

BEFORE  
THE PUBLIC SERVICE COMMISSION OF  
SOUTH CAROLINA  
DOCKET NO. 97-374-C - ORDER NO. 98-214

JUNE 1, 1998

IN RE: Proceeding to Review BellSouth	)	ORDER
Telecommunications, Inc.'s Cost Studies for	)	RULING
Unbundled Network Elements.	)	ON COSTS

**I. INTRODUCTION**

In Order No. 97-712, the Public Service Commission of South Carolina (the "Commission") established this generic docket for the purpose of establishing rates for unbundled network elements, interconnections services, and collocation offered by BellSouth Telecommunications, Inc. ("BellSouth") under the Telecommunications Act of 1996 ("1996 Act").

Section 251(c) of the 1996 Act imposes certain obligations on incumbent local exchange carriers ("ILECs"), such as BellSouth. These include the obligation to provide: (1) interconnection with the ILEC's network; (2) access to unbundled elements of the ILEC's network, and (3) collocated space in the ILEC's premises (where available) where a competitive local exchange carrier ("CLEC") can locate its equipment.

The pricing rules for interconnection and unbundled network elements are contained in Section 252 (d) of the 1996 Act. Section 252 (d) does not mandate any specific pricing methodology. Rather, it requires that prices be “just and reasonable,” which necessitates that prices be “based on cost” and be “nondiscriminatory.” Section 252 (d)(1)(B) also provides that prices “may include a reasonable profit.”

A public hearing in this docket was held in the Commission’s hearing room, beginning on December 1, 1997 and continuing on December 15, 1997, with the Honorable Guy Butler, presiding. BellSouth was represented by Caroline Watson, Esquire, William F. Austin, Esquire, R. Douglas Lackey, Esquire, Bennett L. Ross, Esquire, and T. Michael Twomey, Esquire. BellSouth presented the testimony of Alphonso Varner, D. Daonne Caldwell and William P. Zarakas, Wayne Gray, David Garfield, Walter Reid, Eno Landry, Dorissa Redmond, Ellis Smith, Dr. William Taylor, David Cunningham, and Dr. Randall Billingsley. Testimony was also presented by Jamshed K. Madan, Michael D. Dirmeir, and David C. Newton. These three testified as a panel and they are hereinafter collectively referred to as "Georgetown Consulting Group.”

AT&T Communications of the Southern States, Inc. (“AT&T”) was represented by Francis P. Mood, Esquire, Steve A. Matthews, Esquire, Jim Lamoureux, Esquire, Stephen Ruscus, Esquire, Jeff Miller, Esquire, and Laureen Seeger, Esquire. AT&T presented the testimony of Wayne Ellison, Don Wood, Ernest Carter, James W. Wells,

Jr., Richard Cabe, Catherine Petzinger, Patricia McFarland, James W. Currin, Dr. John Hirshleifer, Richard J. Walsh, and Gerald Crockett. MCI Telecommunications Corporation (“MCI”) was represented by John Hoefer, Esquire and Martha McMillin, Esquire. MCI and AT&T jointly presented the testimony of Thomas Hyde. Sprint Communications Company, L.P. was represented by William R. Atkinson, Esquire and Darra W. Cothran, Esquire. Sprint presented no witnesses. The South Carolina Cable Television Association (“SCCTA”) was represented by B. Craig Collins, Esquire. SCCTA presented the testimony of Patricia Kravtin. The Consumer Advocate was represented by Elliott F. Elam, Jr., Esquire. The Consumer Advocate presented the testimony of Allen G. Buckalew and Dr. John B. Legler. United Telephone Company of the Carolina (“United”) was represented by James Wright, Esquire and Richard Whitt, Esquire. United presented no witnesses. ACSI was represented by Russell B. Shetterly, Jr., Esquire. ACSI presented the testimony of Dr. Marvin Kahn and William Stipe, who adopted James C. Falvey’s testimony. The South Carolina Public Communications Association (“SCPCA”) was represented by John F. Beach, Esquire and John Pringle, Esquire. SCPCA presented no witnesses. The Commission’s Staff was represented by F. David Butler, General Counsel. The Staff presented no witnesses.

## **II. SUMMARY OF COMMISSION’S FINDINGS**

The purpose of this docket is to establish BellSouth’s rates for interconnection, unbundled network elements, and collocation as required by the 1996 Act. The need for interconnection, unbundling, and collocation results from the decision to open the local

telecommunications markets to competition. In order to facilitate the transition to local competition, the 1996 Act establishes several means by which a Competitive Local Exchange Carrier can make use of BellSouth's network in order to provide local telephone service. First, a CLEC can elect to purchase BellSouth's services at wholesale rates and resell them at retail.<sup>1</sup> Second, a CLEC can purchase unbundled network elements from BellSouth and combine them with its own network elements or with other elements purchased from BellSouth in order to provide service. Finally, a CLEC can build its own facilities-based network and interconnect with BellSouth's network.

This Commission's task is to fix and approve appropriate prices to strike the right balance. The parties have submitted different price proposals in this proceeding, which is the result of fundamentally different approaches in this case. The Commission finds that BellSouth's prices should be based upon BellSouth's existing network configuration recalculated to reflect forward-looking costs, as modified by certain proposals of the Commission Staff, and described below. Accordingly, the Commission hereby adopts this general approach in setting BellSouth's proposed prices for interconnection and

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<sup>1</sup> The Commission set the wholesale rate for these resold services in Docket No. 96-358-C, in which it directed BellSouth to provide services for resale (both recurring and nonrecurring) to AT&T at a discount of 14.8% off the current tariffed retail rates for business and residence services.

unbundled network elements. Our approach to setting prices for collocation differs somewhat, as shall be described below.

A. BellSouth's Cost Studies

BellSouth has submitted detailed cost studies that document the costs it estimates that it will actually incur to provide network elements, interconnection, and collocation on a forward-looking basis. In preparing its studies, BellSouth has considered the network it has in place, but has attempted to modify it as appropriate to reflect least cost technology on a going forward basis. BellSouth performed Total Element Long Run Incremental Cost ("TELRIC") studies for the following elements and services: (1) unbundled local loops; (2) unbundled local and tandem switching capabilities and local interconnection; (3) unbundled transport (interoffice and local channels, including shared transport and dedicated interoffice facilities) and local interconnection; (4) signaling network (common channel signaling – CCS7); (5) call-related databases and service management systems; (6) operations support systems functions; (7) operator functions; (8) directory assistance; (9) selective routing; (10) physical and virtual collocation; (11) service provider number portability (interim solutions); (12) dark fiber; (13) access to poles, ducts conduit and rights-of-way; and (14) advanced intelligent network services. Tr., Vol. 3, Zarakas and Caldwell at 46.

As explained by Ms. Caldwell and Mr. Zarakas, BellSouth conducted its studies consistent with the principles in the 1996 Act.<sup>2</sup> Tr., Vol. 3, Zarakas and Caldwell at 53-

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<sup>2</sup> On August 8, 1996, the FCC issued its Final Report and Order 96-325 to establish rules for the implementation of 47 U.S.C. §§ 251 and 252 of the Telecommunications Act of 1996. The FCC took the

55. According to the BellSouth witnesses, BellSouth's costs studies were South Carolina specific, forward-looking, and based on the long run costs that BellSouth would expect to incur in providing interconnection and network elements using the least cost, most efficient technology currently available. (Id. at 100-103). BellSouth assumed the existence of its current wire centers and parts of its infrastructure, based on the very reasonable and common-sense notion that new telephone cables will be laid along the same roads and in the same rights-of-way as the current facilities are located, but otherwise assumed the implementation of new technology. Tr., Vol. 3, Caldwell at 68-70, Zarakas at 110-111.

