible for coordinating the conversion of an end user's service from BellSouth to an ALEC. Such coordination is essential in the unbundling process to ensure the proper ordering, provisioning, billing, and maintenance of the various elements involved, particularly when dealing with integrating the systems of multiple companies. Milner, Tr. Vol. 13 at 1974-75.

In other contexts, ALECs have recognized the importance of this coordination function. In particular, AT&T has asked this Commission to arbitrate the issue of how coordinated loop cutovers should be performed and has proposed language obligating the UNEC to perform specified coordination functions. King, Tr. Vol. 15 at 2430-33; Exhibits 137 & 138. At the same time, AT&T contends that the cost of performing such functions should be excluded from BellSouth's cost studies, because, according to AT&T, the UNEC is a cost of doing business that "should be recovered from BellSouth's stockholders." King, Tr. Vol. 15 at 2436. This position is completely untenable. If the coordination function performed by the UNEC is important enough to be included in a future interconnection agreement between BellSouth and AT&T, the cost of this function should properly be reflected in a forward-looking cost study. Indeed, when asked to identify a cost of doing business that AT&T recovers from its stockholders rather than its customers, AT&T witness King was unable to do so. *Id.* at 2437.

Both Mr. King and Mr. Riolo propose a series of adjustments to the involvement of the SSI&M and CO I&M groups in performing Connect and Test activities. Mr. King, who has absolutely no network experience or expertise, recommends that the Commission adopt work times that are "very close" to the times in the AT&T/MCI Nonrecurring Cost Model submitted in 1998. King, Tr. Vol. 15 at 2437-38. The Commission rejected such work times two years ago and nothing has occurred that such cause the Commission to reach a different result here.

The Commission also should reject Mr. Riolo's proposed "task times," which are based upon numerous errors. First, BellSouth has no frames on which a single jumper may be placed within three minutes. Second, Mr. Riolo assumes a single jumper, even though there will be a minimum of three jumpers on multiple frames required for many of the types of services at issue. Third, Mr. Riolo fails to take into account multi-line orders that should be reflected in the "Obtain and Review Order" categories, which require greater time intervals than Mr. Riolo has proposed. Greer, Tr. Vol. 11 at 1705.

Mr. King advocates that any work time associated with the LCSC for ordering functions be eliminated because Mr. King has assumed that there will no fallout in the ordering process. In other words, according to Mr. King, "every time an [ALEC] submits an order that may have an error on it, BellSouth's systems will be able to electronically identify that error, electronically resubmit the order back to the [ALEC], and have the [ALEC] correct that error." King, Tr. Vol. 15 at 2417. However, such an assumption is utterly unrealistic. In fact, data from May through July 2000 reflect that between 8.3% and 15.1% of ALEC orders "fell out" for manual handling due to ALEC errors on the LSR, which makes BellSouth's 3% fallout assumption very reasonable. Pate, Tr. Vol. 11 at 1626. The same cannot be said for Mr. King's zero fallout assumption, since, as Mr. King acknowledged, BellSouth's systems cannot identify every ALEC error electronically today, and Mr. King is unaware of any carrier that has deployed such capability. King, Tr. Vol. 15. at 2417-18.

Several of BellSouth's competitors erroneously claim that certain work activities reflected in nonrecurring costs are already being recovered in recurring rates. This claim represents a fundamental misunderstanding of the differences between capitalized labor and nonrecurring labor expense. Using a loop as an example, the labor associated with construction

of the loop is *capitalized* consistent with Part 32 of the FCC's Rules, which require that "[i]n accounting for construction costs, the utility shall charge to the telephone plant accounts, all direct and indirect costs." Included in the direct and indirect costs are the "wages and expenses of employees directly engaged in or in direct charge of construction work." Thus, BellSouth has appropriately included these labor-related costs (construction costs) in the calculation of the investment; i.e., as part of the capitalized plant account. The costs associated with the investment (material plus construction costs) are expressed on a recurring (monthly) basis and are comprised of capital costs and operating expenses. Caldwell, Tr. Vol. 8 at 1201-02.