BellSouth modeled the network elements and used inputs from: (1) the switching Cost Information System ("SCIS") model developed by Bell Communications Research, Inc. ("BellCore") to establish switching costs; (2) various specialized price calculators; (3) a statistically valid sample of loops within the state; and (4) subject matter experts with extensive expertise and knowledge about telecommunications in general and BellSouth's operations in particular. Tr., Vol. 3, Zarakas and Caldwell at 63-68. The inputs from the various sources were used by BellSouth's TELRIC calculator to compute the cost of the elements and services at issue. BellSouth divided its costs into recurring and nonrecurring costs and took steps to ensure that, to the extent possible, costs were allocated consistent with cost causation principles.

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position that states were not competent to handle the pricing issues that Congress delegated to the states in Section 252 (d) of the Telecommunications Act; the FCC maintained that it had the authority and the obligation to dictate to the states how to handle pricing to interconnection and unbundled network elements. The United States Court of Appeals for the Eighth Circuit concluded otherwise and vacated the FCC's pricing rules. Iowa Utilities Board, et. al. v. Federal Communications Commission, 120 F.3d 753 (8<sup>th</sup> Cir. 1997).

Even so, as is detailed below, we believe that certain modifications in BellSouth's TELRIC methodology as proposed by the Consumer Advocate and adopted by the Commission Staff are necessary in order to reflect BellSouth's true forward-looking costs and develop appropriate prices for UNE's, interconnection, and collocation.

B. Intervenors' Cost Studies

Intervenors, have submitted cost studies that do not use BellSouth's existing network as a basis. In particular, the Hatfield Model advocated by AT&T and MCI assumes existing wire centers but otherwise designs a new network. This newly designed network is a purely hypothetical network belonging to a purely hypothetical carrier. The Hatfield network will never actually exist. Rather, it will be used solely to determine the price for a limited number of network elements, which the Commission finds is unreasonable for the prices to be determined in this Docket.

**III. SUMMARY OF TESTIMONY**

Alphonso J. Varner:

BellSouth presented the testimony of Alphonso J. Varner, Senior Director for State Regulatory for BellSouth. Mr. Varner described and discussed the rates that BellSouth proposes for unbundled network elements and interconnection offered to CLECs. BellSouth's proposed rates for unbundled network elements and interconnection in South Carolina are based on TELRIC, including shared costs, and include cost components for common and, in some instances, historical costs. He also explained why BellSouth's approach to setting these rates is appropriate. According to Mr. Varner, because the 1996 Act does not prescribe any standard for the pricing of elements and

services and because the FCC's rules regarding such pricing were vacated by the Eighth Circuit, states have sole jurisdiction for establishing prices for unbundled network elements and interconnection. Specifically, witness Varner emphasized that rates are just and reasonable only if BellSouth is allowed to recover its actual costs in providing unbundled network elements and interconnection. Historical, common, and shared costs are legitimate costs that must be included in the determination of actual costs. According to Varner, if BellSouth is unable to recover such costs, BellSouth's end users, particularly residential customers, will be harmed while competitors are being subsidized through below cost prices.

In addition, Mr. Varner discussed how current rates would be changed upon the effectiveness of these new rates. Furthermore, Mr. Varner described how the rates would foster the development of local competition.

Mr. Varner's rebuttal testimony updated the Rate and Cost Analysis (Exhibit AJV-2 of Mr. Varner's direct testimony) and addressed the direct testimony filed by many of the other parties' witnesses. Specifically, Mr. Varner attempted to refute certain positions and assertions of the intervenors' testimony concerning, but not limited to 1) the appropriate pricing standard for elements and services; 2) combinations of network elements; 3) deaveraged loop prices; 4) recovery of operations support systems ("OSS") costs; and 5) the quality of loops provided.

William P. Zarakas and D. Daonne Caldwell:

BellSouth presented the testimony of William P. Zarakas and D. Daonne Caldwell. Mr. Zarakas is Managing Director with the management consulting firm of

Theodore Barry & Associates (“TB&A”), which BellSouth retained to review and participate in the development of BellSouth’s cost studies. Ms. Caldwell is Acting Director of the Finance Department of BellSouth. Mr. Zarakas and Ms. Caldwell discussed and described the methodology employed by BellSouth to determine the cost of unbundled network elements, interconnection, and collocation and the results generated by the use of that methodology. Specifically, Mr. Zarakas discussed the cost study process and explained the steps taken in the development of costs, including the sources of input data and the models used to derive the outputs.

Ms. Caldwell presented the TELRIC studies that BellSouth filed in this docket. In addition, Ms. Caldwell elaborated on various aspects of BellSouth’s cost studies and used the development of the cost of providing an unbundled 2-wire analog loop to illustrate various steps in BellSouth’s cost studies. Ms. Caldwell stated that the ultimate objective of BellSouth’s cost studies was to develop complete, accurate and understandable costs for each of the elements and services presented to the Commission. In addition, she testified that BellSouth’s cost studies developed “economic costs,” reflecting TELRIC plus consideration of common costs, consistent with the FCC’s Order 96-325. Ms. Caldwell also described the calculation of the Residual Recovery Requirement for loops and ports which reflect the difference between the forward-looking network contained in the studies and the actual network that BellSouth will use to provide service to CLECs.

Mr. Zarakas testified that based upon TB&A's review of and participation in BellSouth's cost study process, TB&A concluded that the cost studies presented by BellSouth represent reliable results that are representative of the economic costs associated with providing South Carolina-specific elements and services. He also stated that BellSouth followed the appropriate guidelines for developing these costs studies and has made each step of its cost study process open to the Commission for review. Moreover, Mr. Zarakas testified that BellSouth has created an open model whose inputs are supportable and traceable. Furthermore, according to Mr. Zarakas, BellSouth's cost studies use a long-run approach to developing costs, applying a forward-looking and efficient network as the basis for cost development.

Mr. Zarakas' and Ms. Caldwell's rebuttal testimony attempted to rebut the testimony of various witnesses for ACSI, AT&T, MCI, and the South Carolina Consumer Advocate. In addition, BellSouth provided revisions to its cost studies with Mr. Zarakas' and Ms. Caldwell's rebuttal testimony.

Wayne Gray:

BellSouth presented the testimony of Wayne Gray, BellSouth's Director of Infrastructure Planning for the states of South Carolina, North Carolina, Tennessee, Kentucky and Georgia. Mr. Gray described the network design used as the infrastructure basis in BellSouth's cost studies, defined certain complex technical terminology, and provided the basis for the use of that technology. Mr. Gray stated that the design of the infrastructure and the assumptions relating to the network design utilized by BellSouth are founded on well-accepted industry standards. According to Gray, the assumptions

and methodology are consistent with the requirements of the FCC order and provide the most efficient technology available for the provision of a reliable narrowband telecommunications network.

David Garfield:

BellSouth presented the testimony of David Garfield, an engineer in the Business Consulting Services Business United of Bell Communications Research, Inc. (“BellCore”). Mr. Garfield provided an overview of BellCore’s Switching Cost Information System (“SCIS”) that BellSouth utilized in its cost studies. Mr. Garfield described what SCIS does, who uses it and how it was developed. Based upon his opinion that SCIS is objective, forward looking, takes a long-term perspective, and its results are based on usage and are competitively neutral, Mr. Garfield concluded that SCIS is the most appropriate tool for computing switching costs in BellSouth’s studies.

Mr. Garfield’s rebuttal testimony responded to several issues included in the testimony of AT&T witness Catherine Petzinger.

Walter Reid:

BellSouth presented the testimony of Walter S. Reid, Senior Director for the Finance Department of BellSouth. Mr. Reid’s direct testimony addressed the appropriate methodology for including forward-looking shared and common costs in BellSouth’s TELRIC studies. Mr. Reid noted the FCC’s conclusion, in describing its TELRIC methodology, that: “...incumbent LEC’s prices for interconnection and unbundled network elements shall recover the forward-looking costs directly attributable to the specified element, as well as a reasonable allocation of forward-looking common

costs....” Order 96-325 ¶ 682. According to Mr. Reid, the FCC further noted that “[d]irectly attributable forward-looking costs shared facilities and operations.” Id. Mr. Reid presented an approach for attributing BellSouth’s shared and common costs to the various elements and services in accordance with the principles of the TELRIC methodology. In addition, Mr. Reid stated that BellSouth’s approach consists of a study which develops appropriate shared and common costs for use in TELRIC rate calculations.

Mr. Reid’s rebuttal testimony responded to the comments of other parties in this proceeding regarding the appropriate methodology for including forward-looking shared and common costs in BellSouth’s TELRIC studies.

G. David Cunningham:

BellSouth presented the rebuttal testimony of G. David Cunningham, Director in the Finance Department of BellSouth. Mr. Cunningham responded to the direct testimonies of James W. Currin, Marvin H. Kahn, and Allen G. Buckalew regarding the economic lives used in BellSouth’s cost studies. In doing so, he attempted to demonstrate the appropriateness of the depreciation of lives developed by BellSouth’s Depreciation organization and provided for the use in the cost studies.

Thomas Hyde:

MCI and AT&T presented the testimony of Thomas Hyde, a consultant providing services to MCI. Mr. Hyde discussed concerns with BellSouth’s nonrecurring cost study and proposed nonrecurring rates, BellSouth’s recurring and nonrecurring charges for certain collocation elements, and BellSouth’s proposal for OSS cost recovery.

Allen G. Buckalew:

The South Carolina Consumer Advocate presented the testimony of Allen G. Buckalew, an economist specializing in the telecommunications industry at J.W. Wilson & Associates, Inc. Mr. Buckalew presented four issues. The first three issues, all of which related to the cost study, concerned depreciation, fill factors or utilization, and common costs. The other issue discussed by Buckalew was the Residual Recovery Requirement.

Patricia McFarland:

AT&T presented the testimony of Patricia McFarland, a manager in AT&T's Regulatory Chief Financial Officer organization. Ms. McFarland provided an evaluation of certain cost factors and labor rates applied in the calculation of TELRIC rates in BellSouth's cost studies. In addition, she recommended certain adjustments to the following calculations in BellSouth's cost studies, including: 1) the common cost, shared cost, and shared labor rate factors produced in the shared and common cost model; 2) TELRIC labor rates; and, 3) other loading factors. Ms. McFarland also attempted to rebut certain statements reflected in the direct testimony of BellSouth witness Walter S. Reid.

James W. Currin:

AT&T presented the testimony of James W. Currin, a Senior Consultant with the economic consulting firm of Snavely, King, Majores, O'Connor & Lee, Inc. Mr. Currin expressed his opinion as to the consistency of the plant lives used in the TELRIC calculation with the FCC's rules for the pricing of unbundled network elements. He

responded to the lives proposed by BellSouth in its cost model. Mr. Currin also compared BellSouth's proposed "economic" lives, which are the same lives BellSouth proposed for the technology accounts in its 1995 Depreciation Study, to the FCC's and the Commission's approved lives. To determine the validity of BellSouth's depreciation studies projections, Mr. Currin compared BellSouth's actual investment activity to its depreciation studies projections that were presented to support its proposed lives.

John I. Hirshleifer:

AT&T presented the testimony of John I. Hirshleifer, Vice President and Director of Research at FinEcon. FinEcon is a firm which provides financial economic consulting services to corporations, law firms and government agencies. Mr. Hirshleifer's testimony concerned his estimation of the forward-looking economic cost of capital that should be used in determining the forward-looking cost for BellSouth of providing UNEs to retail providers of local telephone service (including the provision of such network elements by BellSouth to its own retail operation). He stated that the midpoint of his cost of capital range for BellSouth is 9.43%.

In addition, Mr. Hirshleifer discussed the fundamental relationship between risk and the cost of capital in light of both financial theory and widely-cited court decisions. He also addressed the cost of debt that should be employed. Furthermore, he developed several approaches to estimating the cost of equity capital. He then discussed the question of determining the appropriate capital structure to use when calculating the weighted average cost of capital. Finally, he discussed why the cost of capital that he calculated for BellSouth based on the public data available at the holding company level

is likely to overstate the relevant cost of capital for the provision of network elements and services.

Don J. Wood:

AT&T presented the testimony of Don J. Wood, a consultant. Mr. Wood sponsored the Hatfield Model and outlined the basis for his recommendation that the Commission should adopt the Hatfield Model in this proceeding. Mr. Wood also responded to the direct testimony of BellSouth witnesses William P. Zarakas and D. Daonne Caldwell, Wayne Gray, and Walter S. Reid. In addition, he provided the Commission with an analysis and recommendation regarding the requisite standards under Sections 251 and 252 of the Telecommunications Act of 1996 for the development of competitive markets in South Carolina. He also described the result of his review of the cost studies presented by BellSouth, including the models and underlying methodology used in those studies. Furthermore, he compared the characteristics of the Hatfield Model and the BellSouth cost studies so that the relative merits of the individual models, and the rate proposals based on the results of those models, could be ascertained.

Richard Cabe:

AT&T presented the testimony of Richard Cabe, an economist, relating to the proper pricing of interconnection, collocation and network elements as required by the 1996 Act. He concluded that the proper pricing standard for interconnection, collocation and network elements is TELRIC plus a reasonable contribution to forward-looking common costs. He recommended the adoption of the Hatfield Model and the

AT&T/MCI Nonrecurring Cost Model as the best methods for applying the TELRIC pricing standard to cost estimation for network elements and services.

Patricia D. Kravtin:

The SCCTA presented the testimony of Patricia D. Kravtin, Senior Vice-President of Economics and Technology, Inc. Ms. Kravtin addressed BellSouth's proposal as it relates to providing a CLEC with access to pole attachments and other rights-of-way. Ms. Kravtin urged the Commission to reject BellSouth's determination of pole attachment costs, stating that such costs should be calculated in accordance with the FCC's formula. Ms. Kravtin proposed that the rates for access to poles, ducts, and conduit be established in accordance with the FCC formula, which is consistent with BellSouth's proposal.