Nonrecurring costs, by contrast, include activities associated with provisioning the service after the loop has been constructed. *Id.* at 1202. Thus, Ms. Murray's statement that "the recurring cost that new entrants incur already includes costs for all installation work that BST also seeks to include in its nonrecurring cost study" is false. Murray, Tr. Vol. 16 at 2526. The nonrecurring costs BellSouth incurs to provision an unbundled loop for an ALEC are incremental to BellSouth's capitalized costs associated with constructing the facilities in the first place. The nonrecurring costs reflect the work associated with activating the circuit to ensure that it is working, such as running the jumpers at the cross-box, making the physical connection at the NID, and testing the circuit to ensure that it meets the transmission requirements set for the specific loop ordered. These activities only occur when BellSouth receives a service request from the ALEC, and none of the costs of these activities are included in BellSouth's recurring costs. Caldwell, Tr. Vol. 8 at 1202-03.[38]

[38] Mr. King made a number of adjustments to BellSouth's nonrecurring cost studies to eliminate work activities that he believed were being recovered in recurring rates. King, Tr. Vol. 15 at 2437-38. However, Mr. King was unable to point to any specific part of BellSouth's cost studies to establish that such work activities were in fact being recovered in recurring rates. Indeed, Mr. King claimed that he was relying upon Mr. Darnell to make such adjustments, even though Mr. Darnell's testimony does not even address the issue. *Id.* at 2438-40.

Equally misguided are claims by the Data LECs and Sprint that maintenance activities that BellSouth categorized as nonrecurring are already recovered in the maintenance factor used in developing recurring rates. For example, Data LEC witness Riolo's contention that loop conditioning costs are included in BellSouth's plant maintenance costs is false. Although Mr. Riolo believes that the costs associated with load coil removal are captured as part of BellSouth's ongoing maintenance budget, BellSouth is not aggressively removing load coils as part of any rehabilitation initiative and will not do so on loops less than 18 kft unless a trouble develops on the cable. Because it is the ALEC's service request that causes BellSouth to incur the cost to remove load coils or bridged tap, the ALEC should pay BellSouth for such work. Caldwell, Tr. Vol. 8 at 1203-04.

Sprint witness McMahon makes a similar mistake in equating trouble resolution activities to maintenance activities that are considered in the recurring cost of the loop. Again, this is a misrepresentation of the correct classification of labor costs. BellSouth cannot close the ALEC's service request until all troubles are cleared and the circuit is available for the ALEC's desired use. The costs associated with clearing a trouble as part of a service request are obviously not part of the routine maintenance costs included in the recurring cost component and are appropriately calculated as a nonrecurring expense. *Id.* at 1204.

The work activities associated with the ordering and provisioning of unbundled network elements are complex and time consuming, and the costs of such activities can be expensive. ALECs should not be permitted to avoid such costs by proposing adjustments to those costs based on forward-looking networks that do not exist and unsupported theories of how long it should take BellSouth to perform such work activities. BellSouth's nonrecurring cost studies are reasonable and should be adopted by the Commission.

Issue 9(a): **What are the appropriate recurring rates (averaged or deaveraged as the case may be) and non-recurring charges for each of the following UNEs?**

(1) 2-wire voice grade loop;
(2) 4-wire analog loop;
(3) 2-wire ISDN/IDSL loop;
(4) 2-wire xDSL-capable loop;
(5) 4-wire xDSL-capable loop;
(6) 4-wire 56 kbps loop;
(7) 4-wire 64 kbps loop;
(8) DS-1 loop;
(9) high capacity loops (DS3 and above);
(10) dark fiber loop;
(11) subloop elements (to the extent required by the Commission in Issue 4);
(12) network interface devices;
(13) circuit switching (where required);
(14) packet switching (where required);
(15) shared interoffice transmission;
(16) dedicated interoffice transmission;
(17) dark fiber interoffice facilities;
(18) signaling networks and call-related databases;
(19) OS/DA (where required).

*** The appropriate recurring and nonrecurring rates for the unbundled network elements and interconnection at issue in this proceeding are set forth in Exhibit 92. ***

BellSouth's proposed recurring and nonrecurring rates are set forth in Exhibit 92. These rates are "just and reasonable" and comply with all applicable requirements of the 1996 Act and FCC regulations. Accordingly, the Commission should adopt these rates (with the adjustments outlined in the rebuttal testimony of Joe Page and Walter Reid).