Richard J. Walsh:

AT&T presented the testimony of Richard J. Walsh, a consultant to AT&T as a Technical Analysts in the Local Connectivity Costing and Pricing District of AT&T's Local Services Division. Mr. Walsh explained the technical assumptions that were used to develop the AT&T and MCI NonRecurring Cost Model. In addition, he addressed certain deficiencies in BellSouth's nonrecurring cost studies. Finally, Mr. Walsh outlined what he believed to be the advantages of the AT&T and MCI approach for modeling BellSouth's nonrecurring costs.

James W. Wells, Jr.:

AT&T presented the testimony of James W. Wells, Jr., Direct Manager – Outside Plant Cost Engineering in the Cost/Technical Analysis and Advocacy Division of the

Local Services Division of AT&T. Mr. Wells described the Outside Plant inputs to the local loop portion of the Hatfield Model. He also offered an analysis of and recommendations to the outside plant assumptions in BellSouth's cost studies. In addition, he attempted to rebut the testimony of Gray, Caldwell, and Zarakas.

Ernest M. Carter:

AT&T presented the testimony of Ernest M. Carter, a telecommunications engineering consultant, who disagreed with the Digital Loop Carrier ("DLC") technology used by BellSouth in its TELRIC cost study. Mr. Carter explained the role of DLC systems in provisioning the local loop and outlined the benefits of Integrated DLC technology. Mr. Carter also recommended that, if the Commission does adopt BellSouth's cost studies, it should change certain inputs that he described as inappropriate, including, for example, the fill factor for copper feeder.

C. William Stipe:

ACSI presented the testimony of C. William Stipe, Vice-President for Switch Engineering at ACSI. Mr. Stipe adopted the prefiled testimony of James Falvey, Vice-President of Regulatory Affairs at ACSI. Mr. Stipe explained what types of unbundled loops ACSI is interested in obtaining from BellSouth and criticized BellSouth's loop proposal.

Marvin H. Kahn:

ACSI presented the testimony of Marvin H. Kahn, a Senior Economist, who discussed his analysis of the BellSouth cost studies and the direct testimony of BellSouth's witnesses supporting the studies. He focused on the pricing methodology for

interconnection and network elements discussed in the testimony of Mr. Varner and the costing methodology discussed primarily in the panel testimony of Mr. Zarakas and Ms. Caldwell. Dr. Kahn's quantitative analysis of the costing model focused primarily on the loop. Dr. Kahn also recommended certain adjustments to the BellSouth cost studies. In addition, he addressed the consistency of BellSouth's proposal to establish rates and its cost studies with accepted economic and regulatory principles and the 1996 Act.

Wayne Ellison:

AT&T presented the testimony of Wayne Ellison, a District Manager in the Law and Government Affairs organization at AT&T. Mr. Ellison provided a critique of BellSouth's cost studies and its proposed rates. He also stated that consumers will be denied the benefits of competition unless BellSouth's rates are cost-based. Finally, he presented and described the basis for AT&T's proposed rates.

Gerald B. Crockett:

AT&T presented the testimony of Gerald B. Crockett, an expert in telecommunications building related issues such as real estate expansion, environmental modifications and utilities, including preparing estimates and maintaining construction costs. Mr. Crockett provided a critique of BellSouth's collocation cost studies with regard to building (real estate) issues, process proposals, and recommended certain changes to the appropriate costs for collocation building related elements and activities.

Eno Landry:

BellSouth presented the rebuttal testimony of Eno Landry, Project Manager responsible for the development of collocation and network element and interconnection

provisioning and maintenance processes. Mr. Landry attempted to refute certain allegations made by various intervenors relating to the nonrecurring aspect of the BellSouth cost studies.

Dorissa C. Redmond:

BellSouth presented the rebuttal testimony of Dorissa C. Redmond, an Account Representative in the Strategic Planning group in the Property and Services Management department at BellSouth. Ms. Redmond attempted to rebut the testimony of AT&T witness Crockett. Specifically, Ms. Redmond explained the appropriateness of BellSouth's construction cost estimates, construction methods, and space planning processes for physical collocation.

Catherine E. Petzinger:

AT&T presented the testimony of Catherine E. Petzinger, District Manager in Regulatory and Legislative Affairs at AT&T. Ms. Petzinger provided a critique of BellSouth's switching investment studies and recommended new switching investments.

Georgetown Consulting Group:

BellSouth presented the rebuttal testimony of Jamshed K. Madan, Michael D. Dirmeier, and David C. Newton ("Georgetown Consulting Group"). Mr. Madan is the founding principal of the Georgetown Consulting Group, Inc. Mr. Dirmeier is a principal of the Georgetown Consulting Group, Inc. Mr. Newton is a consulting telecommunications network engineer. The Georgetown Consulting Group analyzed the changes in the various versions of the Hatfield Model. They also critiqued the inputs to the Hatfield Model, concluding that if the Commission were to adopt the Hatfield Model,

South Carolina-specific inputs should be used, which would increase the cost generated by the Hatfield Model, as presented.

Ellis E. Smith:

BellSouth presented the testimony of Ellis E. Smith, a statistical sampling consultant, who described his participation in the loop portion of the BellSouth cost study. He testified that the study was based on a statistically valid sample which he was instrumental in developing.

In Mr. Smith's rebuttal testimony he responded to the criticisms made by AT&T witness Mr. Wayne Ellison and ACSI witness Dr. Marvin H. Kahn regarding the statistical validity of the loop sample used by BellSouth.

William E. Taylor:

BellSouth presented the rebuttal testimony of William E. Taylor, Senior Vice President of National Economic Research Associates, Inc. Dr. Taylor addressed the economic cost and pricing issues raised in the testimonies of Richard Cabe, Wayne Ellison, James W. Wells, Jr., Don J. Wood, and Dr. Marvin H. Kahn. He specifically addressed how TELRIC should be developed for an ILEC like BellSouth and how these costs should lead to prices for interconnection and network elements offered by BellSouth.

Randall S. Billingsley:

BellSouth presented the rebuttal testimony of Randall S. Billingsley, finance professor at Virginia Polytechnic Institute and State University. He is also a financial consultant in the areas of cost of capital analysis, financial security analysis, and

valuation. Dr. Billingsley stated that BellSouth's use of an overall cost of capital of 11.25% in its cost studies is reasonable. In reaching this conclusion, he also estimated BellSouth's forward-looking cost of capital for providing interconnection and network elements.

Dr. Billingsley also attempted to rebut AT&T witness John I. Hirshleifer's direct testimony regarding BellSouth's cost of equity capital and overall average cost of capital. In addition, he attempted to rebut Mr. Matthew I. Kahal's statement before the FCC on behalf of MCI (File No. AAD 95-172, March 11, 1996), whose cost of capital analysis is relied on by Don J. Wood who testified on behalf of AT&T in this proceeding.

John B. Legler:

The Consumer Advocate presented the rebuttal testimony of John B. Legler, professor of Banking and Finance in the Terry College of Business at the University of Georgia. Dr. Legler critiqued BellSouth's rate of return testimony and presented his estimate of BellSouth's cost of capital and explained his calculations. Dr. Legler also recommended that BellSouth's proposal to use of capital cost of 11.25% be rejected.

**IV. FINDINGS AND CONCLUSIONS**

A. BellSouth's Cost Studies, as Modified by the Proposals of the Consumer Advocate and the Commission Staff, Comply with All Applicable Legal Standards.

This Commission finds that BellSouth's cost studies, as modified by the proposals of the Commission Staff in its Brief, should be used to establish rates for interconnection and unbundled network elements. The Commission also finds that the rates proposed by the Commission Staff, based on the above-stated methodology comply with all the requirements of the 1996 Act; specifically they are "just and reasonable," are "based on

cost,” and are “nondiscriminatory.” These rates, and the modified cost studies upon which they are based, recognize the actual costs that BellSouth is expected to incur in providing service on a going-forward basis. Such rates will fairly and adequately compensate BellSouth for the services, functions, and facilities it is required to provide to CLECs, while facilitating competition in the local exchange market in South Carolina.

After studying the proposed modifications to BellSouth’s total element long run incremental costs (TELRIC) methodology advocated by Consumer Advocate witness Buckalew, and by the Commission Staff in its Brief, for the development of rates in this matter, we believe that said modifications are totally appropriate and necessary, for reasons discussed below. These changes in the studies are as follows:

1. To the extent that BellSouth’s TELRIC cost studies already include a reasonable return on investment, it is not appropriate to include any additional profit in the price of a service. As stated by Buckalew, TELRIC produced by BellSouth includes the profit or cost of capital in its costs. Forward-looking costs attributed to provision of a service will include a reasonable return on investment, and therefore it is not appropriate to include any additional profit in the price of a service. (See Tr., Vol. 5, Buckalew at 11). Also, we hold that appropriate inputs to the study will be the capital structure, cost of debt, and cost of equity presently approved by the Commission for BellSouth. CLECs must compete against prices currently in effect which take into account these factors.

2. Depreciation rates approved by this Commission should be used as input into the TELRIC process. CLECs must compete against prices which are currently in effect which contain these approved depreciation rates. UNE costs should be based on the depreciation rates used to set current rates. Clearly, the depreciation factors used by BellSouth have never been examined by the Federal Communications Commission (FCC) or this Commission. We believe that the BellSouth economic lives used in the TELRIC process generally increase the cost to competitors. Certain accounts used in the study are significantly higher than the currently prescribed rates and higher than the range of projection lives determined to be reasonable. We agree with Consumer Advocate witness Buckalew that, since depreciation rates have been prescribed by this Commission and the FCC, these rates should be used as input in the TELRIC study. (See Tr., Vol. 5, Buckalew at 12-13.)

3. Revised fill factors should be adopted. The fill factors used by BellSouth build in excess capacity that would not exist within a competitive environment. Using actual fill factors in the study as done by BellSouth assumes that a new system is built for competition with current excess capacity. The BellSouth study assumes that the current level of service is the best that can be provided in the future. Accordingly, we believe that a fill factor for the Feeder System of 75% should be used. Also a fill factor of 50% for the distribution system should be used in the study. We hold that these are more objective fill factors than those that have been heretofore used. These numbers are based on Staff calculations using numbers obtained from the record of the case. (See also Tr., Vol. 5, Buckalew at 14-16.)

4. Common cost estimates utilized within the study should be reduced to avoid the potential for using common costs which are overstated. BellSouth used historical data for 1996 and increased it by an assumed level of inflation for the study. BellSouth used 5.39% in its rates. Competitive common costs should be less over time, on a forward looking basis. A common cost factor of 4.79% based on the total common costs of BellSouth being divided into total costs minus common costs should be utilized in the study, as per the testimony of witness Buckalew, and adopted by the Commission Staff in its Brief. (See Tr., Vol. 5, Buckalew, at 16-18.)

5. Residual cost recovery should be denied for unbundled elements. We do not believe that residual cost recovery has anything to do with TELRIC costs. Residual cost is the cost which would not be recovered by BellSouth in a competitive market and is estimated as the difference between historical cost and forward looking costs. This cost is related to past investments. Residual cost is therefore properly eliminated for unbundled elements. (See Tr., Vol. 5, Buckalew, at 18-19.)

6. Fall-out Factors should be reduced to reflect a more competitive environment. These factors reflect the percentage of orders which are not processed. A variety of Fall-out Factors were suggested in the testimony presented in this case, but we believe that a Fall-out Factor of 5% is the most appropriate number to use in the studies.

We hold that the TELRIC methodology proposed by BellSouth, as modified by the Consumer Advocate and the Commission Staff, yields the most appropriate rates for

UNE's, and we have instructed Staff to re-run the BellSouth TELRIC study with the above-stated modifications.

**B. The Intervenors' Cost Models are Rejected.**

In support of some of their proposed rates, AT&T and MCI have sponsored the Hatfield Model and the Nonrecurring Cost Model, both of which this Commission finds are unreasonable. For example, using the same inputs in various versions of the Hatfield Model yields greatly divergent results. The testimony of the Georgetown Consulting Group showed that taking the same inputs that were used in Version 2.2.2. of the Hatfield Model and using those input values in Version 4.0 of the Model, the price of a two-wire loop jumps \$6.14, from \$14.88 to \$21.02. (See testimony of Georgetown Consulting Group, Tr., Vol. 7, Madan, Dirmeier and Newton, at 68.) Obtaining this divergent an output with the same inputs raises serious questions about the validity of the Hatfield Model for calculating UNE rates.

The Commission also rejects both the Hatfield Model and the AT&T/MCI Nonrecurring Cost Model because they disregard what it will actually cost BellSouth to provide unbundled network elements and interconnection, even on a going forward basis. While the BellSouth study appears to be based on actual costs that it is expected to incur on a going forward basis, especially with the modifications as stated above, the Intervenor cost models develop costs based on what Intervenors believe that it would hypothetically cost a hypothetical local exchange company to provide service if it were to build an ideal new network today from scratch.

We must emphasize that we reject these models in this Order solely for the ultimate purpose of setting prices for UNE's, interconnection, and collocation. We take no position at this time on the use of the models for determining the appropriate Universal Service Fund (USF) obligation, which will be addressed in a later Order. However, for the purposes of this Order, based on the record before us in this case, we find the following deficiencies in the Hatfield Model:

1. The Hatfield Model generates hypothetical costs that ignore BellSouth's service area in South Carolina.

The Hatfield Model makes assumptions that completely disregard BellSouth's service area in South Carolina. For example, the Hatfield Model's assumption for the labor cost associated with installation of the NID was based on regional data that was adjusted theoretically to reflect market conditions in South Carolina. However, AT&T and MCI's labor cost assumption was approximately \$13.00 an hour less than the prevailing contract rate for the installation of NIDs in South Carolina. (See Hearing Exhibit 30; GCG 3, at 4-5.)

Further, the Hatfield Model assumed that the cost for buried drop placement would vary by density zone. However, there is no evidence that this assumption was based on any verifiable data in South Carolina. It also ignores the fact that there are several competitively bid contracts in BellSouth's territory which establish a fixed price for burying a drop anywhere in the State of South Carolina. (See Hearing Exhibit 30; GCG 3, at 5.) The buried drop placement cost assumed by the Hatfield Model is considerably less than the actual contract price that could be obtained in South Carolina.

The Hatfield Model generates considerably different results when the inputs are adjusted to reflect BellSouth conditions in South Carolina that are properly forward-looking. This was confirmed by the testimony of the Georgetown Consulting Group, which looked at current cost and other data specific to BellSouth in South Carolina, stripped the data of any embedded characteristics, and then fashioned the type of forward-looking cost or other data required for use by the Hatfield Model. When the inputs are appropriately readjusted, the most recent version of the Hatfield Model generates an average loop price of \$37.49, rather than AT&T and MCI's price of approximately \$15.89. (See Tr., Vol. 7, Madan, Dirmeier and Newton, at 56.)