Issue 9(b): **Subject to the standards of the FCC's Third Report and Order, should the Commission require ILECs to unbundle any other elements or combinations of elements? If so, what are they and how should they be priced?**

*** Absent a showing that access to a network element is "necessary" and that failure to provide such access "impairs" the ability of an ALEC to compete, the Commission cannot

require BellSouth to bundle any other elements or combinations of elements. No such showing has been made in this case. ***

No party seriously argues that BellSouth should be required to unbundle any additional network elements or combinations of elements. Although there was some discussion of unbundled access to Digital Subscriber Line Access Multiplexers ("DSLAMs"), the FCC has made clear when DSLAMs must be unbundled.

In particular, BellSouth must provide unbundled DSLAMs only in specific instances where BellSouth has installed its own DSLAMs but will not or cannot accommodate a request for an ALEC to collocate its own DSLAMs. Basically, in its Rule 51.319(c)(5), the FCC identified four conditions that, only where all four conditions are present, would an ILEC have to unbundle packet switching, which would include DSLAMs. All of these conditions do not exist in BellSouth's network, as BellSouth has taken the necessary measures to ensure that ALECs have access to necessary facilities so that BellSouth is not required to unbundle packet switching. Varner, Tr. Vol. 1 at 70-72.[39]

Issue 10: What is the appropriate rate, if any, for customized routing?

*** The appropriate rates for the two methods of selective (or customized) routing offered by BellSouth – the Line Class Code method and the Advanced Intelligent Network ("AIN") method – are set forth in Exhibit 92. ***

[39] Mr. Barta states that the Commission should initiate proceedings if access to any of the unbundled network elements that the FCC removed from its list of elements to be unbundled "proves to be only available at noncompetitive rates, or under unacceptable service quality levels." Barta, Tr. Vol. 20 at 3246. Unfortunately for Mr. Barta, his position does not comport with the FCC'S standard for unbundling network elements, which the FCC adopted in its *Third Report and Order*.

Only BellSouth and AT&T and MCI have even proposed rates for selective (or customized) routing. BellSouth's proposed rates are "just and reasonable" and comply with the 1996 Act and all applicable FCC regulations and should be adopted by the Commission.

Issue 11: What is the appropriate rate, if any, for line conditioning, and in what situations should the rate apply?

*** The Commission should adopt rates for Unbundled Loop Modification ("ULM") services in connection with conditioning an unbundled loop as proposed by BellSouth, including the ULM - Additive. The ULM rates for load coil and bridged tap removal should apply whenever BellSouth performs this work at the request of an ALEC. ***

BellSouth has proposed rates for ULM that are designed to recover the costs that BellSouth will incur when it conditions a loop by removing load coils or bridged tap on behalf of a requesting carrier. BellSouth has proposed three nonrecurring rates for loop conditioning: (1) ULM Load Coil/Equipment Removal – Short; (2) ULM Load Coil/Equipment Removal – Long; and (3) ULM -Bridged Tap Removal. BellSouth's rate proposal distinguishes load coil and equipment removal depending upon the length of the loop in order to differentiate the anticipated work activity for loops less than 18 kft (designated as Short) and loops over 18 kft (designated as Long). Unlike load coil removal, the work involved in removing bridged tap is not dependent on loop length. Latham, Tr. Vol. 13 at 1843-44.[40]

BellSouth also has proposed the ULM - Additive rate, which is designed to recover part of the cost of removing load coils on copper loops of less than 18 kft. All of the parties agree

[40] After the hearing was over, BellSouth adopted a new rate structure for the ULM Load/Coil Equipment Removal – Long. As outlined in a letter dated November 14, 2000 from Nancy Sims of BellSouth to Mrs. Blanca S. Bayo', this new structure reflects an average approach assuming that two long loops will be conditioned per job, which would eliminate the large first cost and very low additional cost embodied in BellSouth's earlier rate structure. With this change, the nonrecurring rate for this element would be reduced from $710.71 (first) and $23.77 (additional) to a single nonrecurring rate of $341.63.

that BellSouth should condition at the same time multiple loops that are less than 18 kft. (although the parties disagree on the number of loops that should be conditioned at the same time, which is an issue discussed below). Since BellSouth assumes that it will remove load coils from such loops for 10 pair at one time on average, and only 1/10 of the cost of load coil removal is reflected in the rate for ULM Load Coil/Equipment Removal - Short, BellSouth's additive approach is a reasonable method of recovering the remaining 90% of the load coil removal costs. Latham, Tr. Vol. 13 at 1845.[41]

In an attempt to avoid paying loop conditioning costs, several parties argue that BellSouth should not be entitled to charge an ALEC when it must remove load coils or bridged tap from a loop because a forward-looking network would not have these elements. While there is no dispute that a forward-looking network being designed today would not include load coils, that does not alter the fact that ALECs are requesting unloaded copper loops from BellSouth's existing network, which contains both load coils and bridged tap. The removal of these elements is a very real on-going cost that BellSouth will incur each and every time that an ALEC requests that BellSouth condition a loop. Caldwell, Tr. Vol. 8 at 1205.