2. The Hatfield Model seriously understates investment.

In the span of less than one year, AT&T and MCI have offered two different versions of the Hatfield Model. In the BellSouth-AT&T arbitration in February 1997, AT&T offered Hatfield version 2.2.2. Now AT&T and MCI are urging use of Hatfield version 4.0. In February 1997, a witness represented that the Hatfield Model presented the "best" cost information available. On cross-examination in this proceeding, however, the same witness conceded that the loop total investment calculated for South Carolina by AT&T and MCI using Hatfield version 4.0 is approximately \$17 million more than that calculated for South Carolina under version 2.2.2, which was presented to the Commission in the arbitration less than one year ago. (See, Tr., Vol. 5, Wood, at 317-318.)

3. The Hatfield Model distorts how an efficient firm operates in the real world.

It appears to us from the record in this case that the Hatfield Model determines the cost of certain unbundled network elements with little regard to the real world experience of an efficient provider in the local exchange market. The model starts out with a hypothetical provider for which little history exists or matters. That provider comes into existence in a “snapshot” fashion, in that it is assumed to be able to serve the entire current volume of demand for a network element even though no separate market exists for it today. Tr., Vol. 7, Taylor at 163. With this level of demand in view, the Hatfield Model attempts to construct a network that recognizes only that current wire center locations cannot be changed, but that every other aspect of the network can be built from scratch. This, in effect, replaces any existing network with a completely new or redesigned network that is assembled in one fell swoop. Again, a major difficulty is that the network built by the Hatfield Model is a hypothetical one, with no basis in what BellSouth has in place today, nor one that will be in place in the foreseeable future.

While the Hatfield Model attempts to portray network growth, it ignores the fact that BellSouth’s network typically grows in discrete increments to meet demand growth as it materializes and that, with such incremental deployment, the most cost-effective practice is to size the cable to meet forecasted demand. Tr., Vol. 4, Gray at 124-125. The reason for this is that real-world providers do not face a known, constant demand; rather they must provide both for growth and uncertainty in demand. Because real networks are built over time and must constantly change to accommodate changes in demand, the costs

of a real network are higher than the cost of a network that is built instantaneously to serve a snapshot level of demand. This difference does not imply that BellSouth is inefficient. An efficient provider operating in the real world attempts to minimize its costs by making reasonable and prudent decisions about serving a growing, uncertain demand and meeting customer demands regarding service quality. Tr., Vol. 7, Taylor at 164-165.

4. The Intervenors' cost models disregard the Eighth Circuit's rulings on combining UNE's.

The 1996 Act obligates BellSouth to provide unbundled network elements to requesting CLECs. BellSouth has agreed to do so and has submitted cost studies based on its belief as to what this process would cost. Intervenors' cost models assume that this is not enough, and that BellSouth should be obligated to combine network elements for their benefit. They further contend that if it is hypothetically possible to save costs by having BellSouth combine several unbundled network elements together, CLECs should be entitled to purchase such combinations at a "package price" that gives them the benefit of any theoretical cost savings. The Hatfield Model and the AT&T and MCI's Nonrecurring Cost Model are premised upon BellSouth's providing unbundled network element combinations to CLECs, specifically a combined loop and port.

The Intervenors' assumption that BellSouth will provide CLECs with combined loop and port necessarily would entail BellSouth combining these elements, which we believe BellSouth has no duty to do. As the Eighth Circuit Court of Appeals has

recognized, the 1996 Act does not obligate the incumbent to combine network elements for the benefit of CLECs. The Court made clear CLECs would receive network elements on an unbundled basis and that requiring CLECs “to combine the elements themselves increases the costs and risks associated with unbundled access as a method of entering the local telecommunications industry.”

Notwithstanding this clear pronouncement, Intervenors have previously argued that, by virtue of the Eighth Circuit’s failure to vacate 47 C.F.R. Section 51.315(b), the Court meant to obligate the incumbent to recombine network elements for the benefit of CLECs. On rehearing, the Court specifically vacated the rule in controversy. Consequently, without doubt, BellSouth is not obligated to deliver a loop and port as a combined--or “platform” offering.

C. The Commission Adopts certain BellSouth inputs into its cost studies, as explained and modified below, as opposed to various intervenor inputs.

1. Loop issues

The unbundled loop rate is one of the most important issues in this docket. BellSouth’s cost study developed “economic costs,” which reflects TELRIC plus consideration of common costs. Again, we believe that common costs should be included, but at a lower rate. We also think that “additional profit” should be excluded, and fill factors, and fall-out factors should be modified, as should the depreciation rate, pursuant to our earlier discussion. Therefore, on this basis, the unbundled local loop rate for 2-wire, service level 1, statewide average as calculated by the Commission Staff is

\$22.49. This is lower than the rate proposed by BellSouth, but higher than that proposed by AT&T.

(a) Drop lengths

A “drop” is the wire or cable from the BellSouth box to the customer’s premises. The cost of the “drop” is a component of BellSouth’s total loop cost. The Intervenors attack BellSouth’s cost of the loop primarily by attacking BellSouth’s assumptions about the length of the drop. Intervenors’ theory is that, in “actuality,” drop lengths are shorter than BellSouth’s assumptions used in its model.

In making its assumptions, BellSouth relied on its own subject matter experts, who applied their knowledge with respect to the areas where they actually provide telephone service in South Carolina. Tr., Vol. 4, Gray at 177. We believe that estimates from these experts are reliable. The Commission adopts the drop wire lengths utilized by BellSouth in its study.

(b) Structure sharing

Another major area of difference between the assumptions used by the parties relates to structure sharing. BellSouth includes the effects of structure sharing for poles and conduits through the plant specific expense factor by including the net rent (revenue less expense). The effect of sharing of Joint Trenching is included in the in-plant factor for buried cable.

It appears to us that it is in BellSouth’s interest to share structure when possible because it is the most economic course of action. Joint use of poles is the most prevalent

arrangement. Trenching is also shared; however, in the case of trenching, timing is a prevailing issue. Many times, power is required to a new development in the early stages, long before telephone service is needed. For reasons such as this, it is not always feasible to joint trench. Tr., Vol. 4, Gray at 138-139.

The Hatfield Model ignores such practical constraints by assuming that all aerial, buried and underground cables on the interoffice side are shared one-third, one-third, one-third, with other utilities. (See Commission Hearing Exhibit 30; GCV-9 at 2.) It appears to us that this assumption is unreasonable; it presupposes that the electric company and the cable television company will remove their existing facilities and rebuild their networks simply to share structure with the hypothetical carrier assumed under the Hatfield Model. The Commission rejects such sharing assumptions, and adopts the BellSouth structure sharing costs, insofar as the common costs do not exceed our previously adopted figure of 4.79%, for use in the TELRIC model.

(C) Bridge tap, cable size, and tapering

Intervenors assume that their hypothetical network not only has least cost efficient technology, but that it is perfectly managed from a theoretical standpoint. One area that this is particularly evident is with respect to their assumptions on feeder and distribution cables. These cables contain multiple pairs of wires and come in various sizes based on the number of wire pairs they contain. There are a limited number of cable sizes and some of the more common are 25, 50, and 100 pair cables.