The FCC could not have been more clear that BellSouth is entitled to recover the costs associated with loop conditioning, notwithstanding that load coils and bridged tap may not be included in a "forward-looking" network design. The FCC stated in no uncertain terms that:

[41] In developing the additive, it was assumed that 2 pair will be used by the requesting carrier ordering the ULM Load Coil/Equipment Removal – Short (even though, historically, orders for load coil removal for loops less than 18 kft have been for one loop at a time). Forty percent of the cost for unloading the 10 pair is essentially absorbed by BellSouth, which means that it is assumed that 4 pair of the 10 unloaded pair will be used by BellSouth. The remaining 40% of the total cost of unloading 10 pair is spread across the entire forecast of ADSL-compatible loops, HDSL-compatible loops, and Unbundled Copper Loops – Short and is included in the nonrecurring rate for these elements. Latham, Tr. Vol. 13 at 1846. After the hearing was over, BellSouth uncovered several errors in the development of the ULM – Additive element, which were outlined in a letter dated November 14, 2000 from Nancy Sims of BellSouth to Mrs. Blanca S. Bayo'. Correcting these errors reduces the nonrecurring rate for the ULM – Additive from $57.99 (first) and $57.99 (additional) to $13.09 (first) and $13.09 (additional).

"under our rules, the incumbent should be able to charge for conditioning such loops." *Third Report and Order* ¶ 193. *See also Advanced Services Order* ¶ 82 (concluding that "although loops of 18,000 feet or shorter normally should not require voice-transmission enhancing devices, these devices are sometimes present on such loops and the incumbent LEC should be able to charge for conditioning such loops"). Covad and Rhythms obviously recognize that BellSouth is entitled to recover its costs for loop conditioning; if that were not the case, they would have had no reason to petition seeking reconsideration by the FCC of this issue. Exhibit 92.

There is no merit to Ms. Murray's claim that "the incumbent's recurring costs and charges for unbundled loops will completely capture the forward-looking costs for providing loops free of load coils, excessive bridged tap and other devices." First, as Ms. Caldwell testified, this is simply not the case, and, while the loop portion of BellSouth's cost study provides costs for loops free of load coils and bridged tap, it does not include costs for removing them. Caldwell, Tr. Vol. 8 at 1205. Second, Ms. Murray's "economic" interpretation of the FCC's rules is flatly inconsistent with the views of her clients, who have stated publicly that "[t]he FCC has foreclosed state commissions from concluding that the TELRIC recurring monthly loop rate, which is based on the forward-looking network design that has no electronic impedances already compensates incumbent LECs fully for the removal of such devices." Murray, Tr. Vol. 17 at 2653-54.

Equally without merit is Mr. Riolo's allegation that BellSouth provides loop conditioning at no charge for BellSouth's retail ADSL service. BellSouth offers two distinct ADSL services, Industrial Class and Business Class. The Industrial Class service was intended for the residential market, and BellSouth will not condition a loop in order to make the service work for that

customer unless BellSouth mistakenly told the customer that the loop would meet ADSL parameters when in fact it could not. For Business Class service, BellSouth will condition the loop in an attempt to make it compliant with ADSL standards, but the costs of that conditioning effort is reflected in the cost study for BellSouth's ADSL service and allocated to all Business Class ADSL loops. Caldwell, Tr. Vol. 8 at 1206.

Various parties question BellSouth's assumption that it will remove load coils and other equipment from loops less than 18 kft for ten pair at one time on average. BellSouth developed this assumption based upon BellSouth's own experiences and practices in administering its network. This same assumption is incorporated into the cost studies for BellSouth's own tariffed Business Class ADSL service, which assume that BellSouth will remove load coils and related equipment from loops less than 18 kft for 10 pair at one time on average. Incorporating the same 10-pair load coil removal assumption in both its ADSL and UNE cost studies ensures consistency. Latham, Tr. Vol. 13 at 1844.

Furthermore, there are a number of technical reasons for not unloading 50 or even 25 pairs at one time, as proposed by the Data LECs and Sprint, respectively. First, load coils are commonly used to improve voice grade transmission for copper loops longer than 18 kft, and BellSouth has installed load coils on loops less than 18 kft in order to reduce the attenuation loss and improve the attenuation distortion. It is for this reason that in metropolitan areas many loops as short as 12 kft are loaded in order to improve the transmission characteristics for Centrex lines and for PBX trunks. Second, the churn in Outside Plant Engineering ("OSPE") facilities has spread working loop feeder pairs throughout the entire complement of available pairs. In other words, there are few "clean" loop feeder cable pair counts (01 to 50 or 75 to 100, for example)

that are all spare and that can have load coils removed from all pairs at one time without adversely affecting service. Greer, Tr. Vol. 11 at 1691-92.

Third, because BellSouth's loops are used to provide both POTS and special services, many of BellSouth's loops are used for designed circuits. The design process specifically accounts for the fact that the loop has load coils in order to meet transmission requirements. Simply removing the load coils would adversely affect the customer unless the loop is redesigned and re-engineered to account for the lack of load coils or unless the end user's service is moved to another similarly loaded loop. In some cases, the end user will perceive a reduction in the quality of service after the load coils are removed, while in other cases, the loop would not function at all if the load coils were simply removed. In short, removing load coils from loops designed to take the load coil into account for proper transmission performance is problematic when the customer is being served by that loop. *Id.* at 1689-90; Riolo, Tr. Vol. 17 at 2816.

Fourth, feeder pairs must be uniform, which makes it infeasible to unload 50 or even 25 pairs at one time. At any given crossbox, there are only three possible loop provisioning scenarios: (1) all loops are served entirely over copper; (2) all loops are served by DLC or; (3) some loops are served by copper and some loops are served by DLC. Because all loop feeder pairs in a given crossbox must be capable of serving any loop distribution pair in that crossbox, the entire feeder compliment must be loaded if the design of the distribution area requires loaded pairs (e.g., the longest loop served by that crossbox will be longer than 18 kft.). Greer, Vol. 11 at 1691.

The argument that BellSouth should unload 25 or 50 pair at one time (as opposed to the 10 pair assumption in BellSouth's cost studies) should be seen for what it is – an attempt by BellSouth's competitors to reduce artificially the loop conditioning costs they must pay. The

Data LECs' proposal that loop conditioning costs be calculated based on the assumption that 50 pair will be conditioned at one time obviously reduces the loop conditioning costs on a per pair basis. However, under the Data LECs' proposal, BellSouth would have to absorb the vast majority of those costs:

> Q. ... But assume the commission says BellSouth is entitled to recover the cost of loop conditioning and going to my question where BellSouth has conditioned 25 pair, only 1 pair is requested by Covad, how is BellSouth to recover the loop conditioning costs caused by the other 24 pair?
>
> A. That would be in my view an obligation on the part of BellSouth as part of its normal maintenance procedures.
>
> . . .
>
> Q. ... My question is is that an expense that you believe ought to be borne by BellSouth's retail customer. That's a yes-or-no question.
>
> A. Yes. To the extent that BellSouth has foisted upon its customers the cost of that load coil initially that should not have been there, they are now obligated to take that load coil off. So they have costed, if that's a word, they have caused their customers to pay for something that should not have been there to begin with.

Riolo, Tr. Vol. 18 at 2899-00. So, while the Data LECs propose that loop conditioning costs be calculated based on multiple loops being conditioned at one time, they only want to pay a very small part of the actual loop conditioning costs. The Data LECs' proposal is unreasonable and should be rejected by the Commission.[42]