BellSouth presented evidence that when installing cable, the cable cannot be perfectly sized for the exact number of homes for several reasons. First, it is highly unlikely that the number of homes served by a cable will perfectly match the number of wire pairs in a cable. Second, the cable must be sized to allow for future growth, both through the addition of new locations and through the addition of second lines at current locations. Third, there must be some excess capacity so that there are spare pairs of wire in case some of the pairs in use go bad. If a pair of wire goes bad, it is much easier to use a spare pair already in place than to have to install an entire new cable. Fourth, a feeder cable along one street may serve distribution cables that serve adjacent side streets. BellSouth's evidence stated that if a 100 pair cable runs along a main street for several miles, distribution cables from several side streets may tie into it. If the first side street cable taps into 25 pair of the main cable after the first half mile, the twenty five pairs which are used to serve that side street are active from the central office to the point where the side street cable taps in and connects. After that point, those 25 pairs of wires still exist in the feeder cable, but they are inactive and unusable. This is known as bridge tap. BellSouth's cost study was based on reasonable assumptions on cable sizes and bridge tap based on the experience of its subject matter experts, such as witness Gray. Tr., Vol. 4, Gray at 131-135.

Intervenors assume that wherever possible their hypothetical company would use the smallest, and therefore least expensive cable available. They assume that if a 100 pair cable is needed for part of a run, after 25 pairs are used, the hundred pair cable will end and will be spliced to a 75 pair cable. When the next 25 pairs are used, they assume

that the 75 pair cable will end and will be spliced in to a 50 pair cable, and so on. This is know as tapering.

The primary problem is that Intervenors focus only on the material costs associated with cable size and do not account for the many real world problems associated with the system that they envision. First, each hypothetical splice that they assume introduces more cost, i.e., the time and materials necessary to do the splice. Second, management and engineering time will be necessary to plan when and where such splices will be needed. This management and engineering is significantly reduced if technicians have limited choices for cable sizes and automatically know to use a certain size cable in one situation and a second size cable in another. Third, Intervenor' assumptions significantly increase material management costs. It costs more for a company to purchase and inventory splicing materials and cables in eight or nine sizes rather than one or two sizes. Similarly, it will take more trucks to carry these multiple different sizes of cable. The Commission rejects the Intervenors' assumptions on cable sizes and tapering because they are unrealistic and because Intervenors fail to account for the additional costs which they entail.

(d) Digital loop carrier technology.

There was considerable testimony about Digital Loop Carrier (“DLC”) technology and its use in a forward-looking network design. BellSouth assumed the deployment of non-integrated DLC in its cost studies, while the Hatfield Model and witness Carter advocate the use of integrated DLC.

By definition, integrated DLC involves the integration of the loop directly into the switch. Thus, integrated DLC would result in a combined loop and port, which this Commission has already found that BellSouth is not obligated to deliver. What BellSouth is obligated to deliver is unbundled loops and unbundled ports that CLECs can combine themselves. While there is no dispute that integrated DLC is an efficient, forward-looking technology, assuming the use of integrated DLC is incompatible with determining the cost of unbundled loops and ports, because, as BellSouth witness Gray pointed out, “it is impossible to provide an unbundled or an unintegrated network element using the (integrated DLC) technology that is designed to bundle or integrate them together.” Tr., Vol. 4, Gray at 145-146.

2. Switching issues

(a) SCIS

The Switching Cost Information System (“SCIS”) is a software program development by Bellcore to determine the central office switching investment required to provide telephone subscribers with services and features. This program was not specifically developed for BellSouth or for TELRIC cost studies; it is widely used by a number of the regional Bell Operating Companies to determine switching costs. Tr., Vol. 4, Garfield at 201-203. BellSouth used this program to develop the switching costs used in its cost models because, according to BellSouth, it provides long term, forward-looking costs.

We believe that SCIS is the most appropriate tool, when modified by our six factors as stated above, for computing switching costs in BellSouth's cost study. Several other state Commissions, including those in Delaware, Connecticut, and Pennsylvania, have already adopted the use of SCIS, including the SCIS/IN feature methodology for determining the TELRIC of unbundled switching elements. We believe that application of our six modifications, however, fine tunes the process so that the most appropriate switching costs are then calculated.

(b) Vertical features

BellSouth witness Varner sponsored BellSouth's proposed prices for unbundled vertical features. BellSouth has proposed an option that would allow CLECs to purchase a package port and any three features of their choice for a specific price. Commission Exhibit 1; Revised AJV-2 at 6. AT&T and MCI, through witness Petzinger, contend that there should be no separate, recurring rate for vertical features. Tr., Vol. 7, Petzinger at 41-42. The two companies state that the cost of all of the features is included in the price generated by the Hatfield Model for the switch.

This analysis is flawed in at least two respects. First, it ignores the basic principle of cost-causation and ignores the requirement that cost studies should be based on the total output of service. This ensures that costs for elements which use the network are treated consistently. Vertical features use switch capacity and should bear their proportionate share of the costs. Tr., Vol. 4, Garfield at 207-208. Second, this analysis totally ignores the specialized hardware that is required for many features, as well as

need to pay right to use fees to the vendor in order to access the features. Tr., Vol. 3, Caldwell at 136-137. AT&T and MCI cannot simply ignore these costs in order to receive vertical features for free. In its July 18, 1997 Order, the Eighth Circuit recognized that vertical features that are provided through the switching hardware and software qualify as separate network elements. This view comports with the costing methodology proposed by BellSouth, which calculates the costs associated with each separate feature. Once again, we find that BellSouth's proposal with regard to the cost of vertical features is appropriate when modified by the six factors stated above, and should be adopted as such.

### 3. Nonrecurring Costs

BellSouth's TELRIC cost studies reflect costs associated primarily with the ordering and provisioning of the unbundled network elements as nonrecurring charge for each such element. They also treat as nonrecurring charges the costs of developing and using the interfaces BellSouth created specifically to permit CLECs access to BellSouth operating support systems ("OSS"). BellSouth's TELRIC cost studies also have the advantage of consistency. In other words, the model was designed in a manner that would eliminate the duplicate recovery of costs in recurring and nonrecurring rates. In stark contrast, AT&T and MCI, through the sponsoring of their Nonrecurring Cost Model, attempt to eliminate virtually all nonrecurring charges. Their justification for so doing is a repeated characterization of such charges as "barriers to entry."

All business ventures carry with them the necessity for assuming some degree of risk and investment. Nothing in the Act requires BellSouth to subsidize its competitors' entry into the market. It is a well-recognized principle that the cause of cost should bear the cost. Costs of ordering and installing lines are caused directly by the party that orders those lines, whether that party is an end user or a CLEC. Thus, such costs are appropriately recovered through nonrecurring charges.

OSS, Processes and Procedures. The key assumptions underlying the AT&T and MCI Nonrecurring Cost Model is that unbundled network element orders (including orders for new and additional lines) will automatically flow through the ordering and provisioning process using currently available OSS, processes and procedures with little or no manual intervention. Although the AT&T and MCI Nonrecurring Cost Model refers to Bellcore's Telecommunications Management Network ("TMN") architecture, there is no evidence that the architecture has been fully developed or deployed anywhere.