[42] In Mr. Riolo's view, having load coils on loops less than 18 kft is a "design defect" "that was against practice." Riolo, Tr. Vol. 17 at 2812-13. However, Mr. Riolo's testimony is not supported by the written practices themselves upon which he relies. For example, the network practice in effect when Mr. Riolo was an auditor for the AT&T system – AT&T Practice 902-115-101 dated March 1965 – establishes no design parameters for loops less than 18 kft and did not specifically obligate an incumbent to remove load coils as part of routine maintenance or repair. Exhibit 149; Riolo, Tr. Vol. 18 at 2888. Mr. Riolo's testimony also is inconsistent as to the circumstances when BellSouth was purportedly required to remove load coils on loops less than 18 kft, opining at one point that BellSouth was obligated to do so only when "the plant is being modified or rearranged, installed, added to, whatever." *Id.* at 2824. At another point, however, Mr. Riolo testified that "BellSouth should have been removing all of these load coils from its embedded plant" beginning in April 1983. *Id.* at 2890-91. Finally, while insisting that Bell Atlantic does not charge ALECs for load coil removal because Bell Atlantic admitted "that it is a design defect and does not follow practice," Riolo, Tr. Vol. 17 at 2826, Mr. Riolo conceded under cross examination that Bell Atlantic has never made any such admission. Riolo, Tr. Vol. 18 at 2869-70.

Sprint witness McMahon takes issue with certain assumptions underlying BellSouth's loop conditioning cost studies. For example, he claims that the assumption that 2.1 load coils would exist is inconsistent with standard outside plant ("OSP") engineering rules. Mr. McMahon is mistaken. OSP engineering rules allow the distance from the load coil to the end user to be as little as 0.1 kft (that is, 100 feet) if 3 kft of bridged tap is present at that point on the loop. Furthermore, because the network is designed and constructed assuming a "worst case" regarding loop length within a serving area, a third load coil may be required on feeder pairs within 18 kft of the central office to serve customers who are located 21 kft from the central office. Thus, it is not unusual to have customers within 18 kft of the central office using loops that have three load coils so that other customers beyond 18 kft from the central office, who are served over that same complement of loop facilities, will also enjoy proper transmission performance. BellSouth's assumption that, for loaded loops less than 18 kft, 90% of the time it will have two load coils and 10% of the time it will have three load coils is reasonable. Greer, Tr. Vol. 11 at 1692-93.

Mr. McMahon also questions the travel time assumed in BellSouth's loop conditioning cost studies, relying upon assumptions in Sprint's cost model (that Sprint has since withdrawn). BellSouth assumes 30 minutes for travel time associated with loop conditioning regardless of loop length, which compares with 20 minutes of travel time for xDSL compatible loops and SL1 and SL2 loops. The loop conditioning work is performed by BellSouth's outside plant construction forces, while unbundled loops are installed by BellSouth's Installation and Maintenance (I&M) or Special Services Installation and Maintenance (SSI&M) groups working in conjunction with BellSouth's central office work group. Because there are generally fewer outside plant construction groups than I&M or SSI&M groups in a particular geographic area,

outside plant construction groups have to travel greater distances, which explains the difference in travel times. Greer, Tr. Vol. 11 at 1693-94.

Travel times also are influenced by many factors such as traffic congestion, weather, and the distance one has to travel to the site in question. BellSouth serves many of the metropolitan areas in Florida such as Jacksonville, Orlando, Fort Lauderdale and Miami, where xDSL competition has materialized first. Thus, BellSouth's proposed travel times recognize its experience in serving such large areas, which cannot be said about the travel times proposed by Mr. McMahon. *Id.* at 1694.

Mr. McMahon also takes issue with BellSouth's assumption that load coil removal involves 90% underground and 10% aerial/buried plant distribution. The rationale for this assumption is that, in larger metropolitan wire centers, the plant is predominantly built underground in the area closest to the central office. Although smaller, rural central offices (that is, central offices not in metropolitan areas) do use aerial or buried facilities directly from the central office, competition has not yet materialized in the rural areas of Florida. As a result, most of the work involved in conditioning loops will occur in metropolitan settings and will involve predominantly underground facilities. Certainly that has been BellSouth's experience to date. Greer, Tr. Vol. 11 at 1695-96.[43]

Coalition witness McPeak proposes numerous adjustments to the work times associated with loop conditioning, none of which is valid. Mr. McPeak offers nothing but his own

[43] In those instances where there are only two load coils, which is ninety percent (90%) of the time, both load coils will fall within 9 kft of the central office and will, generally, be placed in underground facilities. Even if there is a third load coil located within 15 kft of the central office, this load coil will likely be placed, as well, in underground facilities in metropolitan settings. Similarly, with respect to bridged tap, BellSouth assumes that an average of three bridged taps will be removed, one of which would be in the underground facilities. Here again, this assumption correctly recognizes that competition for xDSL services in BellSouth's region has occurred in metropolitan areas where the use of underground facilities is the norm rather than the exception. Greer, Tr. Vol. 11 at 1693-96.

unsubstantiated opinion to support drastic reductions to the times BellSouth has assumed. A good example to illustrate the unreasonableness of Mr. McPeak's approach concerns outside plant construction. Mr. McPeak assumes that load coils can be removed from 25 pair in slightly more than two hours. However, as evidenced by the videotape shown at the hearing, the work activities involved in removing load coils are complex and time consuming. To condition a loop, a BellSouth technician must travel to the work location, set up work area protection, pump and ventilate the manhole, buffer the cable and set up the splice, open the splice case, identify the pairs, perform the necessary operations to condition the loop, close the case, rack the cables, pressure test the cables, and close down the work area. When two or more locations are involved, these steps are repeated. To think that all of this work can be accomplished in the short period of time proposed by Mr. McPeak is unrealistic. This is clear from the fact that Mr. McPeak's assumed work times are even well below those proposed by Mr. Riolo. Greer, Tr. Vol. 11 at 1705-06.

Issue 12: **Without deciding the situations in which such combinations are required, what are the appropriate recurring and non-recurring rates for the following UNE combinations:**

"UNE platform" consisting of: loop (all), local (including packet switching, where required) switching (with signaling), and dedicated and shared transport (through and including local termination);

"extended links," consisting of:

(1) loop, DSO/1 multiplexing, DS1 interoffice transport;
(2) DS1 loop, DS1 interoffice transport;
(3) DS1 loop, DS1/3 multiplexing, DS3 interoffice transport.

*** The appropriate recurring and nonrecurring rates for combinations of network elements are set forth in Exhibit 92. ***

The Commission should adopt the rates BellSouth proposes for combinations of network elements that are currently combined in BellSouth's network. BellSouth's proposed rates are "just and reasonable" and comply with the 1996 Act and all applicable FCC regulations.

As recently confirmed by the Eighth Circuit, the 1996 Act does not obligate BellSouth to combine unbundled network elements on behalf of a requesting carrier. *See Iowa Utils. Bd. v. FCC*, 219 F.3d at 754. Nevertheless, BellSouth has proposed rates for new combinations of network elements that comprise the so-called Enhanced Extended Link ("EEL"), which BellSouth must make available in order to receive the exemption from unbundling local switching in accordance with the FCC's Rule 51.319. Specifically, BellSouth proposes rates for providing new EEL combinations where BellSouth avails itself of the exemption from providing unbundled local switching to customers with four or more lines in density zone 1 in the top 50 metropolitan statistical areas ("MSAs"). The specific MSAs in Florida where BellSouth will offer new EEL combinations are Miami, Orlando, and Fort Lauderdale. Areas served by BellSouth in density zone 1 in the top 50 MSAs are the only locations where BellSouth is required to combine network elements at cost-based rates. Varner, Tr. Vol. 1 at 64

Issue 13: When should the recurring and non-recurring rates and charges take effect?

*** The recurring and nonrecurring rates and charges established in this proceeding should take effect after the Commission issues an effective order and after existing interconnection agreements are properly amended to incorporate the ordered rates. ***

This issue does not appear to be a source of significant dispute between the parties. No party apparently disputes that the rates BellSouth charges ALECs for various unbundled network elements are governed by the parties' approved interconnection agreement. Once the

Commission issues an effective order establishing rates, they will be incorporated into BellSouth's interconnection agreements and thereby "take effect." Varner, Tr. Vol.1 at 64-65.

FCTA witness Barta states that BellSouth should be provided time to conform its billing and administrative systems to any decision rendered by the Commission establishing rates in this proceeding and suggests that a reasonable period of time for these rates to take effect is "30 to 90 days after the Commission issues its Order." While BellSouth agrees that some amount of time will be required to conform its billing and administrative systems to implement the rates established in this proceeding, a specific amount of time (e.g. 30 to 90 days) should not govern when the rates become effective. The rates and charges established in this proceeding should take effect when existing interconnection agreements are properly amended to incorporate the ordered rates, whether that is 30 days, 60 days or longer. Varner, Tr. Vol. 1 at 77-78.

III. CONCLUSION

For the foregoing reasons, the Commission should resolve each issue in this proceeding consistent with the positions advocated by BellSouth.

Respectfully submitted this 21st day of November, 2000.

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