CLEC Interfaces. BellSouth's studies include a charge for utilizing the interfaces it has developed for CLECs to obtain nondiscriminatory access to BellSouth's OSS databases. BellSouth has invested huge amounts of time and resources into developing these interfaces and it is undisputed that only CLECs will use the interfaces. Nevertheless, the CLECs in this docket, AT&T and MCI, contend that they should not have to pay for the interfaces. In Docket No. 96-358-C, this Commission adopted AT&T's offer that the costs associated with implementing electronic interfaces would be shared equitably among all the parties who benefit from those interfaces. BellSouth's

OSS cost recovery proposal is consistent with this ruling. However, once again, we believe that we must apply the six modifications as stated above to develop the proper rates. We find that the BellSouth proposal as modified by these factors results in the appropriate rates.

4. Collocation

Physical collocation is not an unbundled network element, nor is it interconnection under the Act. It is simply the process by which a CLEC uses space belonging to the ILEC to place “equipment necessary for interconnection or access to unbundled network elements.” 47 U.S.C. Section 251 (C)(6). Virtual collocation is the process by which the CLEC obtains this access when space limitations prohibit actual use of ILEC property for the placing of CLEC equipment. Subsection 251(C)(6) imposes upon the ILEC the following duty:

- (6) COLLOCATION.--The duty to provide, on rates, terms, and conditions that are just, reasonable, and nondiscriminatory, for physical collocation of equipment necessary for interconnection or access to unbundled network elements at the premises of the local exchange carrier, except that the carrier may provide for virtual collocation if the local exchange carrier demonstrates to the State commission that physical collocation is not practical for technical reasons or because of space limitations.

The duty to provide unbundled access to network elements and interconnection appear in separate sections of the Act. Moreover, the pricing standard contained in

section 252(d) on its face does not apply to collocation, but only to interconnection and unbundled network elements.

With regard to virtual collocation, we hold that BellSouth's collocation cost study is reasonable and consistent with the requirements of the 1996 Act. BellSouth's study accurately estimates the cost that will be incurred to provide virtual collocation and is hereby adopted by the Commission. Although we think BellSouth's collocation cost study also accurately reflects the cost incurred to provide physical collocation, we hold that approval of a lower amount would further the goal of fostering competition in the local exchange carrier market. We therefore approve a one time application fee of \$4,850.00 for physical collocation, which is close to the amount recommended by AT&T. See Hearing Exhibit 28.

## V. CONCLUSION

BellSouth has submitted detailed cost studies, which we believe, as modified, comply with all applicable legal standards. The Commission finds that these cost studies, as modified, should be used as the basis for setting prices in these proceedings. The Intervenor's cost models are flawed, as described above. Among other things, the Intervenor's cost models appear to be based on what would occur in a hypothetical network instantaneously constructed from scratch. BellSouth's model is based on its actual network, which, with the modifications described above, we find more appropriate for use as the basis for setting prices in these proceedings.

IT IS THEREFORE ORDERED THAT:

1. The Commission adopts the cost studies submitted by BellSouth, as modified above, for interconnection and unbundled network elements
2. The Commission approves the rates obtained accordingly from said modified studies for interconnection and unbundled network elements, except for two elements: Access to Poles and Access to Conduits. For these two, we adopt BellSouth's proposed prices. For virtual collocation, we also adopt BellSouth's price. In order to promote competition, we adopt \$4,850 as the one-time application fee for physical collocation.
3. A number of said rates are attached hereto as Appendix A and are hereby made part of this Order. Those rates not listed may be calculated using the BellSouth studies as modified by the methodology of the Staff as described above.

4. This Order shall remain in full force and effect until further Order of the Commission.

BY ORDER OF THE COMMISSION:

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Chairman

ATTEST:

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Executive Director

(SEAL)

**UNBUNDLED NETWORK ELEMENT PRICES  
(Dollars)**

Unbundled Network Element

Local Loop (including NID)	
2-wire, service level 1, statewide average	22.49
2-wire, service level 2, statewide average	26.25
4-wire, statewide average	35.86
2-wire ISDN, statewide average	32.47
Loop Channelization & CO Interface per system	363.77
Local Switching, Monthly	
2-wire Analog	2.35
2-wire line port (PBX)	2.35
2-wire ISDN digital line side port	34.04
Local Switching per minute (End Office)	0.0019295
Local Switching, Customized Routing per request per switch	
NRC-Electronic Order	226.22
NRC-Manual Order	254.06
Local Switching, Features (Recurring)	
Three-way Calling	1.10
Customer Changeable Speed Calling	0.1255
Call Waiting	0.0673
Remote Activation of Call Forwarding	0.3794
Cancel Call Waiting	0.0099
Automatic Callback	0.8023
Automatic Recall	0.3110
Calling Number Delivery	0.3280
Calling Number Delivery Blocking	0.3737
Customer Originated Trace	0.1406
Selective Call Rejection	0.1529
Selective Call Forwarding	0.1287
Selective Call acceptance	0.3283

**UNBUNDLED NETWORK ELEMENT PROPOSED PRICES  
(DOLLARS)**

<u>Unbundled Network Element</u>	
Multiline Hunt Service (Rotary)	0.1309
Call Forwarding Variable	0.0776
Call Forwarding Busy Line	0.0612
Call Forwarding Don't Answer All Calls	0.0663
Call Transfer	0.1400
Call Hold	0.0686
Toll Restricted Service	0.0751
Message Waiting Indicator - Stutter Dial Tone	0.0319
Anonymous Call Rejection	1.13
Teen Service (Res. Dist.Alerting Service)	0.2176
Code Restriction and Diversion	0.0716
Operator Systems	
Operator Call Processing using BST LIDB, per minute	1.21
Directory Assistance, per call	0.2621113
DS1 Local Channel, per month	37.20
DS1 Interoffice Transport, fixed	94.98
DS1 Interoffice Transport, per mile	0.7598
Common Transport, per DA call	0.000327
Access Tandem, per DA call	0.0024809
DA Database Service, monthly	127.23
Direct Access to DA, monthly	6983.00
Dedicated Transport, monthly	
Local Service, Voice Grade, 2-wire	16.83
Interoffice Channel, Voice Grade, Facility Termination	21.42
Common Transport	
Per MOU per mile	0.0000121
Facility Termination or Facility Charge, per MOU	0.0004672
Tandem Switching, per MOU	0.0006843

**UNBUNDLED NETWORK ELEMENT PROPOSED PRICES  
(DOLLARS)**

Unbundled Network Element

Signal Links/STPs	
Signaling Connection, per 56KBPS Facility	21.79
Signaling termination, per STP port, per month	156.46
Physical Collocation, Application Fee	4,850.00
Virtual Collocation, Application Fee	2,848.30
Service Provider Number Portability, per number ported	
Remote Call Forwarding, Residential	2.18
Remote Call Forwarding, Business	2.18
Dark Fiber, per 4-fiber strands, per route mile	72.45
Access To Poles, Ducts, Conduits, and Rights-of-Way	
Access to Poles, per foot, per year	3.38
Access to Conduits, per foot, per year	0.49
Advanced Intelligent Network (AIN) Services, Initial Setup	
AIN SMS Access Service, Establishment, per state	296.16
Operational Support Systems	
Interactive Ordering & Trouble Shooting, per user, per month	50.00